



Building Courage for Creativity

**Fostering creative confidence in entrepreneurial education
by empowering risk-taking behaviour**

Master thesis by Nina Touw

Colophon

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Master thesis

Building Courage for Creativity:
Fostering creative confidence in entrepreneurial education by
empowering risk-taking behaviour

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Preface

Dear reader,

I am happy to share my graduation thesis with you. For me, this means that my journey at industrial design engineering comes to an end. This journey started six years ago, in which I have developed many passions and interests in the world of design and beyond. During my master of Strategic Product Design, I found my interest in taking up challenges to change the world towards a more equal and sustainable place. I believe that creativity is the first step towards changing the way we look at the world, and by implementing this within our education, we could create a generation of people that can adjust towards the many challenges ahead of us.

I could not have completed this project without the many people that contributed directly and indirectly:

Let me start by thanking my supervisory team. Milene, for your critical remarks and thinking along when I got stuck. Katrina, for pushing me to think about the 'why' of my actions and decisions. And Robert, for giving me such an interesting and challenging assignment to start with, your listening and evaluations on my doubts, and for connecting me to your network.

A big thank you to all of the participants who took the time to talk with me about this challenge and showing me the world of education. These moments often filled me with positive energy, motivating me to continue working on this project. Without your contributions, this project would not have come to where it is now.

Finally, I want to give many hugs to everyone close to me. My family, and especially my dad, who always made time for me and showed me the positives when I only saw the negatives. My study buddies and friends, for studying together, along with the many 'balu-loopjes' and coffee moments in which I could share my story and get some fun distractions. And of course Bart, for always being there for me, and supporting me through the whole process.

For you as a reader, I hope you become inspired, and find value in your personal creativity.

Enjoy the read!

Nina

Abstract

This thesis focuses on fostering creative confidence within the context of entrepreneurial education for the VMBO/HAVO/MBO levels. Recognising the creative potential in everyone, the challenge is to bridge the gap between being creative and having the confidence to use it.

The literature review identified the importance of giving students the freedom to experiment and immerse themselves in experiences, emphasising the overlap between entrepreneurial and creative attitudes such as risk-taking, critical thinking and openness to ambiguity. It became clear that in a creative learning process it is not the end result that is important, but the process itself, encouraging reflection and learning from mistakes. However, the fieldwork revealed that the existing tasks within GoFuture were seen as too framed, limiting students' exploration of questions. Teachers expressed an openness to more active and creative teaching, but faced challenges in preparation due to time constraints and a lack of tools from the platform.

Students and teachers agreed on the importance of creativity in education and entrepreneurship and expressed a desire for more opportunities to integrate creativity into learning. Hands-on, group-oriented tasks were seen as more motivating and challenged the prevailing focus on rational thinking.

Moving to the design phase, three critical design directions were identified, emphasising the need for an experiential, step-by-step approach to learning. The potential of GoFuture to foster creative confidence by encouraging risk-taking behaviour was recognised, leading to the formulation of a new design goal that prioritised creating awareness and courage to take risks and fail.

A secondary literature review was performed within the context of risk-taking. A set of guidelines was created that support within the development of designing a solution.

The subsequent stages of ideation, prototyping and testing led to the development of a creative teaching module for teachers. Build upon the proposed design guidelines, this module includes several themes, assignments and a sharing platform. The module supports teachers in fostering a creative mindset in the classroom and provides a pathway for innovation within the education system.

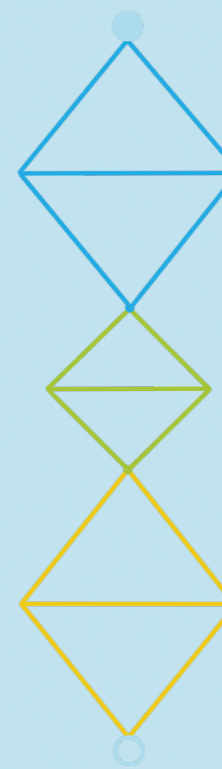
Alongside the module, a roadmap has been developed, consisting of four horizons. The initial focus is on raising awareness through the creative teaching module, and the end vision focusses on fostering a culture of creativity, innovation and confidence in both students and educators, preparing students for a dynamic and innovative future.

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1 Introduction



This report delves into the complexities of building creative confidence within the field of entrepreneurial education. This introductory chapter introduces the involved clients and the focus of the project. Based on the introduced initial problem framing, a design goal is formulated. To fulfil this design goal, several research questions are formulated. Finally, to answer the research questions, the approach of the project is discussed, including the used methodology.

1.1 Project introduction

- 1.1.1. Introducing the clients
- 1.1.2. Project focus
- 1.1.3. Initial problem framework
- 1.1.4. Project aim

1.2 Project approach

- 1.2.1. Structure of the project
- 1.2.2. Methodology

1.1 Project introduction

This graduation project aims to foster creative confidence in students and teachers within entrepreneurial education. This introduction contains a short description of the focus of the project and elaborates on the aim and initial problem framing of the project. Furthermore, it gives introduces the context of the problem, including the involved clients and stakeholders.

Methods & Activities

Literature research

Literature research was performed to get a deeper understanding of the scope and focus of the project.

Client interview

To get an understanding of the initial problem framework, several talks with the client were performed.



1.1.1. Introducing the clients

This graduation project is written for the master Strategic Product Design at the TU Delft. Two clients are involved with the project. Who they are, and why they are involved with the project is shortly described below.

GoFuture

GoFuture is a company that provides an e-learning platform that aims to teach students how to become successful entrepreneurs within secondary and higher education in the Netherlands (VMBO-HAVO-MBO). They want to prepare students for the future and let them get a first sense of the real world outside of school. Besides this, their aim is to let students discover and develop their passions and abilities and reflect on these. Their goal is to challenge students to take initiative and responsibility and dare them to be creative, experiment and make mistakes.

Connected Creativity Lab

The Connected Creativity Lab is a research lab of TU Delft, that focuses on exploring creative behaviour, processes and skills. Through collaboration, they try to convey the value that creativity can bring to any organization in need of innovation.

Both GoFuture and the Connected Creativity Lab are interested in implementing more creativity within the educational field. The Connected Creativity Lab does this for example within their minor 'Connected Creativity', and GoFuture tries to implement this within the assignments and lessons on their entrepreneurial learning platform. This project looks into creativity in the education field, and is therefore of value for both parties. The project is directed towards the implementation of creativity within the platform of GoFuture, and therefore the concept will be developed for GoFuture specifically.

1.1.2. Project focus

GoFuture believes that developing entrepreneurial attitudes is crucial for becoming a successful entrepreneur. In developing their curriculum, GoFuture has not only included the usual entrepreneurial skills, such as drawing up a budget, but also assumes that a good entrepreneur must have 21st century skills, such as collaboration, initiative and creativity (Figure 1). They aim to include these skills in their curriculum, but also state that they have not yet reached this goal. The project brief introduces the goal for the project, which is to answer the question on how to stimulate creative confidence in entrepreneurial education through GoFuture (Appendix A).

Creative thinking plays a vital role in driving innovation and progress in our society, enabling the invention of new ideas, perspectives, concepts, principles, and products that can improve our lives and shape the world around us. It is important to foster creative thinking within young adults, to encourage them to know how to communicate and express their ideas later in life (Mossing, 2013).

The ability to create new ideas and to find new ways in seeing problems and opportunities is crucial for the development of entrepreneurial attitudes (Asdani & Kusmintarti., 2014). Making use of the iterative creative process is crucial for developing in-depth and novel outcomes that lead to successful enterprises (Wynn & Eckert, 2017).

In this report, it is assumed that everyone is creative (Runco, 2004). But to actually express creative behaviour, one needs to have the confidence that they can execute a creative task (Kelley & Kelley, 2014). Within the project kick-off, GoFuture mentions that they believe that some students currently struggle with generating ideas, and may not have the ability to come up with an innovative vision on their own. Besides this, they appear to have trouble with iterating on their initial vision. Most problems appear to relate to the lack of experience with creative thinking and the creative process.

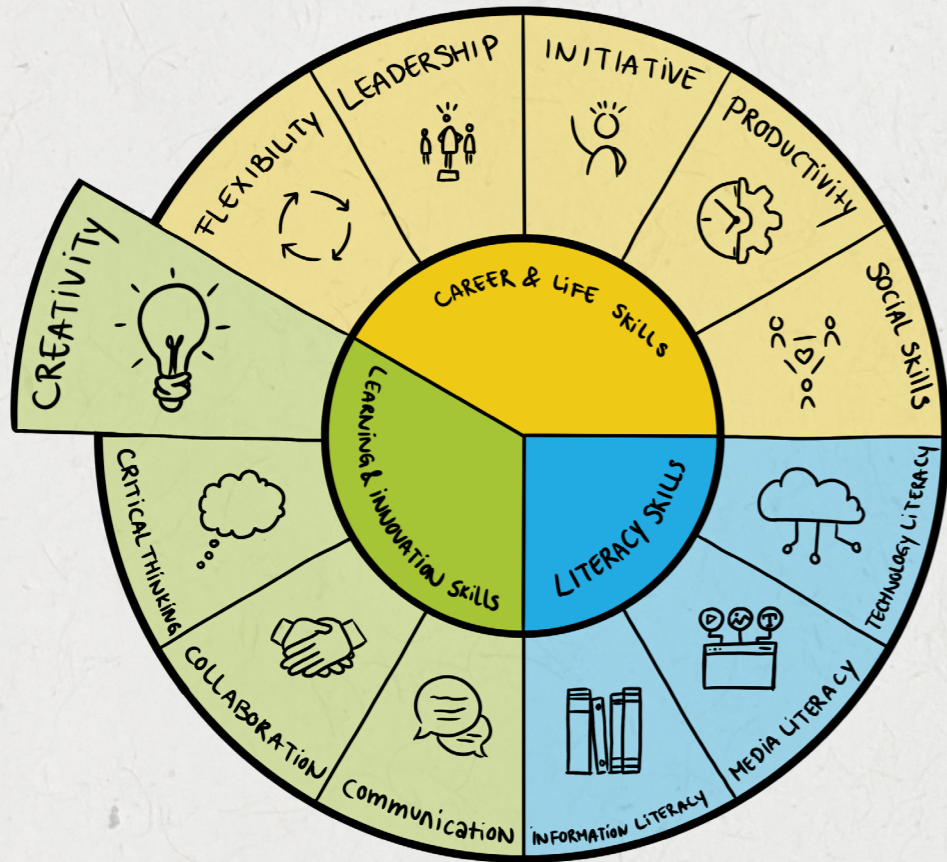


Figure 1: 21st century skills (Trilling & Fadel, 2012)

Additionally, GoFuture fears that many educators lack the confidence and knowledge to incorporate creativity into their teaching. As a result, they may not know how to support students in creating their own vision and working on an iterative creative process. This can be a significant challenge, as inspiring and guiding students in the creative process is a key aspect of cultivating a strong entrepreneurial mindset. Besides challenging students to use creative thinking, it is thus important for educators to build their own creative confidence to foster a creative culture in the classroom.

This leads to the design goal of the project:

"This project aims to boost creativity in students within the context of entrepreneurial education through the education platform of GoFuture. This will be achieved through cultivating creative confidence in both students and educators."

1.1.3. Initial problem framework

Based on the input generated from talking with GoFuture, an initial problem framework was created in which the occurring problems and their connections to different stakeholders were visualised (Figure 2). The problem framework is used to test the understanding of the problem indicated by GoFuture. The framework is used as a basis for the development of the research questions, discussed in the next section.

Within the project, the focus is placed on the development of creative confidence within the lessons. But other 21st century skills are interconnected with the development of creativity and entrepreneurial attitudes. Without these skills, like initiative-taking and reflective and critical thinking, creativity cannot be taught. GoFuture assumes that some of these skills are currently also lacking, and could be interrelated with the lack of creativity within the students. These lacking skills are also mapped out in the framework. A more elaborate exploration and explanation of the 21st century skills and their connection with GoFuture can be found in Appendix B.

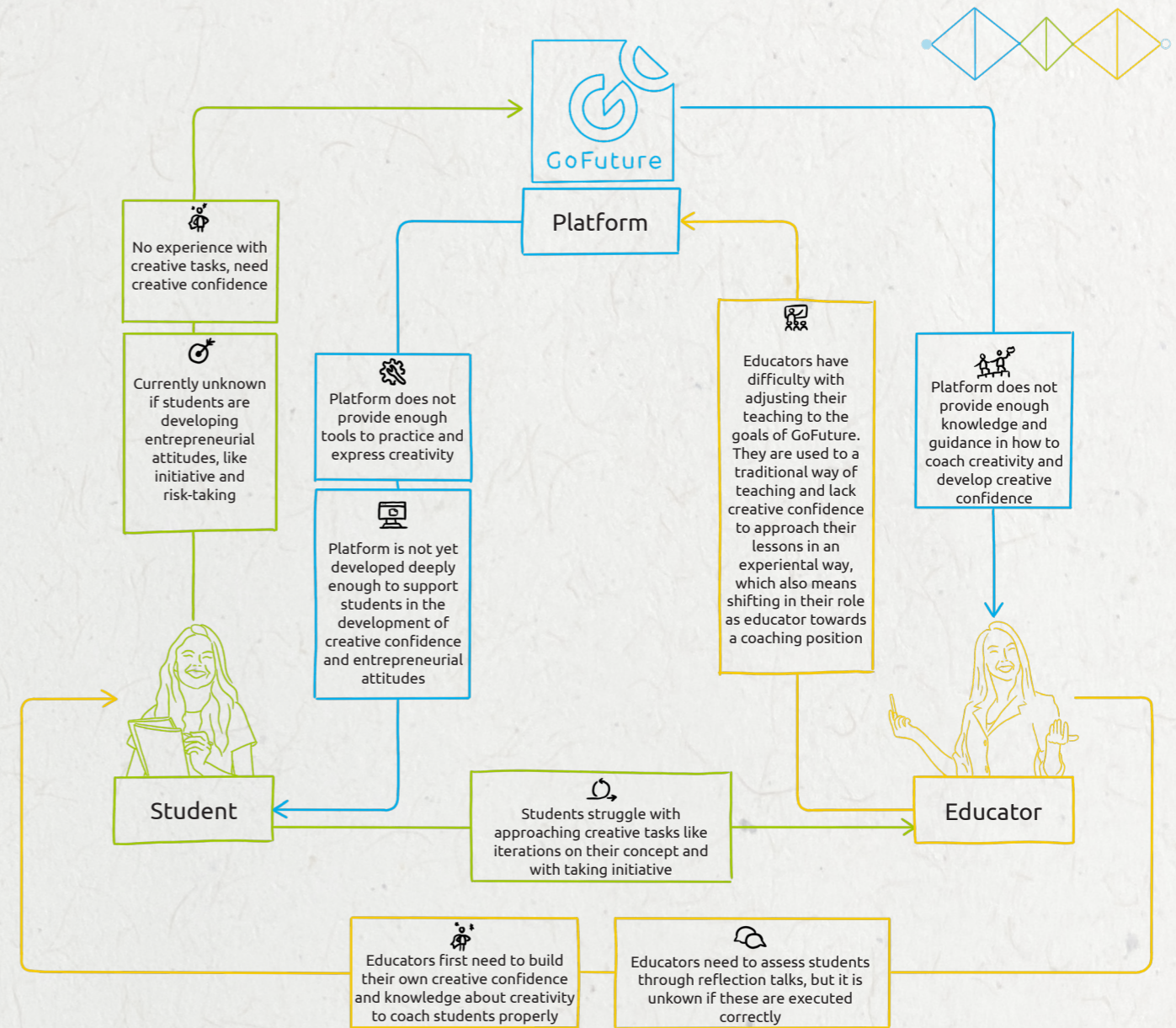


Figure 2: Initial problem framework

Assumed pitfalls

There are three possible pitfalls to consider that all relate to one main issue: students are currently unable to develop their creative confidence. These can be referred back to the three involved stakeholders within the project: the students, the educators and the platform.

The students

It is assumed that students have difficulty with iterating and reflecting on their work and with taking initiative to try out new things. Because of their lack of experience, they lack confidence in using their creativity and tend to have a negative attitude towards using creativity. It needs to be measured if these assumptions are correct.

The educators

There is no initial data on how the educators perform, and how they deal with implementing creativity in their classes. It is assumed that they lack experience with using creativity themselves, and therefore also lack creative confidence, making them hesitant towards trying out creative approaches.

The platform

The e-learning platform is currently not developed thoroughly enough to guide students in building up creative confidence. The existing tools do not stimulate students to develop creative and entrepreneurial attitudes. The platform does also not provide any tools towards educators for guiding students in developing these behaviours. These assumptions also need to be verified through further research.

1.1.4. Project aim

The initial problem framework (Figure 2) introduced in the previous section visualises the occurring problems and their relationships towards each other, according to the assumptions of GoFuture. To find out how to fulfil the design goal, these assumptions need to be validated within further research. The framework functions as a base for the development of the research questions.

The initial problem framework explains that it is currently unclear what the impact of GoFuture is on students' creativity. It is important to find out if GoFuture is already implementing creativity within their platform, and how this translates into the lessons.

Besides this, it is currently unknown how students approach creative tasks within their lessons and what knowledge and experience they have towards approaching these tasks.

Finally, it is unclear how the teachers currently coach the students, and how they can be supported in developing creative behaviour, through the improvement of creative confidence.

Based on these insights, one main research question is formulated:

"How can the GoFuture platform facilitate the development of creative confidence in both educators and students, with the goal of fostering creative behaviour?"

Sub-research questions

To answer the main research question, and achieve the design goal, several topics need to be explored. These are rephrased in sub-research questions. The sub-questions are divided in literature research and field research. The literature research focusses on understanding entrepreneurship and creativity within education in general, and the field research focusses on understanding the current situation within the context of using the e-learning platform of GoFuture.

Understand – literature research

1. *How does GoFuture currently work?*
2. *What attitudes do you need to become an entrepreneur?*
3. *Which approach is needed to teach entrepreneurship?*
4. *What attitudes do you need to be creative?*
5. *What is needed to gain creative confidence?*
6. *Which approach is needed to teach creativity?*

Explore – field research

1. *What is the current impact of GoFuture on the development of 21st century skills, specifically creativity?*
2. *What is the current knowledge of students towards creativity and how do they currently approach creative tasks?*
3. *How do educators currently coach their students and how can they be supported in fostering creativity within the classroom?*

Key take-aways

- This project focusses on the development of creative confidence, in the specific context of entrepreneurial education in the levels of VMBO / HAVO / MBO.
- The creative confidence of both students and teachers should be taken into account.
- It is assumed that everyone is creative, but not everyone is creatively confident enough to behave creatively.

1.2 Project approach

This chapter introduces the structure of the research, and divides this in several sections, based on the framework of the double diamond (Design Council, n.d.). The methodology used in each stage of the process is shortly explained.

1.2.1. Structure of the project

An adjusted double diamond approach is used within the project (Design Council, n.d.). The design process is split up in three diamonds. Each diamond consists of a diverging and converging phase. In the diverging phase, new knowledge and ideas are gathered. In the converging phase, these insights are evaluated and conclusions are drawn. In each part of the diamonds, several activities are executed, making use of different methodologies. The complete structure of the project can be found in Figure 3. The three diamonds are split up in 7 sections, which describe the chapters of the report. The sections are shortly explained below.

The actual process was messier than the visualised process, going back and forth between different stages and iterating within each diamond. A simplified and linear version of the process is presented within the report, considering the clarity of the story.



Introduction

The starting point of the project, describing the focus and approach of the project.



Delve

Literature research is executed to understand the concept of creativity and entrepreneurship, and their relation to education. The GoFuture platform is explored to get a sense of their offerings.

To explore the current situation with the lessons of GoFuture, different methods have been used, which are: observations, interviews, co-creation sessions and a questionnaire. Literature research was conducted to substantiate insights.



Define

Insights are clustered and mapped through a needs mapping procedure, which leads to the proposal of three design directions. The design directions are evaluated based on a list of requirements and one design direction is chosen.

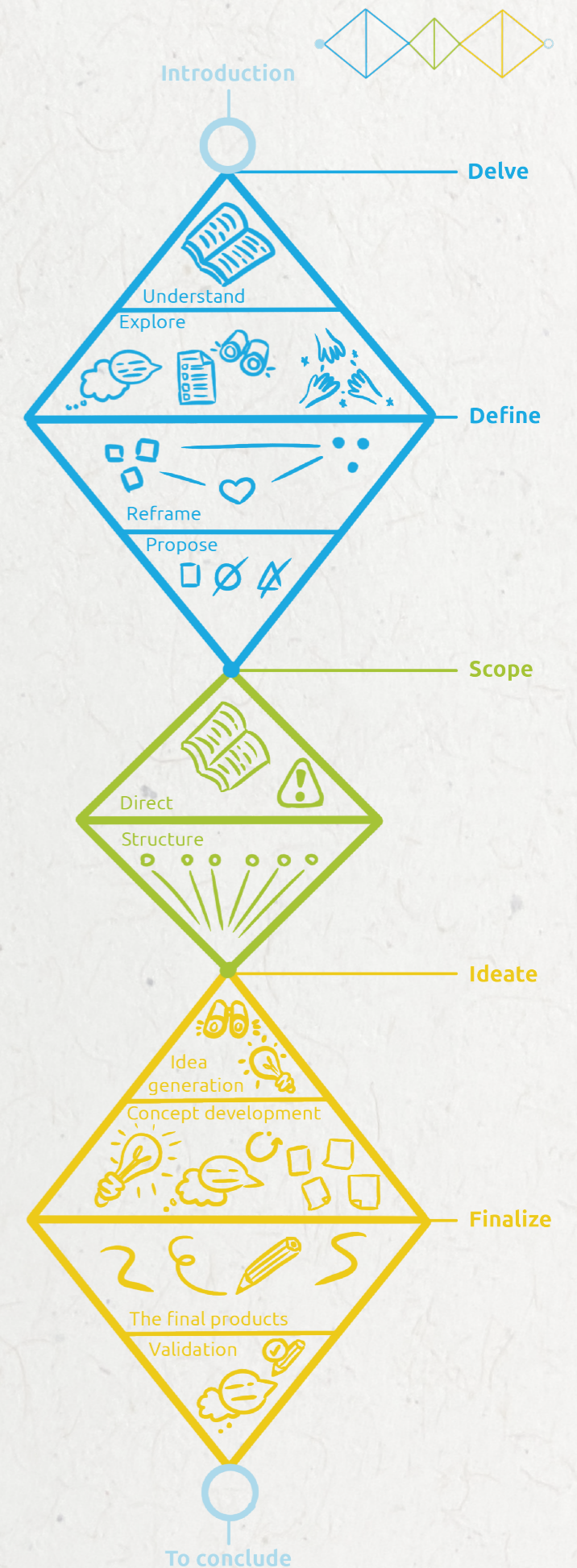


Figure 3: Triple diamond design process



Scope

Through a secondary literature research and several risk experiments, the project is scoped towards a clear solution space. The insights are clustered within a thinking map, and the list of requirements is revisited.



Ideate

Within the ideation, the context is further explored, and the first ideas are proposed, together with a concept direction and exploration through making use of several methods, like brainstorming and a creative facilitation session. The concept is then further developed through several evaluation sessions.



Finalize

In the final phase, the final design is presented and explained. Important decisions are discussed and connected back to the gathered data. Through several validation sessions, the design is evaluated.



To conclude

The report is concluded with a discussion of the results and further recommendations and limitations. A personal reflection is written, looking back on the process of the project and its learnings and challenges.

1.2.2. Methodology

Throughout the project, several methods have been used to gather insights and explore the solution space. The most prominent methods and are shortly explained below in chronological order. A complete list of the activities for data gathering with its participants can be found in Appendix C.

Delve

Interviews with experts

To get acknowledged with the context of the project, exploratory interviews were conducted with two experts in the field of education and entrepreneurship. The gathered information is used to get acknowledged with the context of the project and to get a deeper understanding of the outcomes of the literature research and is not used in the data analysis.

Observations

Observations in four classrooms that use GoFuture were executed to get an understanding of the current lessons of GoFuture, how the platform is used and how students and teachers experience these lessons. The method of observation was chosen, because this method is helpful in getting an understanding of what is happening in 'real life' (Abrams, 2000). The method is combined with semi-structured interview questions to several of the students to get richer data and to acquire a deeper comprehension of the intentions and knowledge of the students.

Interviews with teachers GoFuture

After the observed classes, semi-structured interviews were conducted with the four teachers of the classes to get a deeper understanding of how the teachers use GoFuture and how they see the goals of GoFuture, specifically creativity, coming back in the platform.

Interviews with creative teachers

Two additional education interviews with creative educators were conducted to understand the educational context from different perspectives outside of GoFuture. The interviewees are both experienced with setting up creative lessons and questions that were asked were framed around how they perceive the creative attitude of their students and colleagues and how they cope with this.

Questionnaire

During the fourth observation, a questionnaire was conducted with the students within the

class (n=13). The idea of the questionnaire was to find the differences in creative confidence before and after their education week with GoFuture, given by a creative teacher. But, because of the upcoming summer holiday, the second questionnaire was never filled in by the students. The output from the open questions was still insightful and could still be used to get a general idea of the knowledge about creativity by students. Besides this, the questionnaire was used to initiate the conversation about creativity in class during the observation session.

Co-creation

Two co-creation sessions, with a total of 6 participants, were used to answer the question: "How could GoFuture support teachers with using creativity in their classes?". The co-creation was also meant to dive deeper into the knowledge of the teachers and their attitudes towards creativity.

Scope

Risk experiments

To create an actual idea of what people think of and feel when you mention the words 'risk' and 'failure', two risk experiments were executed, one in a small research group, one individually. The goal of the experiments was to get an understanding of the feelings that arise with failure, risk-taking and talking about failure. As a first experiment, personal failures were discussed with 5 participants. The second experiment was a personal risk-taking experiment, in which I tried to involve myself in more risk-taking and writing down which feelings occurred when taking these risks, and what feelings occurred with (the possibility of) failure.

Ideate

Observation

Within the minor 'Connected Creativity', students are learning about creativity, explore their own creativity and build creative confidence through practice. During the first day of the minor, observations were conducted, to get practical examples of how a brave space can be created.

Idea generation sessions

Several ideation sessions have been executed for idea generation, like brainstorming, How-to's, a morphological chart and individual brainstorming (Van Boeijen et al., 2014).

Creative facilitation

Two creative facilitation sessions have been executed within the course of 'Creative Facilitation'. Two students of the course facilitated the sessions, both with 4-5 participants. Because of the deep involvement within the project, I took on the role of the problem owner. The sessions were used to gather out-of-the-box ideas and inspiration for the ideation on the concept.

Evaluation interviews

To evaluate the design, and to discuss ideas and assignments, three evaluation sessions were conducted with two experts and two teachers, making use of a low fidelity prototype.

Assignment testing

One of the designed assignments is tested within the minor of Connected Creativity (n=24), to use as source for further iteration and development of the designed assignments.

Finalize

Assignment validation

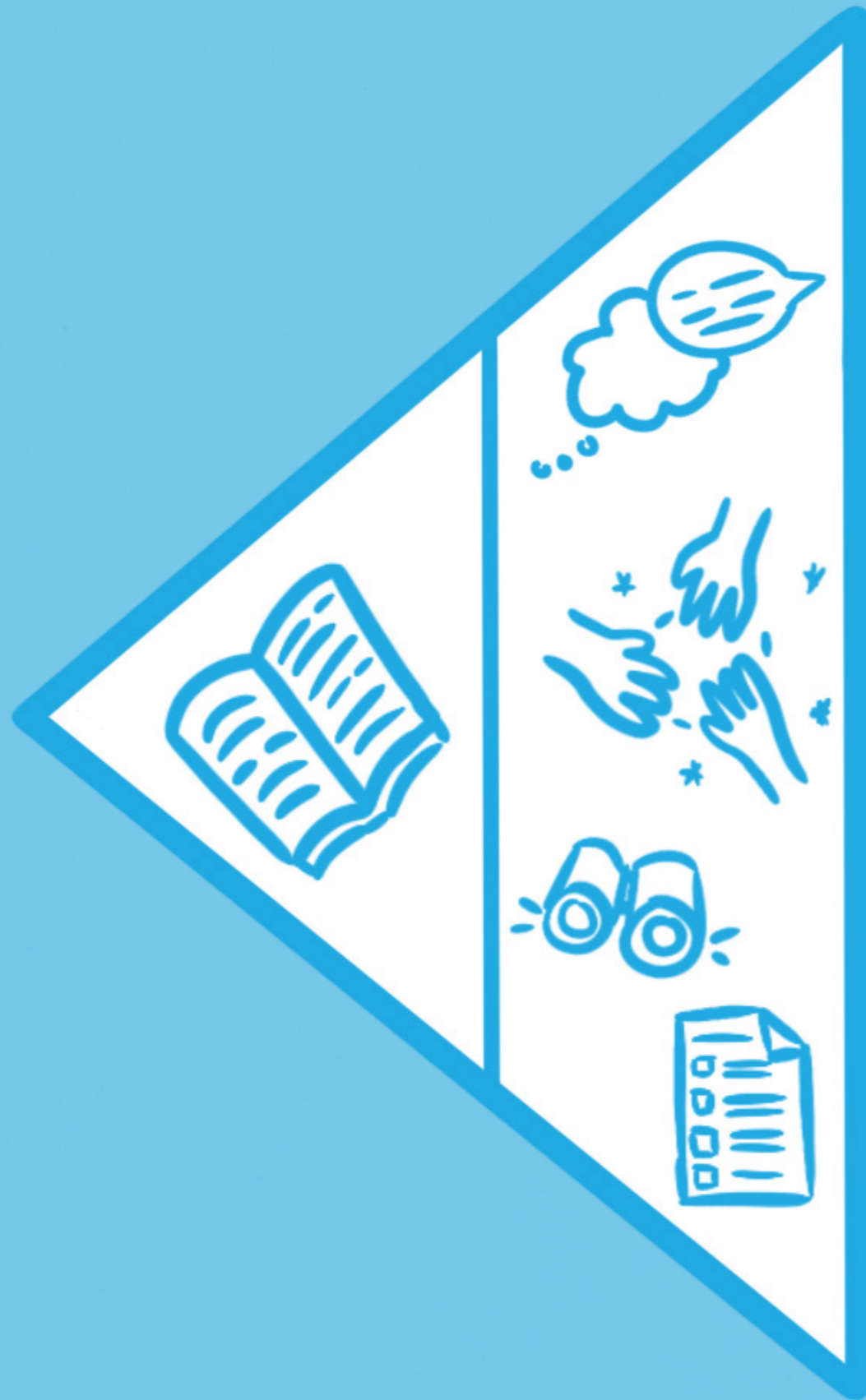
The designed assignments were further developed and tested within a small setting of 5 participants. The results were used to test if the intended goal was achieved.

Validation interviews

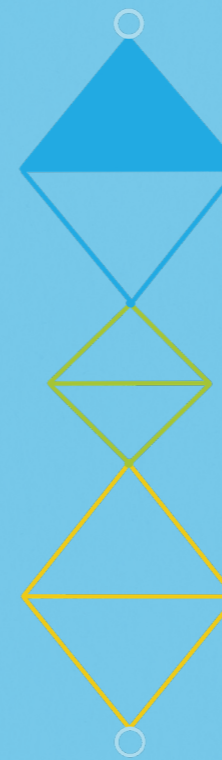
The design is translated in a high fidelity prototype and used to test the design on fulfilling the goals and to test its viability, desirability and feasibility.

Parallel activities

Parallel to these research activities and throughout the whole process, books, scientific papers and other media like podcasts have been studied to complement, confirm or enrich the gathered data.



2 Delve



This chapter delves into understanding and exploring the current educational system. It introduces the current GoFuture platform, and starts by analysing what is needed to give entrepreneurial and creative education through literature research. Then the current context in which GoFuture is used is further analysed through field research, with a closer look into each of the involved stakeholders: the teachers, students and the platform. Finally, an additional stakeholder is introduced, that arose from the executed field research.

2.1 Understand

- 2.1.1. The GoFuture platform
- 2.1.2. Entrepreneurial education
- 2.1.3. Creative education

2.2 Explore

- 2.2.1. Research set-up
- 2.2.2. The current situation
- 2.2.3. Additional stakeholder

2.1 Understand

This chapter explores the context of the problem by gaining understanding for the needs of entrepreneurship and creativity within education.

First, the GoFuture platform is further explained. Then, the research questions related to the context of entrepreneurial and creative education are analysed.

Research questions

1. *How does GoFuture currently work?*
2. *What attitudes do you need to become an entrepreneur?*
3. *Which approach is needed to teach entrepreneurship?*
4. *What attitudes do you need to be creative?*
5. *What is needed to gain creative confidence?*
6. *Which approach is needed to teach creativity?*

Methods & Activities

Literature research

To understand what is needed for entrepreneurial and creative education, literature research is executed



2.1.1. The GoFuture platform

To understand what needs to be done, it is first important to understand what GoFuture is currently doing. Therefore the following research question is stated:

“How does GoFuture currently work?”

This research question is answered through conversations with the client, and going through and analysing the online platform.

GoFuture works together with different education levels, but mostly focuses on VMBO, HAVO and MBO (see Appendix D for further explanation of the Dutch education system). At VMBO and HAVO level (secondary education), the platform is used for students to explore and experiment with starting a fictional business. At MBO level (higher education), students already know what kind of business they want, and for this, the platform helps them to practise with setting up their own business for the future.

Within secondary education, the platform is often used as an additional aspect of economics classes. How the platform is used differs for each school. Some schools use it as additional classes for which the students are not graded, except for their contribution to the class. These classes can be given throughout the year for about 1-2 hours a week, or they can be part of a one week full time workshop course. Other schools use it as an addition to their economics classes, and use the classes as practice for setting up their own fictional company and to learn about entrepreneurial behaviour. The students are graded for their work and spend around 1-2 hours a week on the platform.

Within the MBO-level, the platform is used as a teaching method for entrepreneurial classes. The students use the platform to set up their own fictional company, as practice for the future. These classes are mandatory and graded as an official part of their education, on which they spend around 1-2 hours a week.

The schools decide if and how they want to work with the method of GoFuture, based on their goal for the classes. The teachers that give the classes often have a background in economics, but some have previous experience working as an entrepreneur.



Figure 4: the platform topics that students run through



Figure 5: Example of two GoFuture exercises

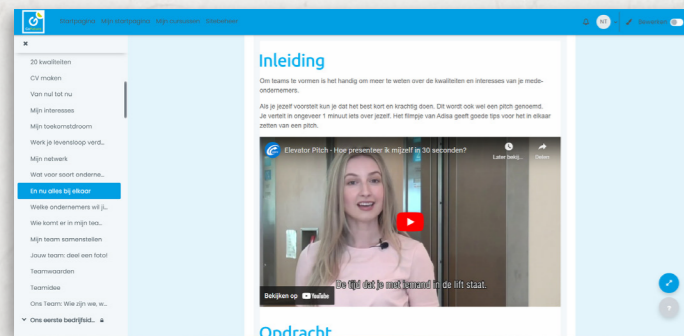


Figure 6: Explainer video on online platform GoFuture

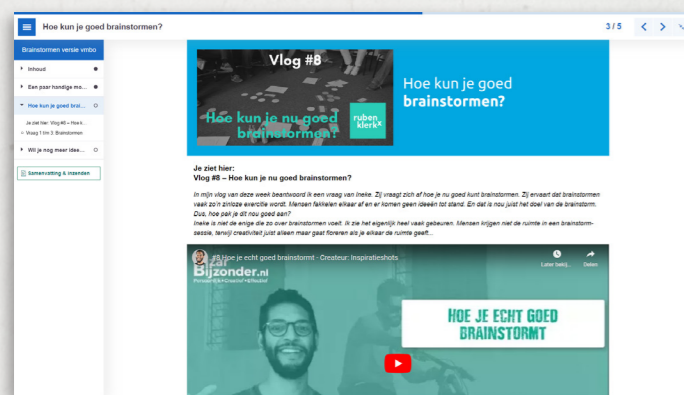


Figure 7: Toolbox 'brainstorming' GoFuture

The students can login at an online platform that offers weekly classes related to developing a fictional company. Students go through different steps, starting with their personal strengths and ambitions, towards forming a team and together creating a vision and developing a fictional company guided by the business model canvas. Figure 4 shows the different topics students explore throughout their classes. Besides working on founding a business, the platform also focuses on the development of entrepreneurial skills and attitudes of the students. At the end of each topic, students have to summarise their learnings, test their knowledge with a self-test and reflect on their performance.

The platform is flexible in use. The schools can decide for themselves what topics they believe are interesting and can adjust this to their personal needs. It depends on the school and education level how long it takes to go through the process completely; some schools take half a year to complete all topics superficially, while others take one year to really go through setting up a company and creating a business model canvas in depth. Teachers can decide how they want to use the platform within the classroom; some teachers follow the platform step by step and only give short presentations at the beginning of the lesson, while others use the platform more freely by picking out interesting subjects and building extra assignments around them.

The tools that GoFuture offers consist of explorative exercises, informational toolboxes that help with executing the exercises, and explainer videos (Figure 5-7). The assignments run in Adobe Acrobat, and students have to hand in their assignments on the GoFuture website. In this way, teachers have an overview of the progress of the students and everything is in one place. Teachers can decide which assignments are visible to the students and which are mandatory and voluntary. Besides filling in the assignments provided by GoFuture, students are also encouraged to explore for themselves, for example by doing interviews with potential users and practitioners in the field of entrepreneurship. Students have to reflect on their work at the end of a topic. Teachers can read this reflection and respond to this. Teachers can also

provide feedback on the assignments and grade the students on their work. Gamification methods are used to motivate students in their work: their results can be shared on a leader board and they can get digital rewards for their achievements.

Conclusion

To answer the research question in short; the current GoFuture educational platform can be used in different ways and adjusted to the needs and wishes of the schools. The teachers can choose which topics they want to implement in their lessons, and in which way they teach the classes. GoFuture offers different tools that can be used within the lessons, like exercises, informational toolboxes and videos. Students are graded on their work by the teachers, or can fill in reflections on their work.

2.1.2. Entrepreneurial education

To understand what is needed to improve creativity for entrepreneurship within the GoFuture platform, it is first important to consider what entrepreneurial education entails. This part answers two questions by using literature research:

- What attitudes do you need to become an entrepreneur?
- Which approach is needed to teach entrepreneurship?

Entrepreneurial attitudes

According to Rae & Carswell (2000), entrepreneurship can be understood as:

“A process of identifying opportunities for creating or releasing value, and of forming ventures which bring together resources to exploit those opportunities.”

To learn about entrepreneurship it is thus important to learn how to identify these opportunities, and to act upon these. But learning this can not only be done by knowledge transfer, through teaching about business models and price calculations, but is also embedded within ones' behaviour through developing entrepreneurial skills and attitudes (Wang & Chugh, 2014; Rae & Carswell,

2000; Taatila, 2010; Fayolle & Gailly, 2008; Borasi & Finnigan, 2010). An entrepreneur is, according to Wickham (2006) defined as:

“Someone who is creative, seeks and discovers niches for market innovations, bears risks, is growth-oriented, and is driven to maximise profit or investors' returns.”

Politis (2008) states that entrepreneurial education should focus on developing attitudes, like creativity, critical thinking and reflection among individuals. They declare that developing these attitudes will lead to the motivation and ability to develop entrepreneurial knowledge throughout someone's professional life.

Rae and Carswell (2000) agree to this, as they state that without the right attitude from students, it is hard to learn entrepreneurship. They mention that personal motivation and goal-setting appeared to be very important in the development of entrepreneurial capabilities. It is important to be driven by specific values and a clear, ambitious goal. Besides this, it is fundamental to have the confidence and self-belief to achieve this goal and use different resources and active learning to achieve this.

Taatila (2010) describes that entrepreneurs need to have a significant tolerance towards ambiguity, and need to be good at dealing with uncertainty and change because they often work in unpredictable situations. They have to make decisions based on new information from different sources, which can sometimes be conflicting. They have to be willing to take risks and see opportunities where others might see problems.

Asdani & Kusmintarti (2014) agree to this. They argue that an entrepreneur needs to own certain attitudes, which are internal locus of control, need for achievement, propensity to risk, creativity, social networking and tolerance for ambiguity.

Conclusion

Within entrepreneurial education, it is not only important to learn theory about entrepreneurship, but also to work on developing these entrepreneurial attitudes. Creativity is one skill that is described as crucial to have. Besides this, researchers agree upon several other attitudes that are important to own as an entrepreneur, ranging from a tolerance for



ambiguity towards a willingness to take risks.

Entrepreneurial education approach

There are many different types of approaches discussed within literature to teach the entrepreneurial skills and attitudes discussed in the previous section. There is also no clear definition of what entrepreneurial education is.

The experiential learning approach, designed by Kolb (1984) is the model which is most often referred back to by entrepreneurial researchers. In this approach, students iteratively go through a process consisting out of four stages, which can be defined as: experiencing, reflecting, thinking and acting (Figure 8). Holcomb et al. (2009) describe that entrepreneurial learning should be about learning from direct experiences and from observing behaviours, actions and consequences of others. They should use these insights to figure out solutions to problems in uncertain situations, and organize their learnings by connecting this to what they already know.

Kolb's learning model is focussed on gaining knowledge through experiences, and reflecting and reacting on these experiences. The process starts with engaging in a new experience, after which the student reflects on this experience and reacts through conceptualising and adjusting it towards their own context. Then, they use these insights to set up a new experiment, and actively experience this again.

The goal of Kolb's model is learning through experiences and experimentation. To gain knowledge, it is important to also reflect on these experiences and use these insights to improve and adjust the project context. Students gain knowledge through acting (working on projects) and reflecting (being aware of the process) (Arpianen et al., 2017). Within this process, failure is an important part of learning (Taasila, 2010). Going through this dynamic learning process enables students to express entrepreneurial behaviour, and improves their confidence and self-belief, and thus develop entrepreneurial skills and attitudes.

In their work, Neck and Greene (2011) connect the experiential learning model to design. They explain that teaching entrepreneurship from a design perspective can assist students in recognizing

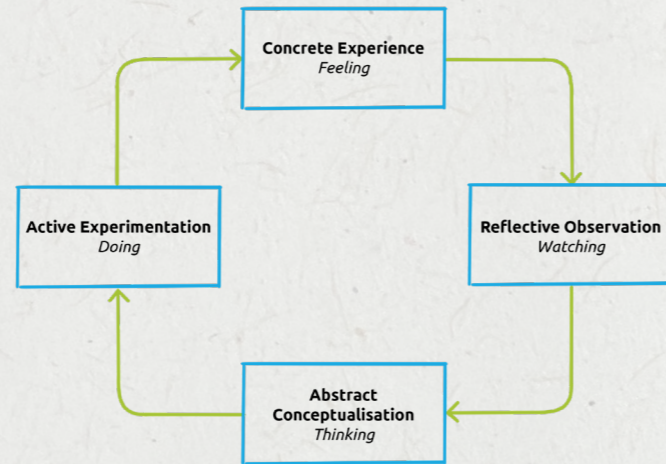


Figure 8: Kolb's experiential learning model

and pursuing distinctive business prospects. This approach involves utilizing design techniques such as observation, fieldwork, and gaining an understanding of the values held by various stakeholder groups.

Conclusion

No definite answer can be given to answer the question on what approach is needed to teach entrepreneurship, but most researcher agree that it is important to experience and experiment within entrepreneurial education to gain knowledge and train entrepreneurial attitudes. These experiences can be direct, or through observation and fieldwork. To gain valuable knowledge from these experiences, it is important to reflect on your learnings and adapt your path when experiencing failure. Students need the freedom to follow this path and teachers should guide them through this process by giving them space.

Analysis

The gathered data retrieved by answering both research questions about entrepreneurial education is analysed, coded and clustered. A simplified version of the clustered insights is shown in Figure 9. The full analysis can be found in Appendix E.

Through this analysis, several needs are found that are required for teaching entrepreneurship. This will be further analysed in section 3.1.

Risk-taking

Most entrepreneurs would not characterize themselves as risk-takers; rather, they evaluate risk differently because of a combination of their knowledge, experience and high self-efficacy. Entrepreneurs also seem to give greater weight to the risk of "missing the boat" (i.e., missing an opportunity and the potential benefits it could produce) than the risk of "sinking the boat" (i.e., failing and its consequences)—as suggested by Brown & Cornwall (2000), who also point out that this behavior is counter to the incentives currently in place in most educational institutions.

willingness and a capability to take risks is related to the identification of entrepreneurial opportunity, i.e. entrepreneurs see opportunities where other people see risks.

Entrepreneurial characteristics is a combination of some characteristics that should be owned by an entrepreneur. These are internal locus of control, need for achievement, propensity to risk, creativity, social networking and tolerance for ambiguity.

Taasila, 2010

Kusmintarti et al., 2014

Wickham (2006) stated that entrepreneurs are creative, seek and discover niches for market innovations, bear risks, are growth-oriented, and are driven to maximise profit or investors' returns.

Wickham, 2006

Borasi & Finnigan, 2010



Figure 9: Clustering of data entrepreneurial education

2.1.3. Creative education

Besides understanding the current field of entrepreneurial education, it is also important to understand how creativity is taught, and what creativity actually signifies. Within section 1.1.2., the concept of creative confidence is introduced, stating that everyone is creative, but to express this creative behaviour one needs to have the creative confidence that they are able to execute a creative task (Kelley & Kelley, 2014).

To understand what is needed to get here, three sub-questions are generated.

- What attitudes do you need to be creative?
- What is needed to gain creative confidence?
- Which approach is needed to teach creativity?

Creative attitudes

Over several hundreds of years, the definition of creativity has been evaluated and rethought. Kamylyis & Valtanen (2010) analysed 42 definitions of creativity. They came to the conclusion that most of these definitions intersected at four key components. These are:

1. Creativity is a key ability of individual(s)
2. Creativity presumes an intentional activity (process)
3. The creative process occurs in a specific context (environment)
4. The creative process entails the generation of product(s) (tangible or intangible). Creative product(s) must be novel (original, unconventional) and appropriate (valuable, useful) to some extent, at least for the creative individual(s).

To be creative, someone has to be open to develop their creative attitudes. According to Kelley & Kelley (2014), creative people tend to redefine problems in new ways in order to seek solutions, take sensible risks and accept failure as part of the innovation process and confront the obstacles that arise when challenging the status quo. Besides this, they have to tolerate ambiguity when they are not certain that they are on the right path and continue to grow intellectually rather than let their skills or knowledge stagnate.

Davis (2011) describes that it is important to develop an open mindset towards creativity. There are many attitudes that define a creative, like curious, open-minded and intuitive, but some attitudes also depend on the creative themselves, like the need for alone time and being energetic. Gregerson et al. (2013) agree to these attitudes, and mention that among other things a sense of humour, risk-taking and attraction to complexity are attitudes that are important to have as a creative.

But to get here, you first need to take the first step towards behaving creatively, which is having belief in your creative abilities (Mathisen & Bronnick, 2009). According to Kelley & Kelley (2014), believing in your creativity lies at the heart of innovation. Creative confidence is about believing in your ability to create change, it is the conviction that you can achieve what you set out to do.

Conclusion

There are several attitudes important to own as someone who is creative, like curiosity and being open minded. It is important to develop these attitudes and to have a positive attitude towards creativity, to become creative. But, to get started with creative behaviour, it is first important to have the confidence to succeed in a creative task. The topic of creative confidence is further explored in the next section.

Creative confidence

Creative confidence is a part of our creative self-beliefs (Figure 10). Creative self-beliefs are considered malleable and can be influenced by internal and external influences (Karwowski et al., 2019). Your creative confidence is dependent on your past experiences, behaviours and attitudes towards creativity. It is defined as:

"The beliefs in one's ability to think or act creatively in and across particular performance domains."
(Karwowski et al., 2019)

By practicing and experiencing with creativity and creative attitudes, you can gain creative confidence. But, this confidence is highly dependent on one's belief in their ability to creatively perform in a specific setting in the future. This is called creative self-efficacy.

Creative self-efficacy can be improved through training (Mathisen & Bronnick, 2009; Kelley & Kelley, 2014). Bandura (1997) describes this as the principle of guided mastery. Through a step-by-step process with exercises with increased difficulty, the learner is guided towards a state in which self-efficacy is raised.

Kelley & Kelley (2014) describes a similar approach, by stating that doubts in one's creative abilities can be resolved by guiding people through a series of small successes. The most effective way to build confidence in your creative skills is by taking action, one step at a time. Through gradually increasing the level of challenge, individuals will transcend the fear of failure that blocks their best ideas.

Within the context of creativity, this will lead to a change in creative attitudes, which results in a behaviour change (Badasur & Badasur, 2011).

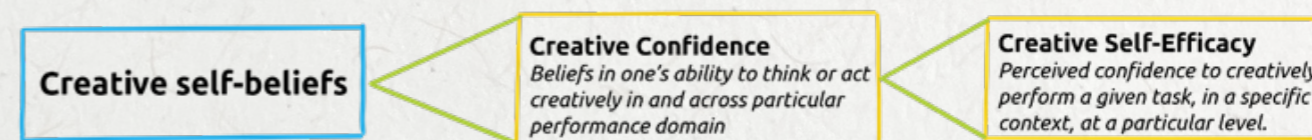


Figure 10: A simplified version of the creative self-beliefs model, only focussing on creative confidence and creative self-efficacy (Karwowski et al., 2019)

Creative self-efficacy is defined as:

"The perceived confidence to creatively perform a given task, in a specific context, at a particular level."
(Karwowski et al., 2019)

Conclusion

Creative confidence is needed to express creative behaviour. The most effective way to train confidence in creative skills is by taking small steps and increasing the level of difficulty, through building self-efficacy. Within this, it is important to take action, and start doing.

Creative education approach

To enhance creativity, training is needed (Scott et al., 2004). Teaching creativity is fundamentally an issue of an attitude change, in which individuals cannot rigidly adhere to rules, but have to adopt a creativity-conscious mindset that is open, receptive, and supportive of new ideas (Davis, 2011). Creely et al. (2021) mention that creative teachers foster a positive climate for experimentation, encourage curiosity, and model flexibility. The creativity of the teachers serves as a foundation for nurturing creativity within their students.

It is important to mention the difference between teaching creatively and teaching for creativity (Gregerson et al., 2013). Teaching creatively means making learning more interesting and effective using imaginative methods. On the other hand, teaching for creativity focuses on teaching students to have creative attitudes and shows them how to develop their creative thinking skills and behaviours (Jeffrey & Craft, 2004). Both approaches need to be implemented within education, for it to be most effective.

Jeffrey and Craft (2004) note that by creating materials and using methods that inspire students to engage in learning, creative teaching influences the extent of students' involvement over their learning journey, as well as their capacity for innovative thinking. Conversely, the notion of teaching for creativity concentrates on the belief of students in their creative potential and skills,

and on nurturing creativity through curiosity and an inclusive approach to teaching, where students are encouraged to actively participate in discovering and exploring knowledge.

In his work, Szmidt (2001) shares some important ideas for helping creativity in schools. These ideas include using humour and play in learning, focusing more on the process of being creative rather than just the final result, and making sure nothing gets in the way of creativity. Another idea is to motivate students from within, like not giving grades for creative work and letting students judge their own progress. Finally, there's the idea of facilitation, where teachers guide students by being understanding, genuine, open, confident, and by accepting each student for who they are.

Davis (2011) elaborates on this by presenting that there are several barriers within education that work against creativity, like habit, our perception of things, cultural barriers that lead to expectations in how to behave and a fear of being different. Also emotional barriers that can lead to anxiety and mental blocks. They refer to the matter of removing ten mental blocks to stimulate teaching creativity, described by Roger Von Oech in his book "A Whack on the Side of the Head" (2008). Some of the mental blocks described by Von Oech are the avoidance of ambiguity, looking for one right answer instead of accepting the possibility that multiple answers could be right, and thinking of things as they are and not as how they could be.

Conclusion

To engage students in creativity and motivate them in their creative behaviour, both teaching for creativity and creative teaching should be considered. But, there are several needs and barriers that are holding back creativity within teaching, like only looking for one right answer and avoiding ambiguity. To implement creativity within a lesson, it is important to be aware of these barriers and needs.

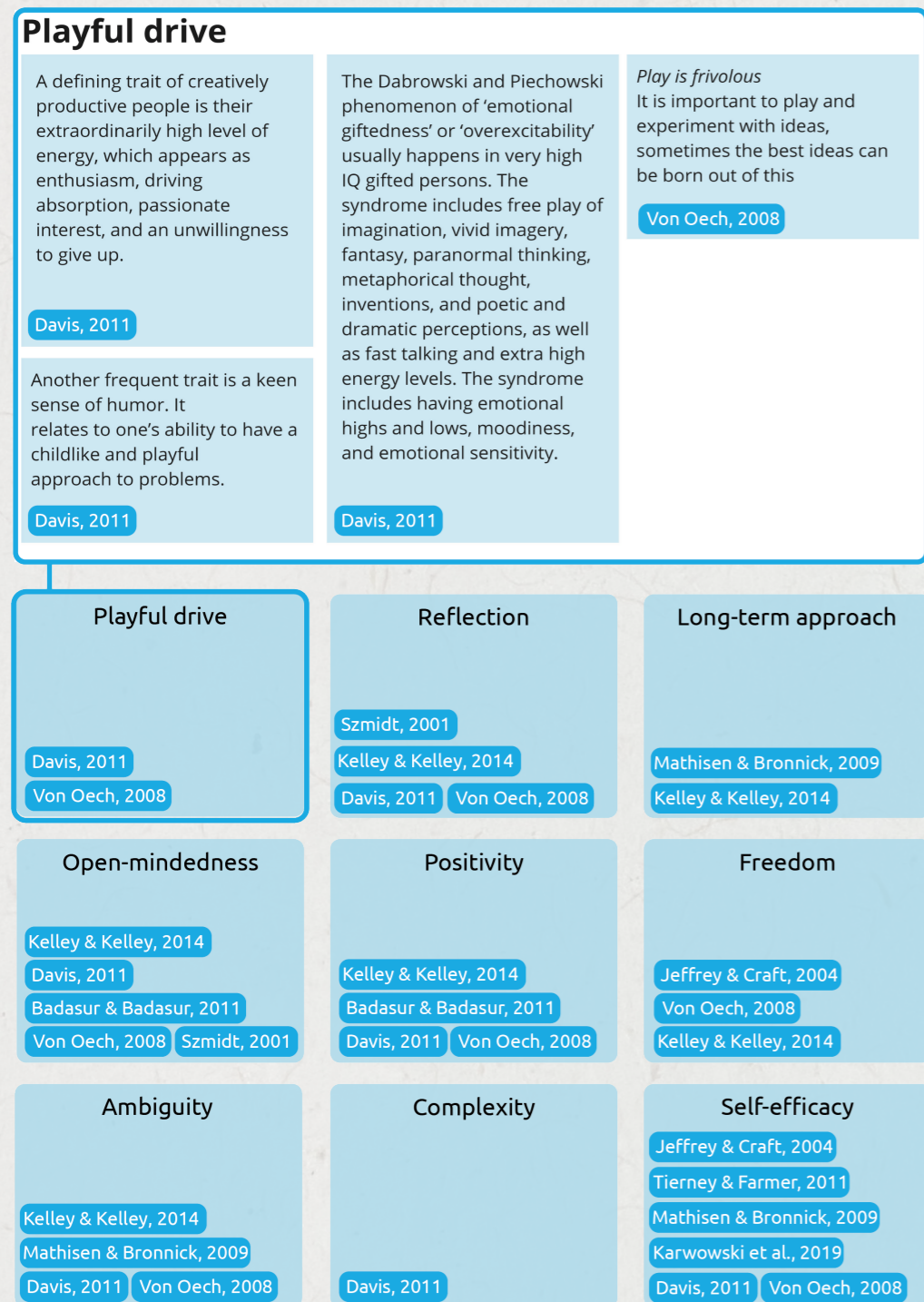


Figure 11: Clustering of data creative education

Analysis

The gathered data retrieved by answering the research questions is analysed, coded and clustered. A simplified version of the clustered insights is shown in Figure 11. The full analysis can be found in Appendix E. Through this analysis, several needs are found that are required for creative teaching. This will be further analysed in section 3.1.

Key take-aways

- It is important to focus on the development of attitudes, through giving students freedom to try out new things, experiment and be involved in experiences.
- There are entrepreneurial and creative attitudes that overlap with each other: like risk-taking, critical thinking and openness to ambiguity.
- Learning is done within the process instead of by judging the end result, through reflection and by learning from mistakes.
- Within entrepreneurship, it is important to have a vision, which can motivate students to be involved and achieve their goals. It is also valuable to have confidence in your actions.
- Within creativity, it is important to have confidence in your capabilities to execute a creative task. This can be trained through active practice.

2.2 Explore

This chapter explores the current situation within the schools that use the GoFuture platform. To find out if the assumptions described in the initial problem framework (section 1.1.3.) are correct, in-class observations, a questionnaire and education interviews were executed. Besides this, two co-creation sessions were performed to get in depth insights in the perspective of the educators and to get a better understanding of the needs they have for implementing creativity within their classes.

Research questions

1. *What is the current impact of GoFuture on the development of 21st century skills, specifically creativity?*
2. *What is the current knowledge of students towards creativity and how do they currently approach creative tasks?*
3. *How do educators currently coach their students and how can they be supported in fostering creativity within the classroom?*

Methods & Activities

Interviews

Eight interviews with both experts and teachers have been performed, to get a better understanding of how they work with GoFuture and what their needs are towards creativity.

Observations

Four in-class observations were performed to get a real-life understanding of how the teachers and students work with GoFuture and what their needs are.

Questionnaire

A questionnaire is performed within a class of thirteen students to start the conversation about students' knowledge about creativity.

Co-creation

Two co-creation sessions with six participants are executed to dive deeper into the knowledge of the teachers and their attitudes towards creativity.

Literature research

Complementary literature research was executed to substantiate the statements.



2.2.1. Research set-up

To give an answer to the research questions, several different methods have been used collectively. The research setup of each activity is shortly explained below.

Interviews with experts

To get acknowledged with the context of the project, exploratory interviews were conducted with two experts in the field of education and entrepreneurship. The first expert is specialised in teaching about entrepreneurial education towards teachers. The second expert is specialised in research in entrepreneurial education, specifically focussed on gamification and the use of educational escape rooms. The interviews were semi-structured and the insights were recorded through note taking. The gathered information is not used in the data analysis. The semi-structured interview guides and the recorded notes can be found in Appendix F.

Observations

The observations were arranged in 4 different classes with different levels of education. The three first observations were carried out in classes that were at that moment working with the GoFuture platform. Three lessons of one hour were observed, and throughout the class, students were asked to answer some questions related to the platform, in the form of semi-structured interviews. The goal of the observations was to get an understanding of the current lessons of GoFuture, how the platform is used and how students and teachers experience these lessons. To record the insights, notes were taken during the observations and semi-structured interviews.

For the fourth observation, a slight different approach was employed. This class did not use the GoFuture platform at that time, but the class was being prepared the lessons of GoFuture with some initial classes, that tapped in on developing 21st century skills and creative confidence. The teacher had experience with this approach and could be described as creatively confident. One lesson of two hours was observed, and throughout the class, students were asked to answer some questions related to creativity and their creative attitudes. To record the insights, notes were taken during the

observations and semi-structured interviews. The observation forms and semi-structured interview guides can be found in Appendix G, together with the recorded notes.

Interviews with teachers GoFuture

After the observed classes, semi-structured interviews were conducted with the four teachers of the classes to get a deeper understanding of how the teachers use GoFuture and how they see the goals of GoFuture, specifically creativity, coming back in the platform. These interviews lasted between 20 minutes and 1 hour. Insights were recorded through note taking. The semi-structured interview guides and the recorded notes can be found in Appendix F.

Interviews with creative teachers

Two additional education interviews with creative educators were conducted to understand the educational context from different perspectives outside of GoFuture. The interviewees are both experienced with setting up creative lessons and questions that were asked were framed around how they perceive the creative attitude of their students and colleagues and how they cope with this. The interviews lasted 1 hour. Insights were recorded through note taking. The semi-structured interview guides and the recorded notes can be found in Appendix F.

Questionnaire

During the fourth observation, a questionnaire was conducted with the students within the class (n=13). Besides this, the questionnaire was used to initiate the conversation about creativity in class during the observation session. The questionnaire was based on the scale items created by Karwowski et al. (2013). A 5-point Likert scale was used. The questions were translated into Dutch, and difficult words were simplified to make the questionnaire more suitable for the research group. Besides this, two open ended self-generated questions were added, to get an understanding of the students' knowledge about the topic of creativity. More elaboration on the scale items and the results can be found in Appendix H.



Co-creation

Two co-creation sessions were executed, one with 3 teachers of VMBO education, and one with 2 teachers of MBO and the client. The sessions were based upon the question: *"How could GoFuture support teachers with using creativity in their classes?"*. The sessions were also meant to dive deeper into the knowledge of the teachers and their attitudes towards creativity. Different activities, derived from methods like context mapping and creative facilitation were used. Examples are mind mapping, clustering and customer journey mapping. Insights were collected through picture taking, the generated material, and note taking during and after the sessions. The complete plan and the insights can be found in Appendix I.

2.2.2. The current situation

The actions above were executed to answer the following research questions about the current situation. Complementary literature research was executed to substantiate the statements.

- What is the current impact of GoFuture on the development of 21st century skills, specifically creativity?
- What is the current knowledge of students towards creativity and how do they currently approach creative tasks?
- How do educators currently coach their students and how can they be supported in fostering creativity within the classroom?

Current impact of GoFuture

When the teachers are asked about the platform, they mention that they like the approach of GoFuture, which entails the e-learning platform that contains video's, toolboxes and exercises, but they do not appreciate the current platform design. Teachers struggle to use the platform, and also mention that it is difficult to use for their students. Most of the teachers follow the platform step by step, and prepare a traditional lesson around this. This means: five to ten minutes of

introduction, then working on the assignments on the platform. One teacher explained that they used the platform more as 'vending wall' – they grabbed some of the assignments and build a lesson around it. The teachers are excited about the goals of implementing 21st century skills in GoFuture, but currently do not see this coming back very vividly. They mention that the assignments are currently still mostly theoretical, and that it would be more inviting for creativity if some assignments could be more practical and active. This statement is supported by Shook et al. (2003), who mention that entrepreneurship is about entrepreneurial individuals interacting with their environment, and thus discovering, evaluating and exploiting opportunities, and this is thus also important to implement within entrepreneurial education.

"I think the classes are still quite theoretical, and GoFuture does not provide a lot to make it more practical, which is the goal of GoFuture I believe. To prepare this, I need time and I do not have that."
teacher HAVO

"Currently, teaching methods are 80% focussed on theory and 20% practice, that should be the other way around if it is up to me."
teacher VMBO

The students all think the topics that are discussed within GoFuture are interesting and important for their development. But, they also say that the assignments are framed too much, which makes them easy to fill in and uninspiring. They mention that there is too much text within the assignments, making them demotivated. The students finish their assignments quickly and do not take the time to explore the questions in depth. They do not take the time to reflect on their work and to adapt their work afterwards. Tofade (2013) states that using a wider variety in types of questions can help students better remember important information and also require them to analyse, evaluate, and create new ideas. By paying more attention to how students think and feel and by asking questions clearly and in the right order, a safe and engaging learning environment can be created. Questions are powerful tools for teaching, and using the best practices can greatly improve the quality of education.

"I like it that you learn about your personal strengths. It gives me confidence to think about this and reflect on this."
student MBO

"I do think the assignments are quite okay, but it is mostly filling in things, so that is not very inspirational"
student HAVO

Conclusion

Both teachers and students currently struggle with the use of the platform. The platform does not provide enough tools for the teachers to adjust their lessons towards the development of 21st century skills. Students claim that the assignments are too framed to be challenged and encouraged to explore the questions in depth and use their creativity.

Knowledge of students about creativity

It appeared to be very difficult for the teachers to activate the students and get them motivated when they had to do an assignment behind their laptop. When they got stuck, they did not take the initiative to solve the problem, but waited for the teacher to assist. They all appeared to be low in energy, but after a while they would all start working. Most students did not put a lot of effort in the assignments that were assigned. In the conversation with the teachers, this often seemed to be a problem. They all said that students are way more involved when they are allowed to do something practical. But, one of the teachers mentioned that they just did not have the time to prepare an interactive and practical lesson every week.

"When a student is stuck, they just stop and wait for help. If I were them, I would just look it up online on google. But they do not think like that."
teacher MBO

The students that did have a practical and creative assignment for that day, were way more involved and did not want to stop at the end of the class. They were encouraged to use their own way of working – some stayed behind their laptop, but some also started drawing and writing on paper. The classes that were divided in groups were also more motivated, they were distracting each

other less, and focussed more on their own group. Arpiainen and Kurczewska (2017) describe that team work can also support handling uncertainty within students and team projects result in more effective learning.

Students working on a creative assignment had difficulties with getting started. They appeared to be result oriented and hold back by the idea of their work being graded. When the teacher explained that they would be graded on their commitment and not the end result, they changed their mindset and started working. But, a push by the teacher was definitely needed, and some of the students appeared to be insecure about the results they presented.

"It is important to give them (students) a little push, but also to let them free and experiment"
teacher VMBO

"Teacher, is it correct like this?"
student VMBO

Students appear to have some knowledge about the topic of creativity and gave varied answers to the questions about what creativity entails and why it is needed within entrepreneurship. They all see the importance of being creative as an entrepreneur, but differ in describing themselves as creative.

"When I think about creativity, I think about someone who is good at drawing."
student HAVO

"It is definitely important to be creative as an entrepreneur. Some friends of mine have their own company and they say if you are creative you will get there, even if it is hard."
student MBO

"You need to have something new to become a successful entrepreneur, and for that you need to be creative"
student HAVO

A questionnaire was used to explore this issue further. The idea of the questionnaire was to find out the differences in creative confidence before and after the educational week with



GoFuture given by a creative teacher. However, due to the upcoming summer holidays, the second questionnaire was never completed by the students.

The results of the two open-ended questions were still informative and could be used to get a general idea of the students' knowledge about creativity. Students responded to the first question ("According to you, what is creativity?") with a range from more typical answers, like 'drawing', 'having many ideas' and 'designing', towards more in depth thoughts, like 'expressing your ideas', 'experimenting and creating' and 'pushing boundaries' (Figure 12). Students answered the second question ("What do you think are the three most important qualities of someone who is creative?") with many different responses, like

'thinking out of the box', 'working together/ being social' and 'having good insight' (Figure 13). These answers indicate that students have varying ideas about the meaning of creativity, and do understand the big variety of activities and behaviours that can be part of behaving creatively.

Conclusion

The main conclusion that can be derived from this is that students do have a basic understanding of creativity and they see the need of why creativity is important within entrepreneurship, but they do think it is difficult to start with creative tasks and do not know how to approach this. They would be more involved if assignments were more practical instead of theoretical and are more motivated working in groups.

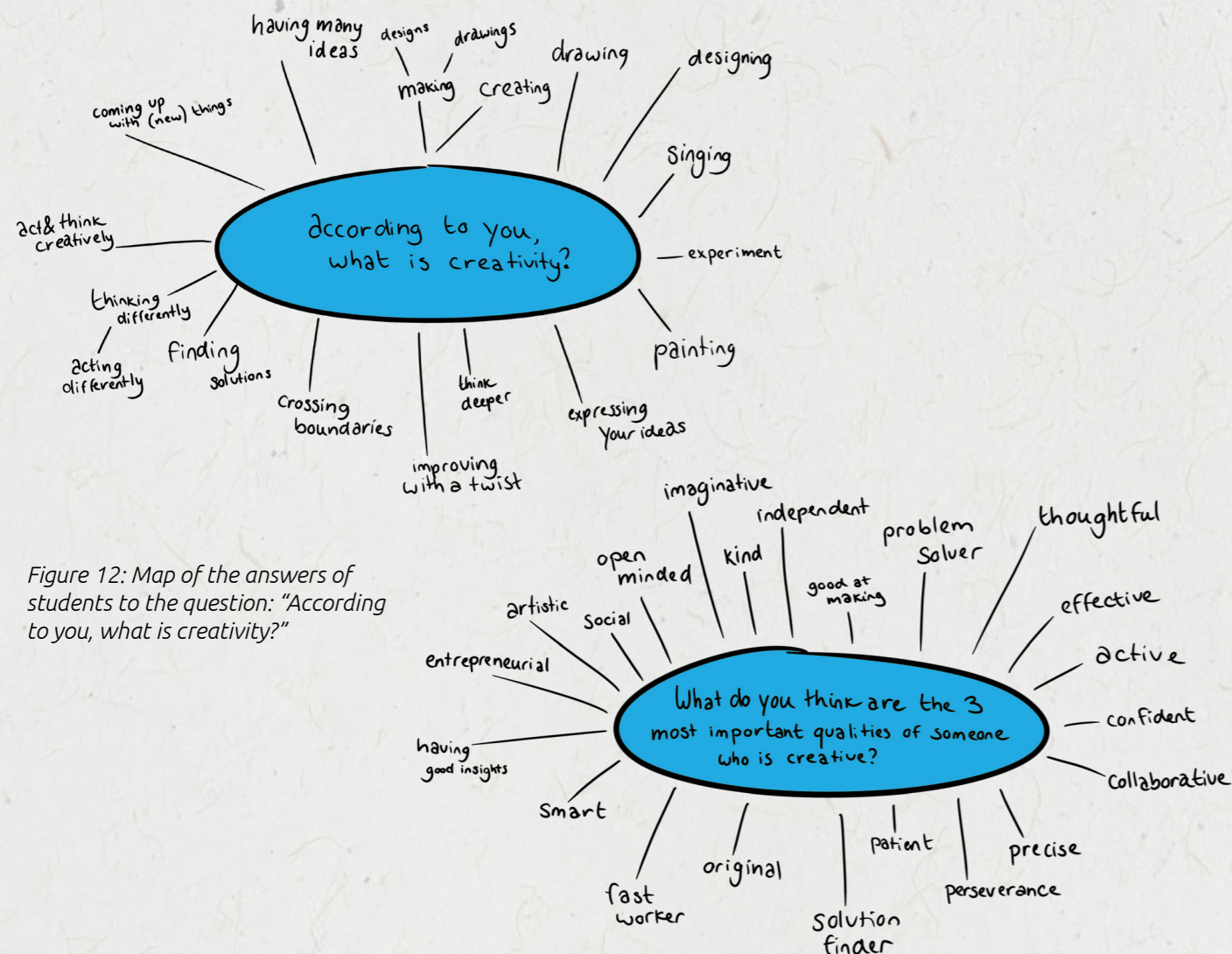


Figure 12: Map of the answers of students to the question: "According to you, what is creativity?"

Figure 13: Map of the answers of students to the question: "What do you think are the 3 most important qualities of someone who is creative?"

Creativity in the classroom

Teachers appear to have basic knowledge about creativity, and what it entails, but seem to have limited experience with implementing creativity in their classes. They make some of their classes more interactive and use different techniques to do so, but this is more of an exception than a rule for them. They do try to prepare interactive classes, and mention that they would like to implement more creativity in the classroom, but have limited knowledge in how to do this. They mention that they do not feel supported by GoFuture in creating varied and creative lessons, and need more guidance.

"GoFuture could be of help by giving more interactive assignments and less text – they (students) just do not look at the toolboxes when they have to read too much. They are very easily distracted."
teacher MBO

Within the co-creation sessions, the teachers were asked to do several activities, of which one was to define creativity based on three questions. These questions are: "Why is creativity (not) important?", "When do you use creativity?" and "What is creativity?". The questions were mapped out in a mind map, and after this, personal definitions of creativity were formed. The results are visualised in Figure 14 till 16. Pictures taken during the sessions can be found in Figure 17 till 20.

The answers to 'What is creativity?', where all quite similar, with topics like 'thinking out of the box', 'doing something different' and 'broadening your perspective'. They all agreed that creativity is important, not only in their field of education, but also in everyday situations. They see value in implementing creativity within their classes, because they see the value of thinking creatively for their students. They started with using practical

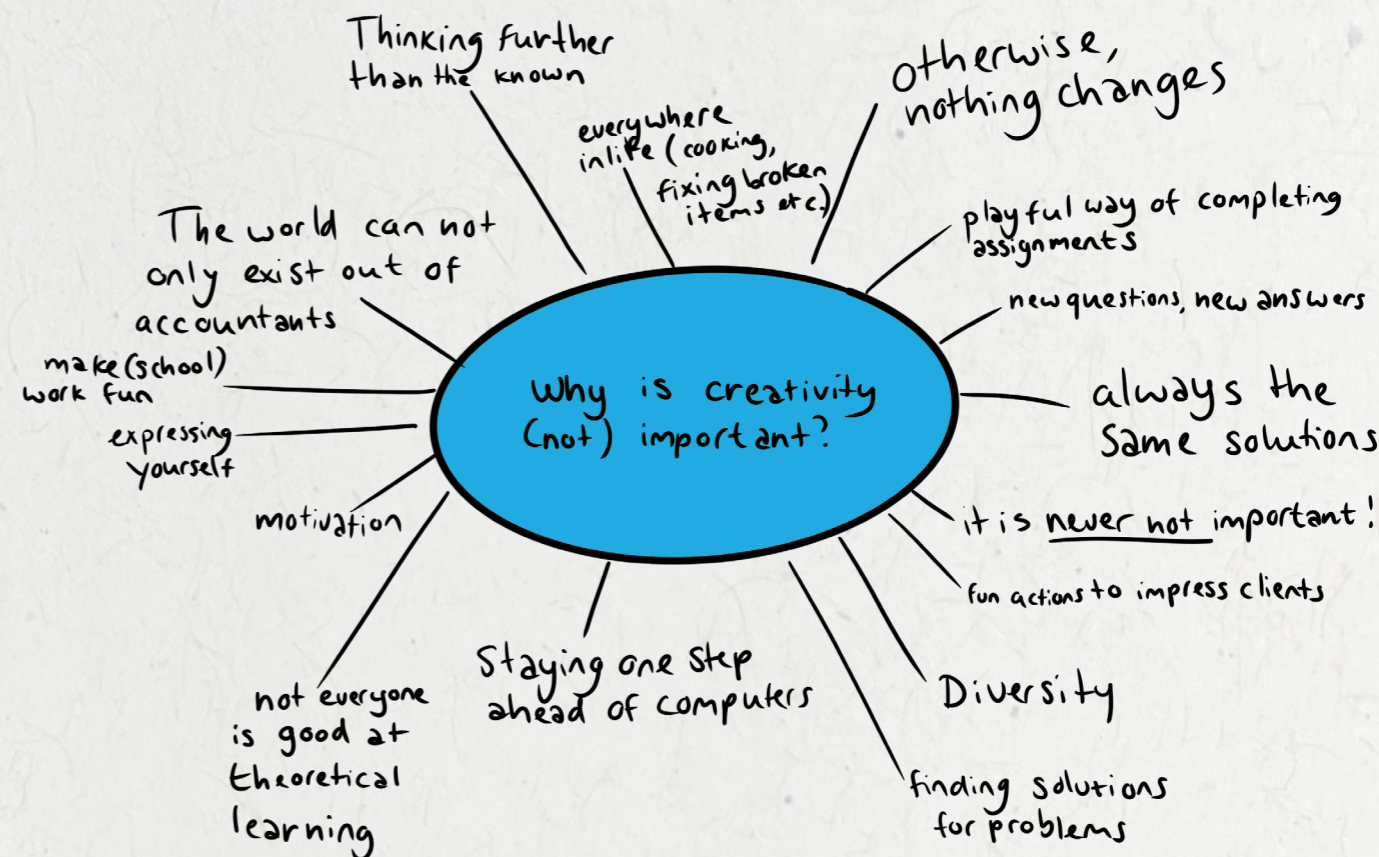


Figure 14: Mindmap of answers of the teachers on the question "Why is creativity (not) important?"



Figure 15: Mindmap of answers of the teachers on the question "When do you use creativity?"



Figure 16: Mindmap of answers of the teachers on the question "According to you, what is creativity?"

examples for describing when creativity is used, like 'making drawings when I was younger', but through discussing this with each other, created a diverse overview ranging from 'finding solutions' to 'interacting with students'.

Another activity that was executed, was creating 'journey map' of the best and the worst lesson they have given. The participants got a sensitizing kit, with icons, images, written emotions and the Premo emotion icons (Desmet, 2003). It was way easier for all the teachers to think of a lesson that went well, and they had more specific examples for this. In the lessons that did not go well, the problem was often that the teachers were not able to motivate the students, which led to frustrating situations. Examples of good lessons were lessons in which students were actively participating and involved, because the teachers prepared their lesson in a way that was engaging for the students, or in which the teacher was able to convert a less engaging topic still into an engaging lesson.

The participants mentioned that they often use creativity in preparing their lesson plan, but state that preparing a creative and interactive lesson takes too much time for them, and that they sometimes do not know how. There is a need for guidance in setting up these lessons. Besides this, they mention that they have difficulties with adapting their lesson when unexpected situations happen, for which they could use creative problem solving skills.

"It is way more fun to give an interactive and varied lesson, but this takes time to prepare and sometimes you just do not have enough time or energy"
teacher VMBO

Conclusion

Teachers do have an understanding of creativity, why it is needed and when they would apply it, and they see its importance. They would be open for more active and creative lessons, but currently struggle with finding the time to prepare this and knowing how to prepare this. They need more guidance from GoFuture in actually setting up creative lessons, for example with practical exercises and applicable tips and tricks.



Figure 17: Journey mapping during co-creation

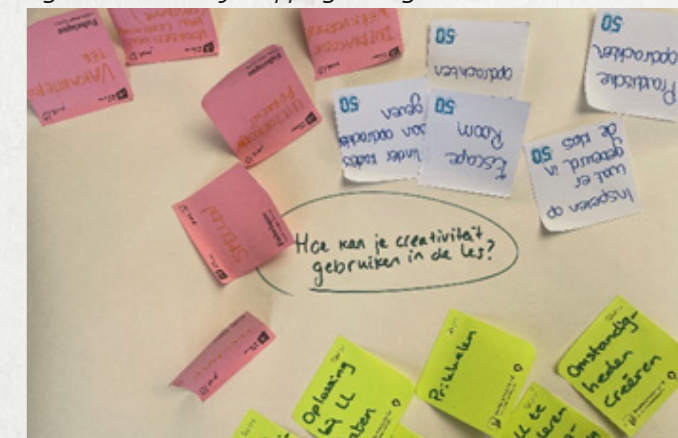


Figure 18: Purging on the question: "How could you use creativity in a lesson?" during co-creation



Figure 19: Clustering attitudes during co-creation



Figure 20: Mind mapping during co-creation



2.2.3. Additional stakeholder

Based on the gathered insights through the different research activities described above, one additional stakeholder can be detected. The influence of the Dutch education system appears to be significant on the behaviour and knowledge of the students and teachers. To gain deeper insights into this subject, a supplementary research question has been introduced, for which additional literature research has been executed.

Does the Dutch education system play a role in promoting creative confidence within GoFuture lessons and to what extent?

The influence of the Dutch education system

One of the teachers explains the importance of the balance between pushing students and letting them free. They mention that students often do not know how to start, and they need the right energy and mindset to get started. But when they are started, they need to get the freedom to try out what they want and work in their own way. They also mention that this is because school is currently not focussed on learning from mistakes, but on doing something right. There is no freedom in making mistakes and in learning from these, and this makes divergent thinking difficult. They are used to looking for the right answer, instead of answering questions that can have multiple answers that all are correct in their own way.

This fear of failure also seems to be a problem in the teachers. The teachers feel pressure by the school system and the grading system, and are afraid to try out new things of which they do not know if it works. If the teachers stay in their safe zone of knowledge, it is hard to motivate students to step out of this comfort zone. This barrier is also described in literature. Anxiety, concerns about institutional responsibilities and goals that need to be achieved and the reluctance to take risks can hold teachers back in embracing creativity (Rerke et al., 2019; Howard et al., 2018).

"School should be about learning; learning from your mistakes and having space to make mistakes. This is something that I currently do not see enough"
teacher VMBO

"I would prefer to take them outside when the class does not go as planned, but I haven't dared to try that yet."
teacher MBO

"We are living in a world where you are not allowed to make mistakes. Luckily, a change is coming."
teacher MBO

"Will we be graded for this? It has to look good in the end right?"
student VMBO

Literature states that the current education system is not prepared for the adaption towards these 21st century skills yet (Robinson, 2017). Most of the education that is given is still plenary. Education is often focused on knowledge-transfer, and after a course students are tested with an exam. Richard Martina, researcher at the Hogeschool van Amsterdam, explains within an interview that since the second industrial revolution, creative thinking is minimalized and rational thinking is maximalised within the Dutch education system. Students do not have room to make mistakes, and learn from these. They are only graded on the things they do right, and not on the development they have gone through since the start of the course. This observation is also supported by other researchers, who are saying that schools are killing creativity (Shaheen, 2010; Kaila, 2005). Ken Robinson, one of the biggest promoters and researchers of creativity within education, explains in his TED talk (2007);

"We do not grow into creativity, we grow out of it – or rather, we are educated out of it."

Crawford (2019) states that teachers might understand the value of creativity and the idea that learning involves taking risks and making mistakes. However, they often find themselves teaching in environments that prioritize getting specific results and following standardized methods. The overall culture of the school or educational context, including its priorities, attitudes, and atmosphere, greatly influences how these teachers approach the development of their teaching methods and the learning experiences of their students. Besides this, many teachers don't see themselves as creative individuals and find it difficult to break free from a mindset that limits their creative potential (Sahlberg, 2009).

Conclusion

The current focus on rational thinking makes it hard for students to experiment and be creative within the process. They are afraid of failure. Teachers see the potential of learning through experimentation and making mistakes, but they currently do not know how to shift towards this approach. They do not feel confident enough to break free and change towards a creative approach.

Analysis

The gathered data retrieved by answering the research questions is analysed, coded and clustered. A simplified version of the clustered insights is shown in Figure 21. The full analysis can be found in Appendix J. Through this analysis, several needs are found that are required for the implementation of creativity within the GoFuture platform. They are divided based on the involved stakeholders. These insights will be further analysed in section 3.1.

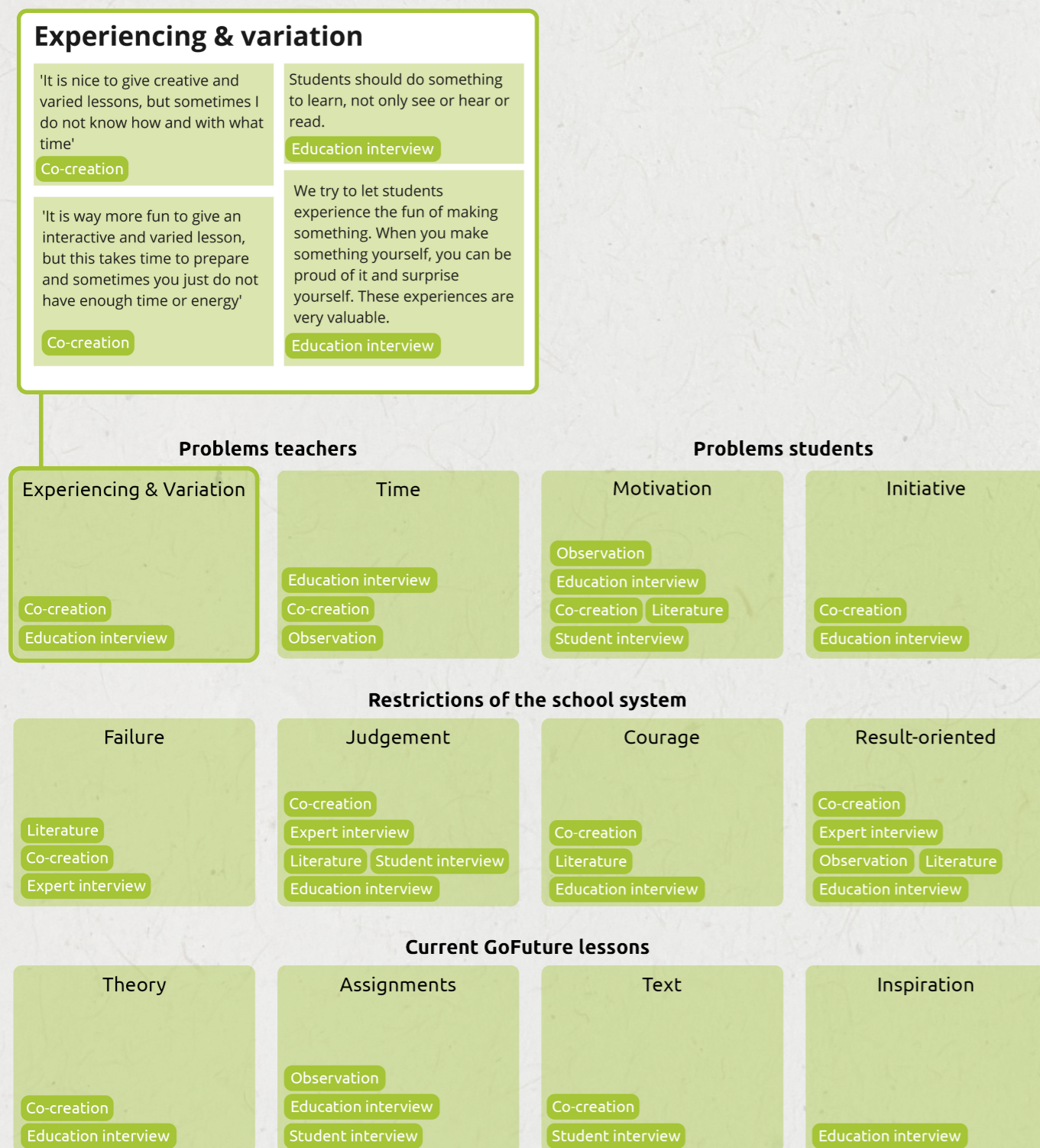
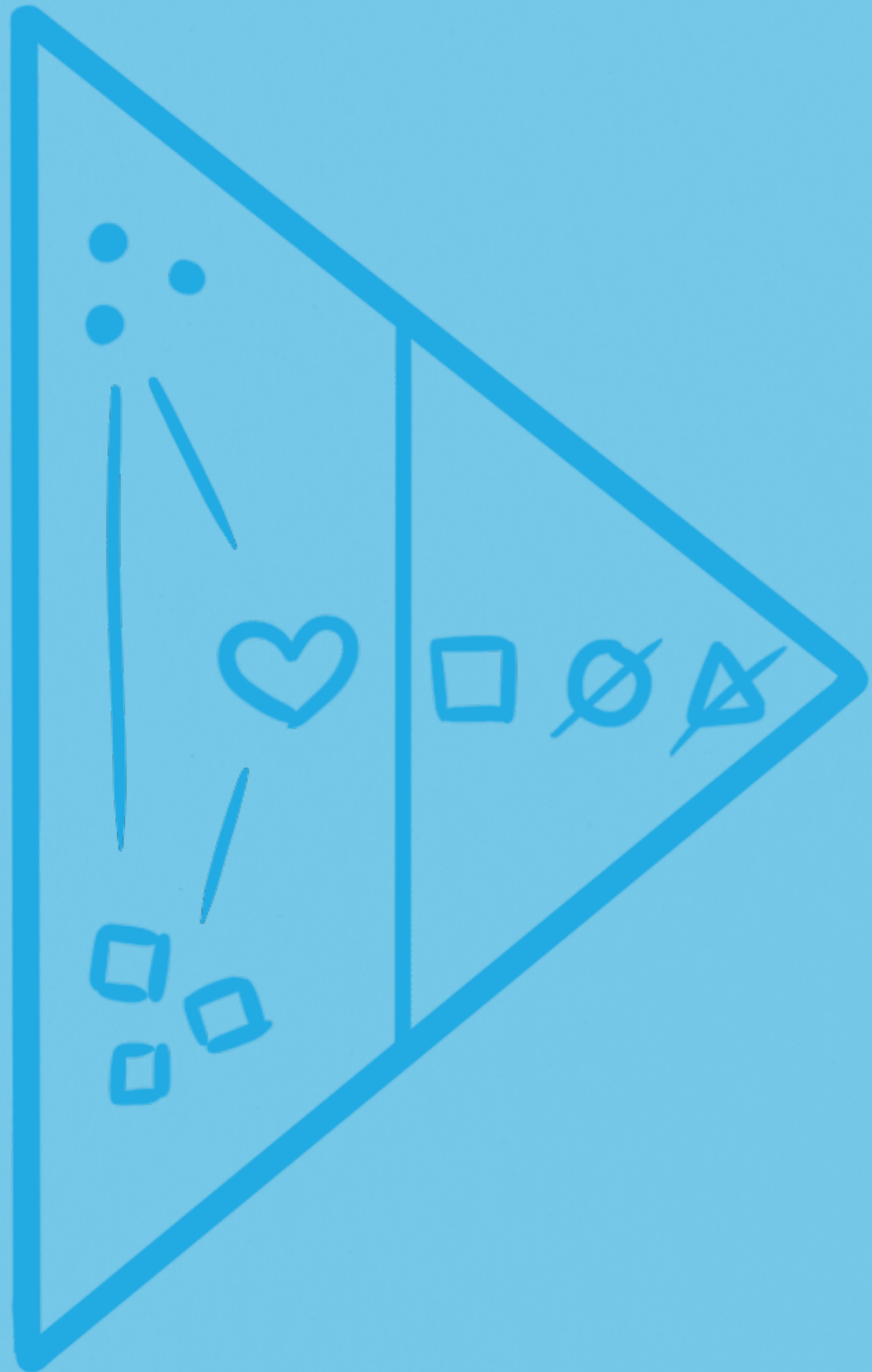


Figure 21: Clustering of data current situation

Key take-aways

- The current assignments of GoFuture are too framed and students do not feel challenged and encouraged to explore the questions in depth and use their creativity
- Teachers would be open for more active and creative lessons, but currently struggle with finding the time to prepare this and knowing how to prepare this. The platform does not provide enough tools for the teachers to adjust their lessons towards the development of 21st century skills.
- Both teachers and students agree that creativity is important within entrepreneurship and education and would like to use more creativity
- Students would be more involved if assignments were more practical instead of theoretical and are more motivated working in groups.
- The current focus on rational thinking makes it hard for students to experiment and be creative within the process. They think it is difficult to start with creative tasks and do not know how to approach this.
- Teachers see the potential of learning through experimentation and making mistakes, but they currently do not know how to shift towards this approach.



3 Define



In define, the insights gathered in chapter 2 are analysed and sorted. The insights from both literature and field research are reframed into needs, which are then connected. Three design directions are presented based on these connected needs. To evaluate the proposed design directions, a list of requirements is developed.

3.1. Reframe

- 3.1.1. Need analysis
- 3.1.2. Design directions
- 3.1.3. Paradoxes

3.2. Propose

- 3.2.1. Answering the main research question
- 3.2.2. List of requirements
- 3.2.3. Harris profile

3.1. Reframe

The insights gathered in the understanding and exploration phase, result in several paradoxes and needs. The needs that can be derived from literature and field research are mapped out and corresponding relationships are found. Based on these relationships, three design directions are presented. Besides this, several paradoxes can be found, that need to be taken into account during the design phase.

Methods & Activities

Need analysis

A need analysis is performed based on the insights discussed in chapter 2.1. and 2.2.

Defining paradoxes

Four paradoxes are defined, based on the gathered data that need to be taken into account during the design phase



3.1.1. Need analysis

Within the previous two chapters, the sub-research questions have been analysed and answered. To answer the main research question (introduced on p. 16), a need analysis have been made. The needs from the educational perspective to develop entrepreneurial education in which creativity is encouraged, and the needs from the teachers and students that use the GoFuture platform are derived from the literature and field research and are mapped to find design directions that can be developed further.

The stakeholders (the GoFuture platform, the students, the teachers and the school system) all generate problems that block the creative confidence of both teachers and students. These problems were analysed and reframed into needs, divided by the needs of teachers and the needs of students.

To create entrepreneurial education in which creativity is stimulated, it is also important to implement several methods and work on developing several attitudes. These aspects were also translated into needs, divided by the needs of entrepreneurial education and creative education. These needs benefit entrepreneurial and creative learning, and are thus needed to create the right educational approach within the classroom to develop creative confidence.

After these needs were defined, an analysis of the needs was made through connecting the needs of the students and teachers to the needs within the education approaches. In this way, overlapping connections could be found that could be further explored.

An overview of the complete clustering and needs analysis can be found in Appendix K. For clarity, a simplified version is created, which can be found in Figure 22.

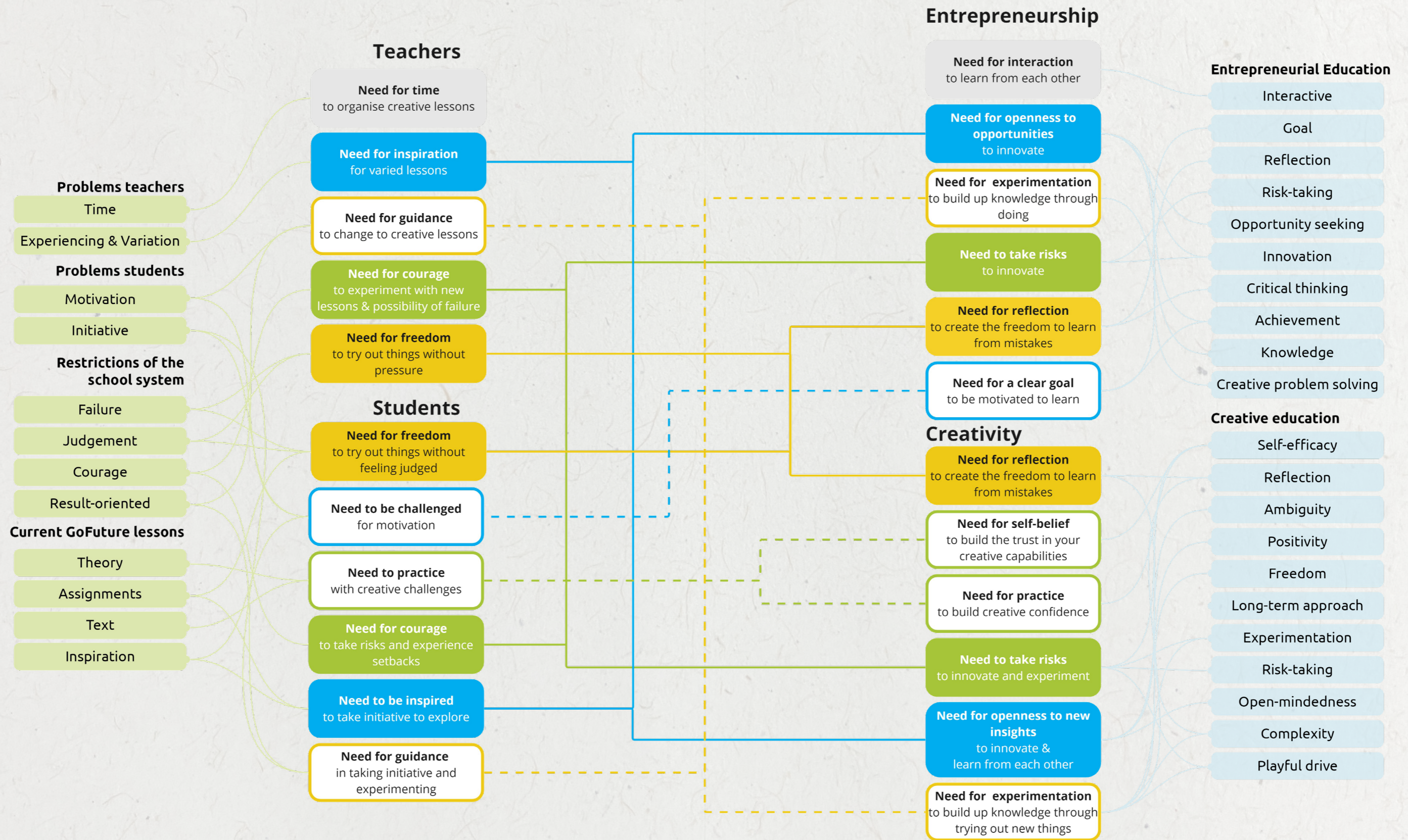


Figure 22: Mapping needs of stakeholders and education approaches

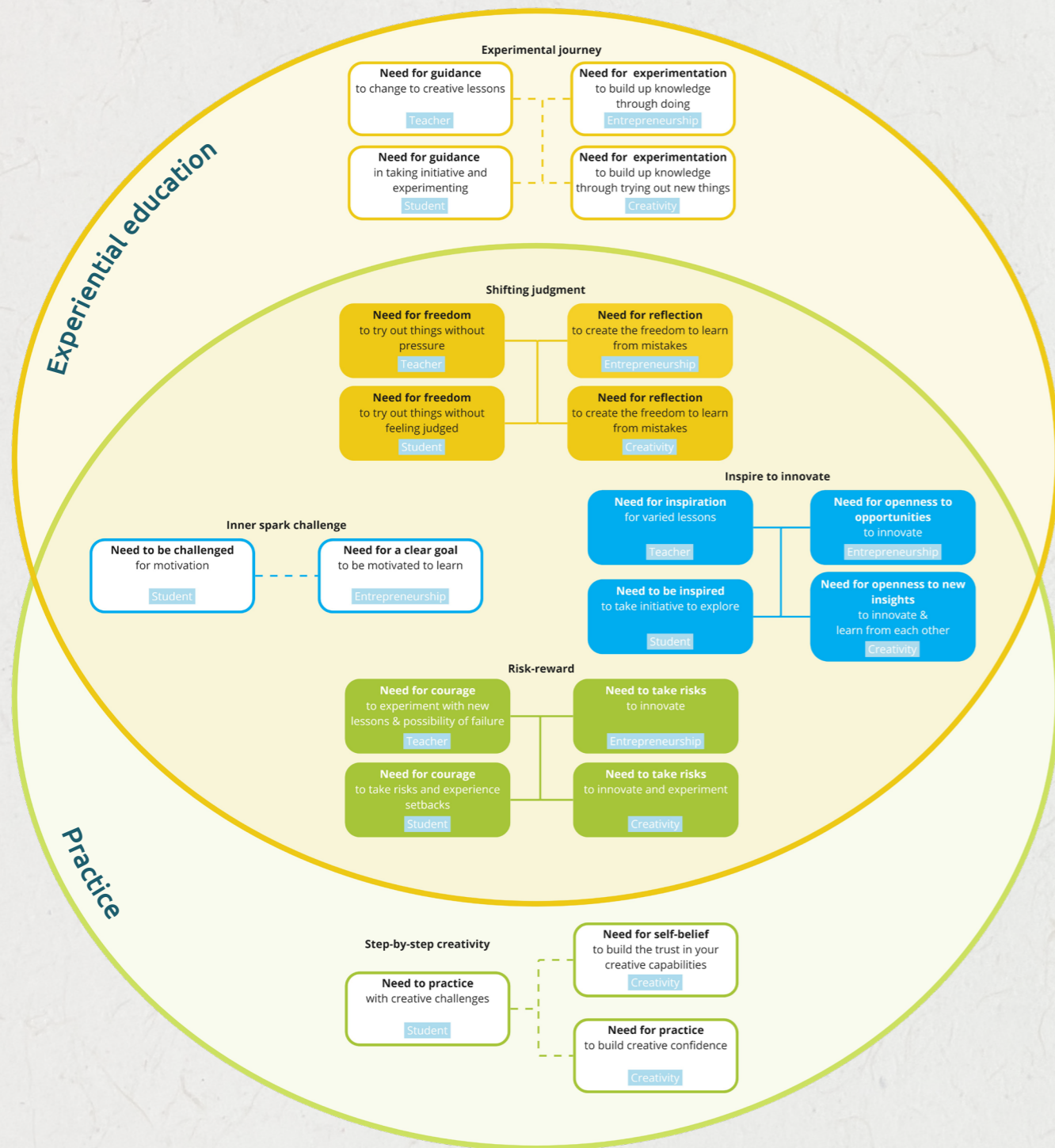


Figure 23: Connected needs in general context of experiential education and guided mastery

Connected needs

The connected needs were then evaluated, named and analysed. Some overlap was found, with two need links that were generally defining the core of the problem (Figure 23). These were ‘experimental journey’ – aimed at the need for experiential education, which entails learning through experiencing (section 2.1.2.), and ‘step-by-step creativity’ – aimed at the development of creative

confidence through a step-by step approach, in which confidence will be build up through working on increasingly difficult exercises, through practice (section 2.1.3.). The other clusters have a more specific point of view and can be used to scope the project in a more concrete way – leading towards design directions.

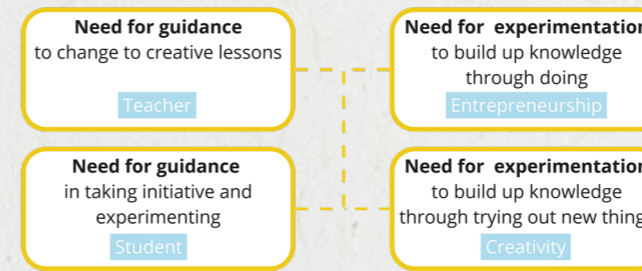


Figure 24: Experimental journey

General need links Experimental journey

This connection in needs is based upon the question from teachers and students to approach their lessons in a more explorative way, but also the need for guidance through this, because teachers have not enough experience with experimental lessons and students are not used to taking initiative and approaching assignments in this way. To train both creative and entrepreneurial attitudes, experiential learning is claimed to be an interesting approach.

This approach is still quite broad and it can be difficult to implement within the time frame of this project. A lot is needed to create this type of education, but the principles should be taken into account within the design process.



Figure 25: Step-by-step creativity

Step-by-step creativity

These connected needs are the base of creative confidence, and can be referred back to self-efficacy. It is very important to implement this within all the design directions, but it is not directly focussed on the behaviour of the teacher and does not directly influence entrepreneurial behaviour in students. It is a basic guideline that covers all other topics, and its principles need to be taken into account with whatever direction is chosen.

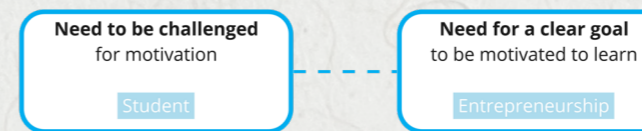


Figure 26: Inner spark challenge

Specific need links Inner spark challenge

These connected needs are based upon motivation. Students need to be challenged to be motivated, and according to research in entrepreneurship this motivation can be found through having a clear goal on which you focus.

This connection does not influence the behaviour of the teacher and does not directly influence creative behaviour in students, so this is not a valuable connection to investigate further.

Inspire to innovate

This connection in needs is focussed on an attitude change. By shifting the mindset from a negative attitude towards problems towards a positive attitude towards opportunities, both teachers and students can be inspired to take initiative and explore. By giving teachers some creative resources that pull them out of their restraint, they can be inspired and encouraged to shift towards a new way of teaching.

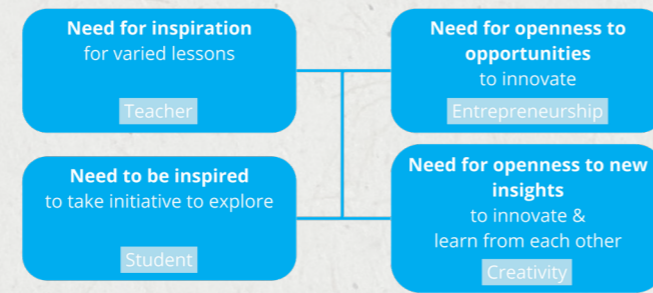


Figure 27: Inspire to innovate

Risk-reward

To create new things, experimentation is needed, and for this, you need to take risks. But, you also need to deal with the failure that comes along with taking risks and get the freedom to do so. Changing this attitude is both important for teachers, to try out new exercises and approaches to reach creativity in their lessons and for students, to move from the imagination phase to actually doing something, and actually being creative.

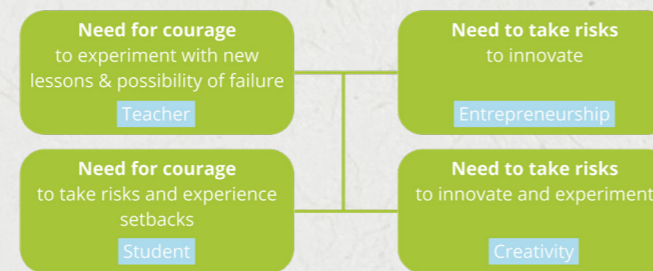


Figure 28: Risk-reward

Shifting judgment

To gain freedom to experiment, it is important to not feel the judgment of the education system, for both teachers and students. Through shifting the mindset from result-based learning towards experimentation and reflection based learning, freedom for both teachers and students is created.

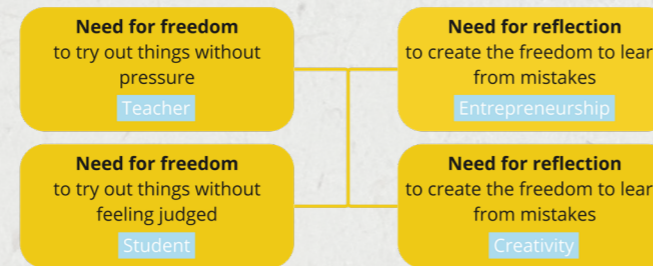


Figure 29: Shifting judgment

Conclusion

To scope the project towards a clear direction, the insights from the research have been analysed and clustered in connecting needs. Two of these connections are describing the general context of the problem, these will be used for the creation of design requirements (section 3.2.2.). The three connected needs that are scoped towards a specific direction and involve all aspects of the research are further developed into design directions in the next section.

3.1.2. Design directions

The three specific need links from the previous section that have the most potential to further explore are 'inspire to innovate', 'risk-reward' and 'shifting judgment'. These are translated into three design directions that are described more in depth on the following page.

Inspire to innovate

Developing a method that inspires teachers and students to be open and positive.

There are a lot of barriers that hold back students and teachers in developing creative confidence. One of these barriers is that they simply do not know how. Teachers do not know how to approach a creative lesson and need inspiration to get started. Students need to be motivated to get started with creative exercises. They both need to develop an attitude in which they are open for opportunities and new experiences. By implementing exercises within the GoFuture platform that stimulate this behaviour, the first step towards a creative mindset has been initiated.



Figure 30: Inspire to innovate

Risk-reward

Developing a method that challenges both educators and students to take risks & evaluate.

In both creativity and entrepreneurship, risk-taking is an important attitude to develop. Practicing with taking risks for both students and educators creates a positive and creative environment. Teachers are currently stuck in the things they know, and need to step out of their comfort zone to develop their own creative confidence, and to inspire students to do the same. But, together with risks, comes the possibility of failure. The school system and GoFuture platform are currently not developed to deal with this failure and learn from this. But not being afraid to fail can generate more confidence in executing new tasks and experimenting with creative issues. Besides encouraging risk-taking behaviour, it is also important to practice with failure and learning from failure.



Figure 31: Risk-reward

Shifting judgment

Developing a different method for student evaluation.

Students feel pressure by the traditional grading system, and are focussed on working towards their grade and end result. This does not give them the freedom to be creative with assignments, experiment and make mistakes. But to create space for this, the way of grading needs to be adjusted. Teachers are used to the current way of grading



Figure 32: Shifting judgment

and do not know how to grade their students otherwise. GoFuture currently uses reflection methods to improve this, besides the regular way of grading. These reflection methods are currently not developed well enough for students and teachers to get the guidance they need. These reflection moments have to be improved, and a method in which students are graded on their commitment and development of relevant skills would need to be implemented instead of regular grading, to make students more motivated to invest in their process instead of end result only.

3.1.3. Paradoxes

The research offered some insights that need to be taken into consideration, but that are conflicting with each other. These paradoxes are discussed shortly below, and need to be kept in mind during the design phase.

Teachers' willingness to try new things vs. lack of time

According to the field research, teachers are willing to try out new things within their classes to develop creativity, but also mention that they do not have the time to prepare their lessons extensively. The information that needs to be conveyed to the teachers, has to be conveyed in a way that is fast and easy; or should be conveyed in a way teachers want to invest their time in.

The needed freedom vs. lack of support of the schools

Freedom is needed to be creative and experiment. But, schools do currently not provide this space, for both students and teachers. GoFuture can have some effect on the mindset that is created within the classroom, but not on the mindset within the school, for example within their demands for grading. If the school is not on board with the approach, there is no space for students and teachers to even try to be creative.

Becoming creatively confident vs. learning the basics

It is one thing to know how to become creative confident, but it takes time and effort to really become creatively confident. GoFuture can provide the basic practice within the classes of 1-2 hours a week, but students and teachers need to also put in effort outside of the classes, for it to really be effective.

Creative exploration vs. online learning

Creativity demands freedom to explore by using different techniques. Creativity flourishes in thinking 'out-of-the-box', but with a computer system input is often limited. To make engaging, creative assignments, it can sometimes be enriching to physically create something without boundaries or restrictions. The current GoFuture platform provides limited freedom to explore this.

Conclusion

During the ideation and concept development phase, these paradoxes need to be taken into account during the decision making processes. The paradoxes will be used in the development of design requirements (section 3.2.2.).

Key take-aways

- From the research, several needs from students, teachers and the education approaches could be found, which were translated in three design directions
- During the design phase, the need for an experiential and step-by-step learning approach have to be considered, by implementing these within the design requirements
- During the design phase, four paradoxes have to be considered, by implementing these within the design requirements.

3.2. Propose

This chapter evaluates the proposed design directions. First, the main research question is answered based on the gathered data discussed in the previous chapters. Then, a list of design requirements is introduced, based on the paradoxes (section 3.1.3.), overlapping needs (section 3.1.2.) and expectations of the client. The list of requirements is then used to pick the most promising design direction, by making use of a Harris profile.

Research question

1. *How can the GoFuture platform facilitate the development of creative confidence in both educators and students, with the goal of fostering creative behaviour?*

Methods & Activities

List of requirements

A list of requirements is created to evaluate the design directions. The list can also be used to evaluate the concept within the ideation phase.

Harris profile

A Harris profile was used to evaluate the design directions and choose the most promising one.



3.2.1. Answering the main research question

Based on the research in chapter 2 and analysis in chapter 3.1, several conclusions can be drawn to answer the main research question proposed in section 1.1.4. The research question is repeated below:

How can the GoFuture platform facilitate the development of creative confidence in both educators and students, with the goal of fostering creative behaviour?

To develop creative confidence in educators and students, several things are needed. It is first important to understand the context and needs for developing creative confidence.

To become an entrepreneur, it is important to be creative, for staying relevant and innovate, solve problems and adapt to changing situations (Wickham, 2006). But to act creatively, creative confidence is needed (Kelley & Kelley, 2014). In the context of entrepreneurial education, this is both needed for the educators and the students.

To implement creativity within entrepreneurial education, teachers and students need to have an open mindset, which entails being open for new insights, opportunities and ideas. Besides this, they need to take risks to innovate. To create the freedom to act like this, it is important to create space to reflect on failures and learn from mistakes. Besides this, there is a need for experimentation, by building up knowledge through doing.

The teachers need guidance in developing creative lessons and to become inspired. Besides this, they need the freedom to try out new things without pressure, and the courage to experiment with this, leading to possible failure.

Students also need freedom, but freedom to act creatively and try out things without feeling judged. They need the courage to take risks and experience setbacks, and guidance in how to do so. Finally, they need to be challenged and inspired, to take initiative and become motivated. For this, they need practice, by developing their creative confidence through engaging in creative challenges.

GoFuture can facilitate the development of creative confidence by providing a solution to these discussed needs. But, because there are many needs that need to be considered, the decision was made to scope towards one specific need. The needs do somewhat overlap, but focussing on one specific need can create more in depth insights.

There are three design directions that were developed based on these needs, which are inspire to innovate, risk-reward and shifting judgment. To make a decision on which direction would fulfil the design goal best, a list of design requirements is created. This list can be used to evaluate the design directions.

3.2.2. List of requirements

Based on the paradoxes (section 3.1.3.), overlapping need links (section 3.1.2.) and expectations of the client, a list of design requirements was created. The requirements are organized on level of importance, to create a clear overview of what requirements have the most priority.

The design should...

1. ... assist students in **developing creative behaviour**
client
2. ... lead to higher **creative confidence** in both teachers and students
client
3. ... fit within the context of an **experiential learning** approach
need research
4. ... be a **continuous** learning process
need research / paradox
5. ... **motivate** students and teachers to be creative
paradox / desirability
6. ... assist teachers in creating the needed **freedom** to act creatively
paradox / desirability
7. ... have a **low threshold** for usage for teachers
paradox / desirability
8. ... combine the digital platform with **physical elements**
paradox
9. ... be easily **implementable** within the current GoFuture platform
feasibility
10. ... be used without further **guidance** from GoFuture (self-learning)
feasibility / viability

3.2.3. Harris profile

A Harris profile was used to measure the level of fulfilment for the requirements, ranging from -- (double negative – does not fulfil the requirement at all) towards ++ (double positive – completely fulfils the requirement). The design directions are measured in comparison to each other. The Harris profile and substantiation of the comparison can be found in Appendix L.

The outcomes were discussed with the supervisory team, and the direction of **'risk-reward'** was chosen. This direction has the most potential in developing creative confidence and creative behaviour, but also bears the most risks for implementation. It is an interesting challenge to research further, and has interesting potential.

'Shifting judgment' is an easy to implement direction, but it will not directly lead to more creative behaviour, only set the stage to do so. The direction 'inspire to innovate' has some potential, but would mostly be about delivering the right assignments, and would not completely lead to the desired results. Choosing this direction does not mean that principles from the other design directions cannot be used as inspiration for the development of the design direction and creation of the concept.

New design goal

Based on the chosen design direction, the design goal is reviewed and updated. The new design goal is as follows:

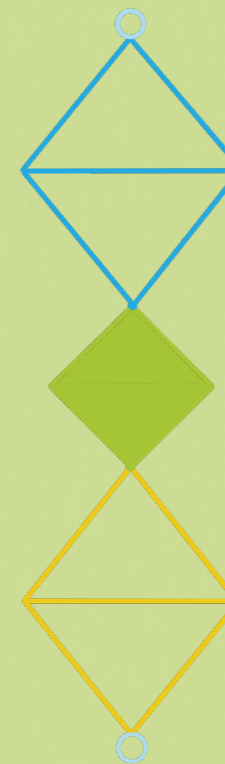
"This project aims to boost creativity in students within the context of entrepreneurial education through the GoFuture education platform. This will be achieved through creating awareness and courage for risk-taking in both students and educators, and therefore cultivating creative confidence."

Key take-aways

- The design should fulfil the list of requirements developed in section 3.2.2.
- GoFuture can facilitate the development of creative confidence through encouraging risk-taking behaviour in students and educators.
- A new design goal is proposed, which takes the importance of creating awareness and courage for risk-taking into account.



4 Scope



In the previous chapter, the design direction of risk-reward has been chosen. The meaning of risk-taking and failure within the context of entrepreneurship, creativity and education are further researched. The insights from this research are used to create design guidelines that can be used in the ideation phase.

4.1. Direct

- 4.1.1. Exploring risk-taking
- 4.1.2. Risk-taking in education

4.2. Structure

- 4.2.1. Thinking map
- 4.2.2. Design guidelines

4.1. Direct

This chapter introduces and elaborates on the chosen design direction: risk-reward. Through literature research and risk experiments the topics of risk-taking and dealing with failure are further explored.

Research questions

1. What is the meaning of risk-taking within the context of creativity and entrepreneurship?
2. What feelings arise when you take a risk?
3. What feelings arise with failure?
4. How can you encourage risk-taking behaviour within education?

Methods & Activities

Literature research

Literature research is performed to get a deeper understanding of risk-taking and failure, also within the context of education.

Risk experiments

Two risk experiments are executed to experience the feelings that arise while taking risks and after failure.



4.1.1. Exploring risk-taking

When you search the internet for 'risk-taking', the first findings you get are about the dangers of risk-taking, mostly related to teenage behaviour. The Oxford dictionary describes risk-taking as:

"The practice of doing things that involve risks in order to achieve something".

This definition is still very broad, so the meaning of risk-taking needs to be researched within the context of entrepreneurship and creativity.

Three research questions are proposed:

- What is the meaning of risk-taking within the context of creativity and entrepreneurship?
- What feelings arise when you take a risk?
- What feelings arise with failure?

The first research question is answered through literature research, and the two other questions are answered by executing two risk experiments.

Risk-taking within creativity and entrepreneurship

Within the entrepreneurial field, a higher propensity to take risks is actually one of the key definers of an entrepreneur. People that have a higher propensity to take risks are more likely to become entrepreneurs because they are more likely to play upon opportunities (Kobia & Sikalieh, 2010). The identification and exploitation of opportunities can be described as the core of entrepreneurship (Shane & Venkataraman, 2000). Brockhaus (1980) even states that risk-taking differs entrepreneurs from managers. Entrepreneurs do not necessarily view themselves as more willing to take risks, but they have a more positive attitude towards risky situations (Barbosa et al., 2007; Sitkin & Weingart, 1995). Altinay et al. (2021) found that the tendency to take risk is the variable with the strongest correlation to entrepreneurial intention. Individuals who are more tolerant towards risks, also appear to benefit more from entrepreneurial education (Fairlie and Holleran, 2012). According to Arpiainen & Kurczewska (2017), entrepreneurs see risk-taking as doing something without any idea of what the consequences will be. But, they also state that they

will not take risks if they didn't think it through and didn't calculate it.

Within entrepreneurship, risk-taking means to be in the unknown, and to try something new and unique (Matson, 1991). Assessing these risks helps you with framing riskier choices as opportunities instead of obstacles (Röth & Spieth, 2019). By knocking down barriers and boundaries, you will learn to step into the unknown and find out what works. Through failure, you become motivated to learn more, and it forces you to recognize your weaknesses and test your resolves (Matson, 1991).

Also within the creative field, risk-taking is seen as an important attitude. Beghetto (2018) states that: "Risk-taking, enacted through a willingness to try new ideas and possibilities, and engage with the potential for failure, is key to the iterative nature of creativity and learning". He states that it is necessary to take risks to generate creative action. Within education, creative risk-taking involves providing students with an opportunity to meet predetermined criteria in different and unexpected ways. It also requires openness to difference (Glaveanu & Beghetto, 2016). Hadjielias et al. (2021) states that risk-taking can be seen as the bridge that turns creativity into potential innovation. Creativity and innovation are closely linked, but they only positively influence each other by the intermediation of risk-taking.

Conclusion

It is thus in both creative and entrepreneurial education important to develop a positive attitude towards risk-taking behaviour, but the meaning of risk-taking differs slightly within both fields. Within entrepreneurship, risk-taking focusses on investing in opportunities. In creativity, risk-taking is about a willingness to try new ideas and possibilities, and handle situations in different and unexpected ways. The definition of risk-taking within this project can be summarized as:

"The openness to take chances to reach goals, like finding opportunities, experimenting with new ideas and using creative ways to solve problems."

Both fields mention the importance of dealing with failure. Students also need to learn how to assess their risks and construct valuable conclusions to learn from and iterate on.



Risk experiments

To create an actual idea of what people think of and feel when you mention the words 'risk' and 'failure', two risk experiments were executed, one in a small research group, one individually. The goal of the experiments was to get an understanding of the feelings that arise with failure, risk-taking and talking about failure. As a first experiment, personal failures were discussed with 5 participants. The experiment took place in the middle of the schools' summer holiday, so no teachers and students were available to participate. For this reason, convenience sampling was used. The participants were between 20-30 years old, and have a higher educational background. The goal of the experiment was to understand the feelings behind talking about failure, so therefore it was not of high importance for the participants to be the exact target group.

The participants were asked to think about their favourite failure three days before the experiment. The execution of the experiment was in a casual setting, within two groups of 2-3 participants and the researcher. The exercise is based on an assignment created by Beghetto (2018), who explains the importance of discussing favourite failures, to get acknowledged with the idea that everyone fails. Insights were captured through note taking and audio recording. The second experiment was a personal risk-taking experiment, in which I tried to involve myself in more risk-taking and writing down which feelings occurred when taking these risks, and what feelings occurred with (the possibility of) failure. The exercises and insights are further explained in Appendix M.

Results

Results from the first exercise show that people do not feel comfortable with sharing failures, even if they are perceived as funny stories. Two participants mention that talking about these moments makes them to relive it, and they do not want to. None of the participants said they felt better after sharing these failures within a small group. Most of the failures they talked about, were connected with the feeling of shame and embarrassment, because they felt judged by someone else or judged themselves. Besides this, it became clear that failure does not always occur

from taking risks, it can also be caused by other circumstances. Even though the failure stories were very diverse, everyone could think of a learning they got out of the experience, which did end the conversations on a positive note.

"I learned that it is important to straight away get up again and continue, because otherwise it will become harder and harder."
participant 2

The second exercise I let myself experience different risks and reflected on this. The reflection method helped in translating feelings and experiences into learnings.

One of the main takeaways of the experiment is that it is important to scope the risk-taking and failing within a specific context, because risk taking can mean a lot of different things and lead to a lot of different feelings. The risk experiments that were about crossing mental barriers instead of physical barriers led to outcomes that were more coherent with the literature research, like the feeling of insecurity, resistance and anxiety.

"It is sometimes better to try something and don't succeed, then not even try at all. In the end, it does not matter if you fail, and it only feels better when you succeed."
personal reflection

"After reflecting on my actions, I realised I went too far and took too much of a risk, which made me feel a bit stupid about myself. But I was also still proud that I did it."
personal reflection

Conclusion

The risk experiments led to the realisation that failure and risk could lead to emotional consequences. Within personal reflection, you can translate your emotions into learnings. Before someone is open to talk about their failures with others, it could be needed to first reflect on their failures personally. The road to acceptance differs from person to person, and should be handled with care. But, if failure is accepted, this could lead to positive learnings.

Besides this, it is important to keep the context of failure and risk-taking within a certain scope. The

risks that need to be taken are from an emotional perspective skill focussed: being afraid that you are not *able* to do something.

4.1.2. Risk-taking in education

Besides getting an understanding of the meaning of risk-taking within the context, it is also important to get an understanding of how this can be implemented within education. This led to the following research question:

How can you encourage risk-taking behaviour within education?

This question is answered by looking into different approaches for implementing risk-taking behaviour within education through literature research.

Education approaches

In the last few years, the research about risk-taking within education has been on the rise (Graciano et al., 2023). There are several approaches on how to implement risk-taking within education. Some of these approaches are described hereafter. The approaches all focus on different aspects of risk-taking, some are using specific methods to generate the freedom for risk-taking and failure, while others look into the mindset that is needed to support risk-taking behaviour.

Productive failure

When dealing with risks, you also deal with failure. To develop an ability to learn from failures and to approach this with the right state of mind is a skill that needs to be developed throughout the whole education system (Graciano et al., 2023). Productive failure answers the question on how to create a space in which you can take risks, but also fail and learn from your failures. Within productive failure, students are engaged in solving complex and ill-structured problems without the provision of support (Kapur, 2008). By throwing students in the deep, and letting them solve problems by using prior knowledge, a divergent and open-ended exploration of the problem space is stimulated. This can cause struggle in students, and could even lead to failure. By giving students the space to

get 'stuck', the students experience a productive exercise in failure (Kapur, 2008). The generated solutions lead to an insight in the amount of knowledge of the students, after which the teacher, or preferably facilitator, can adjust their explanations towards the prior knowledge of the students (Persaud et al., 2022). A study from Creely et al. (2021) describes that for students to be engaged within productive failure, the classroom climate needs to be built on trust. Students are not used to being stuck, and this could lead to some emotional consequences, like anger, frustration and anxiety.

To make this method succeed, it is important to create the adequate emotional support and culture that sustains the challenges of creativity emotionally (Hendriksen et al., 2021). Besides this, Creely (2021) mentions that if a school or organisational culture does not encourage risk-taking, failure and trust-building, the classroom environment may also struggle to support risk-taking behaviour.

Intelligent Fast Failure

To be open to take risks, and learn from these risk experiments, you need to first agree to two things: overcoming and understanding the fear of failure, and deciding to learn from failure (Tahirsylaj, 2012). Intelligent Fast Failure is built on three principle: generating ideas, running experiments and shifting perspectives (Matson, 1996). When you take a risk, you want to learn as much as possible about what happened and why, without using too many resources and through being open to the possibility that the risk could lead to failure; but by gathering insights that together form a successful risk (Matson, 1992).

Possibility thinking

Possibility thinking has been explored both in theory and through practical research for more than ten years in early childhood and elementary school environments (Gregoriou, 2019), but is not placed in the context of higher education yet. In basis, possibility thinking can be described as the shift from 'What is this and what does it do?' towards 'What can I or we do with this?' (Craft et al., 2013), also described as 'thinking in novel and valuable ways about the world' (Craft, 2000). It exists out of three principles, which are: using imagination to



find a solution to a problem, the asking of questions and combinatory play. Learnings from the principles of possibility thinking could possibly be used to spark imagination and curiosity within students in higher education, and lead to higher risk-taking.

Playful learning

Principles derived from theatre are also often used to improve risk-taking. By implementing playful activities within lessons, a sense of ownership could lead adolescents to explore their potentials, along with a sense of meaning, that is associated with becoming an entrepreneur (Graciano et al., 2023). Fostering a sense of playfulness in students provides them with the freedom to imagine, investigate, and innovate in fresh, enjoyable, and imaginative ways. However, it is needed to create the space for this behaviour, also described by Whitton (2018) as the ‘magic circle’. This magic circle is defined as a separate entity from the real world, and it is defined by a boundary, whether it’s physical, virtual, or imaginary. This boundary is collectively created by the participants. It’s not a concrete barrier, but it is a flexible framework that defines the space to play, that takes away fear, ridicule or failure.

There are different ways to enable playful learning, which can be categorized in tools, techniques and tactics (Whitton, 2018).

Examples of tools are games, simulations and virtual environments. These tools create a playful learning environment and can be used to encourage or develop playfulness. A case study to try out serious gaming within entrepreneurial education was executed by Neck and Greene (2011). In their study they developed a video game that supported learning about how entrepreneurs think under conditions like uncertainty and risk. Serious gaming allows students to practice entrepreneurship in a different environment. In general, online gaming platforms can boost students’ creativity and problem solving skills through decision making and collective planning (Khan et al., 2018).

Within the category of techniques, you can find activities like role play, making and performance. Improvisation exercises are also often used within this context. According to Mourey (2019),

the use of improvisation in classes can improve communication, collaboration, confidence and creativity. One of the lessons to learn from the field of improvisation is the idea of ‘yes, and..’, in which others react on propositions by adding onto them instead of rejecting them. The main lesson that can be derived from improv is trying to be courageous, going out there and taking risks, by using the natural fear of failure as fuel for success (Yorton, 2005).

Lastly, playful tactics are practices, devices or characteristics that bring playfulness into a variety of contexts. Examples of these tactics include humour, competition and storytelling. A case of a storytelling approach is ‘lesson play’. Lesson play is directed towards teachers, in which they are challenged to write a script for a (part of a) lesson, in which there is an imaginary dialogue between teacher and student, based on a prompt (Zakkis, 2017). This can help teachers in preparing their lessons more in-depth through imagination and consequently approach possibly occurring problems more creatively.

Brave space

All the above approaches mention the importance to create a space in which students feel free and safe to be involved. This space is often referred to as ‘safe space’, a term which implies that danger, risk and harm will not come to that space (Cook-Sather, 2016). Holley and Steiner (2005) describe a safe space as an “environment in which students are willing and able to participate and honestly struggle with challenging issues”. The principle of a safe space is originally derived from classes in which students have discussions about sensitive topics, like race and privilege, but the struggles are quite similar within creativity, and can also be used for this field.

At the moment, there is a lot of discussion about the term ‘safe space’, because of the expectations that come with it, like not stepping out of your comfort zone and take risks. This is why the term ‘brave space’ is currently being introduced. A brave space implies that there is a possibility of risks, but those who enter the brave space, have the courage to face these risks, because they know they will be supported and acknowledged (Cook-Sather, 2016). Eizadirad et al. (2023) describes a brave space as: “a

space that encourages stepping outside of comfort bubbles via calculated risk-taking and sharing and embracing of vulnerabilities.” It is a place where everyone feels like they can contribute, explore new ideas, make mistakes, are being heard and are willing to be challenged.

To create this space, students need to have guidelines in order to develop trust and safety (Hardiman et al., 2007). Guidelines could include the need for space and time, commitment and a place without judgment (Brown & Guillen, 2022). Stubbs (2019) created 6 pillars that together build a brave space (Figure 33).

1. **Vulnerability**
By giving both students and teachers the space to be vulnerable, they create a space for deeper engagement, learning and finally, innovation.
2. **Perspective taking**
By being curious about others and listen to understand why someone say something, you can learn from each other’s experiences.
3. **Lean into fear**
By reframing fears into opportunities for change, you can take risks to experience something new, and learn from this.
4. **Critical thinking**
By being open to new input and possibilities, and reflecting on your own knowledge, you can expand your thinking.
5. **Examine intentions**
By examining your own intentions though questioning yourself about the purpose of your actions, you create a deeper level of self-awareness.
6. **Mindfulness**
By allowing yourself to be present in the moment, and being aware of your own judgment and emotions, you create the space to open up for the above mentioned pillars.

6 pillars of brave space

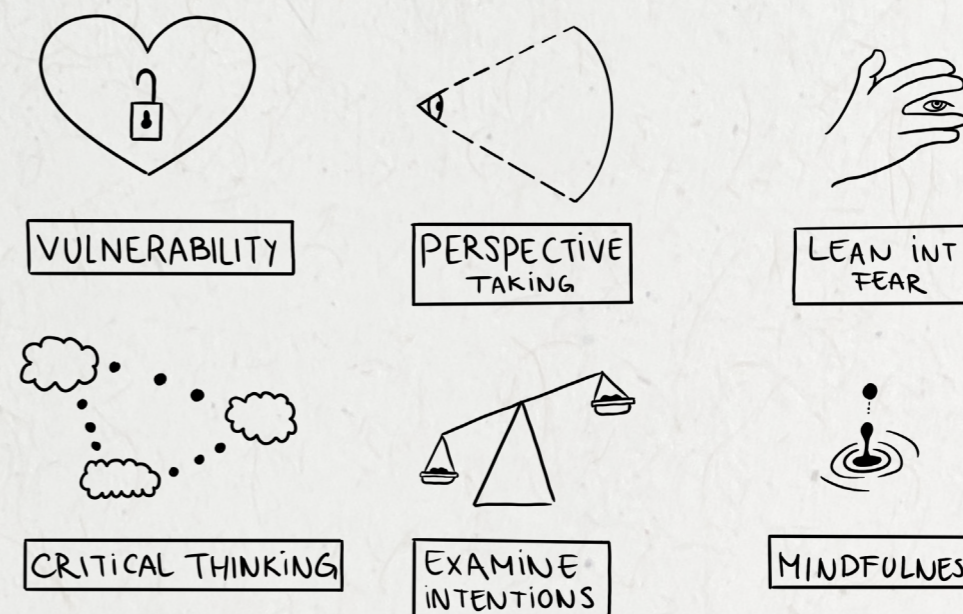


Figure 33: Six pillars of a brave space (Stubbs, 2019)

Conclusion

The research about educational approaches that focus on risk-taking and dealing with failure lead to different insights for what is desired when encouraging risk-taking behaviour within education. The demands for implementation of the approaches sometimes overlap with each other. For example, the importance of creating freedom for failure and building tolerance for failure is mentioned in several of the approaches, like playful learning, brave space, and productive failure.

Insights and quotes from the different approaches, together with the exploration of risk-taking and the risk experiments are organised within a thinking map (Appendix N). This thinking map could assist in developing design guidelines within the ideation phase. The map and the approach for analysis will be discussed in the following chapter.

Key take-aways

- The definition of risk-taking within this project can be summarized as: The openness to take chances to reach goals, like finding opportunities, experimenting with new ideas and using creative ways to solve problems.
- Failure and risk could lead to emotional consequences. If the possibility of failing is accepted, this could lead to positive learnings.
- The risks that need to be taken are from an emotional perspective skill focussed: being afraid that you are not *able* to do something.
- There are different educational approaches that focus on failure and risk-taking. The demands for implementation do somewhat overlap, and need to be further analysed to develop design guidelines (chapter 4.2).

4.2. Structure

In this chapter, the gathered insights from chapter 4.1. are clustered and analysed within a thinking map. The insights are then translated into six design guidelines.

Methods & Activities

Thinking map

To analyse and understand the connections from the gathered data in chapter 4.1., a thinking map was developed.



4.2.1. Thinking map

A thinking map is a method that helps in organizing ideas and information effectively. It visualises abstract thoughts and assists in connecting insights (Opinaldo, 2021). First, quotes from the activities from chapter 4.1. were gathered, colour-coded and organised, after which they were translated into insights. These insights were re-arranged and

clustered in overlapping topics. The initial overview of quotes can be found in Appendix N. The re-arranged insights are shown in Figure 34.

These clusters were used to form design guidelines. These design guidelines are discussed in section 4.2.2.

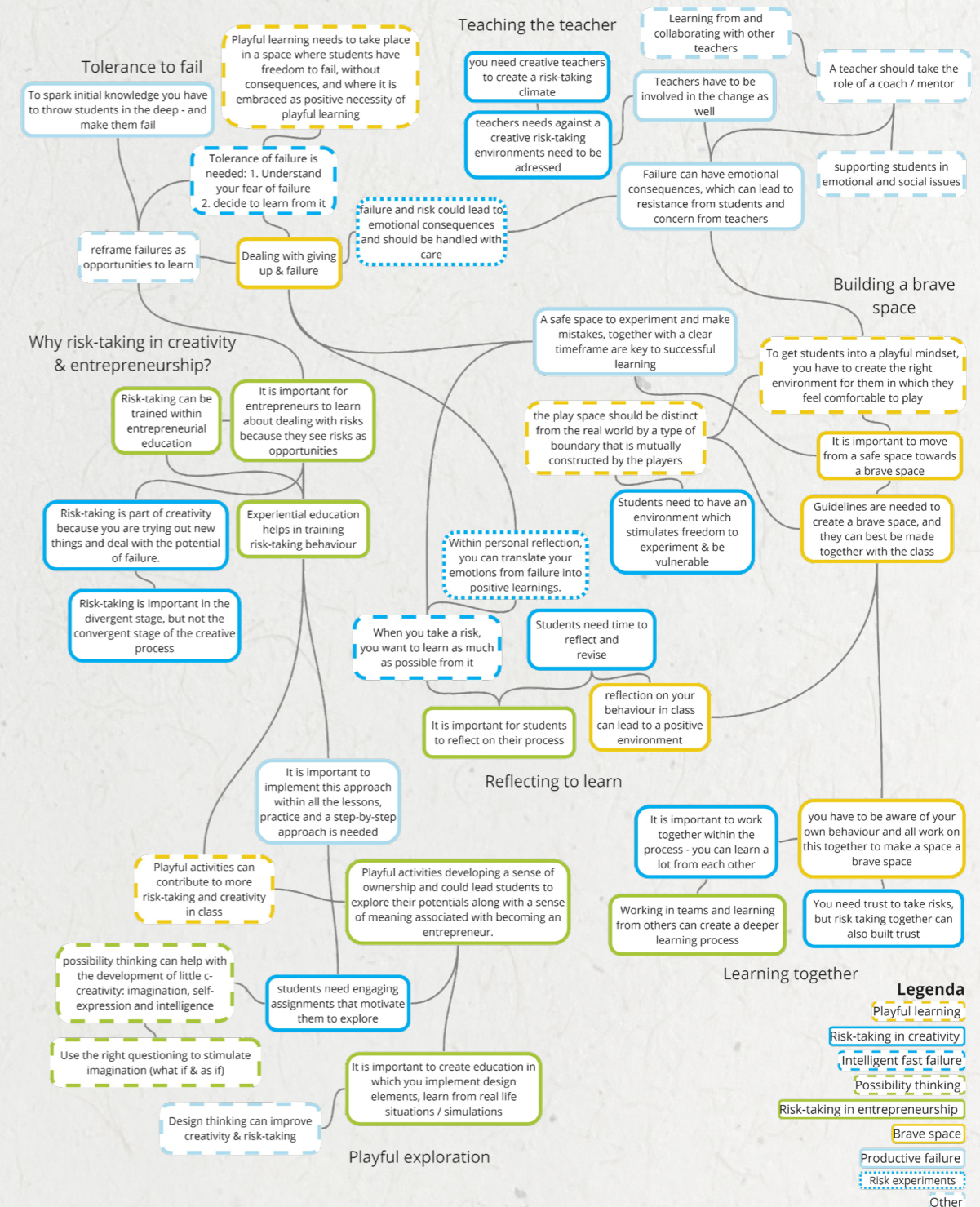


Figure 34: clustered insights from chapter 4.1.

4.2.2. Design guidelines

Based on the thinking map, some reoccurring factors that are important in the development of risk-taking within the classroom could be found. These factors are clustered, named and translated into design guidelines that need to be taken into account within the design of the solution. One of the clusters is not translated into a design guideline, which is the cluster 'why risk-taking in creativity & entrepreneurship'. This cluster mostly describes why risk-taking is important, but not how this can be implemented. The other six guidelines are shortly discussed below:



1. Teaching the teacher

To get students to take risks, it is important to train teachers how to take on the role as coach instead of a traditional teacher role. The emotional consequences that can appear with failure and risk-taking are something the teacher needs to be prepared for and is able to support students in. Besides this, teachers need to be involved and in agreement with the changed teaching approach and develop their own creativity and risk-taking.



2. Building a brave space

As mentioned before, it is important to create a space in which students feel the freedom to behave bravely. For this, behavioural guidelines are needed, like postponement of judgment, openness, positivity and commitment. The best way to address these behavioural guidelines is through developing them with the students themselves, instead of imposing them.



3. Learning together

Collaboration is an important contributor to trust building within a classroom. By creating a feeling of unity, students more easily take risks, and can learn from each other and others behaviour.



4. Playful exploration

By using playful exercises, imagination and creativity can be sparked, and



5. Tolerance to fail

It is important to overcome the fear of failure, to become involved in risk-taking and to be open to learn from risks and failures. By reframing failures as opportunities to learn, and by tolerating failures by understanding your fears and translating these into learnings, you become open to learn and do something with your learnings.



6. Reflecting to learn

Reflection is not only important for learning from the insights students get throughout their process and to iterate on this, but also to get an understanding of their own behaviour and attitudes.

Conclusion

The design guidelines can be used to develop valuable ideas within the ideation phase. They support in deciding on how risk-taking and failure can be implemented within education.

students become more motivated to explore and take risks. These playful activities can be everything, ranging from improvisation towards video games, but it is important to define the goal of the exercise and find the right way to reach this goal.

Key take-aways

- The knowledge gathered in the previous chapter are reorganised in six concrete design guidelines.
- The design guidelines support in deciding on how risk-taking and failure can be implemented within education.
- The design guidelines can be used for the development of ideas within the following ideation phase.



5 Ideate

The gathered data and insights from the previous chapters are used as input for ideation. The ideation phase starts off with idea generation, after which a concept direction is chosen, which is further developed through several activities.



5.1. Idea generation

- 5.1.1. The ideation process
- 5.1.2. Broad idea generation
- 5.1.3. Directed idea generation

5.2. Concept development

- 5.2.1. The initial design
- 5.2.2. Creative Facilitation
- 5.2.3. Evaluation interviews
- 5.2.4. Assignment testing

5.1. Idea generation

This chapter proposes ideas on implementing risk-taking within the context of GoFuture to foster creative behaviour and train creative confidence. The idea generation existed of two phases: a broad and a directed idea generation.

Methods & Activities

Ideation sessions

several ideation sessions were executed, using methods like brainstorming and how-to.

Observation

An observation was performed at the minor of Connected Creativity to get some practical examples of creative exercises.

Morphological chart

A morphological chart was made to create examples of exercises that could be used within the concept.



5.1.1. The ideation process

A visualisation of the ideation phase can be found in Figure 35. The process of ideation is shown, with the activities that were executed to move from the design guidelines towards the final concept. The ideation process exists of several phases: the

broad idea generation, directed idea generation and concept development. The first two phases are discussed within this chapter. The development of the concept is discussed in chapter 5.2. and the final concept is presented in chapter 6.1.

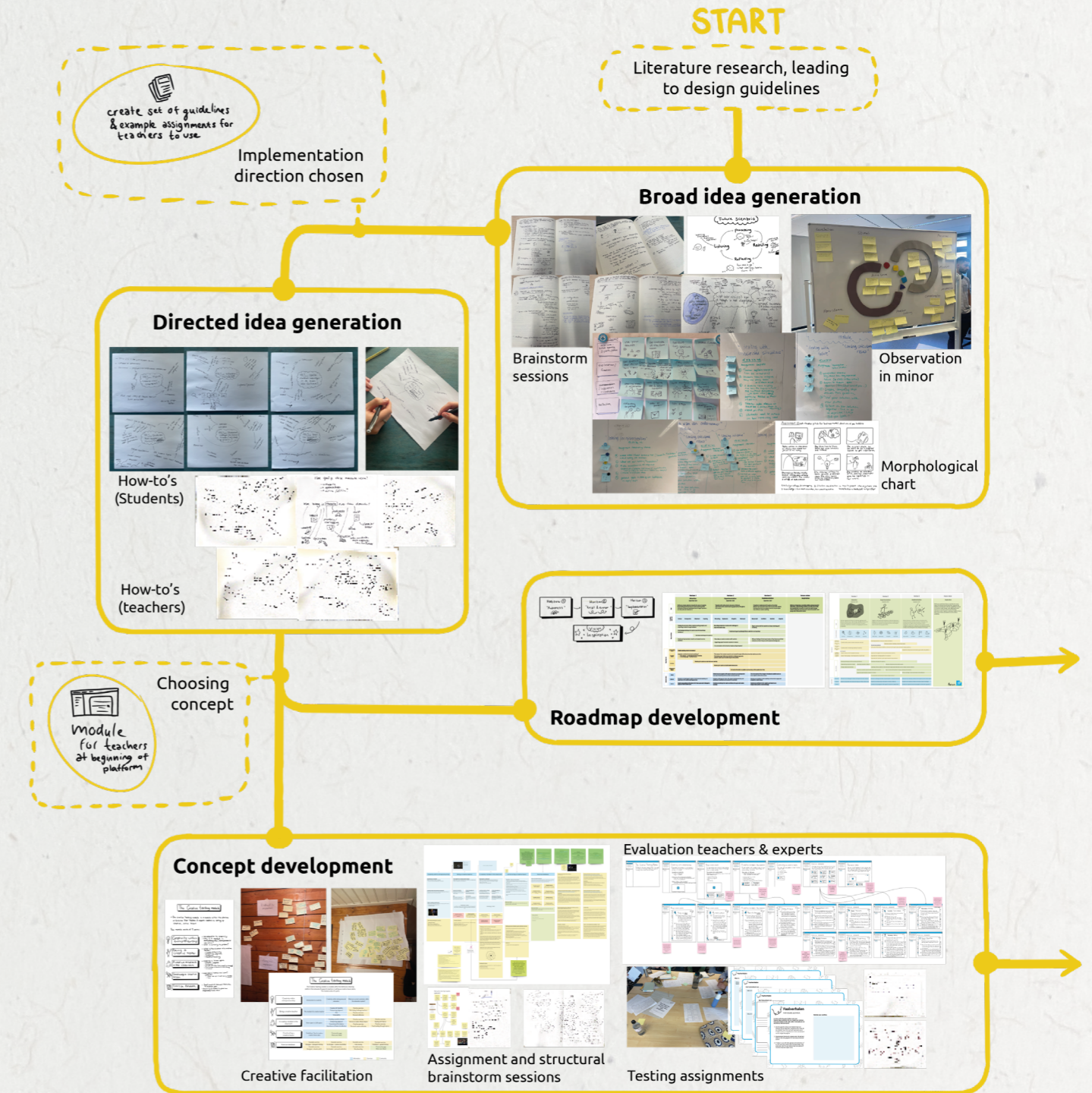


Figure 35: Timeline of the ideation phase



5.1.2. Broad idea generation

Within the first ideation, several activities were executed. An observation was performed to get practical examples of how a brave space can be created. Several brainstorm sessions were executed to generate first ideas on how to implement risk-taking within education, and a morphological chart was made for idea generation.

Observation in minor

Within the minor 'Connected Creativity', students are learning about creativity, exploring their own creativity and building creative confidence through practice. During the first day of the minor, observations were conducted, to get practical examples of how a brave space can be created.

Brainstorming

Different creative sessions were performed for idea generation. The sessions were performed individually and the methods of Brainstorming (Rozenburg & Eekels, 1995) and 'How-to' (van Boeijen et al., 2014) were used to generate ideas. Several questions were explored through this technique, like 'How can you stimulate risk-taking behaviour in GoFuture?' and 'How can you actively learn from experiences within a classroom?'

Morphological chart

Based on the insights in the previous chapter, a morphological chart was created. The ideas that came out of the morphological chart were then connected in different ways, leading to ideas for assignments, which were based on the design guidelines and topics of the GoFuture platform.

Conclusion

After some rounds of ideation, it became clear that these actions did not lead to fruitful, implementable results. The ideas that were created were superficial and did not connect to the context of the project. To get an effective ideation, it was needed to scope the ideation more towards the platform of GoFuture. Six implementation ideas were presented and discussed with the supervisory team (Figure 36). After consultation about the feasibility and impact of the directions, the conclusion was made that it would be most beneficial and achievable within the duration of the project and considering the requirements (section 3.2.2.) to choose the direction that focuses on information giving and inspiring teachers, as a starting point to stimulate creativity within the classroom.

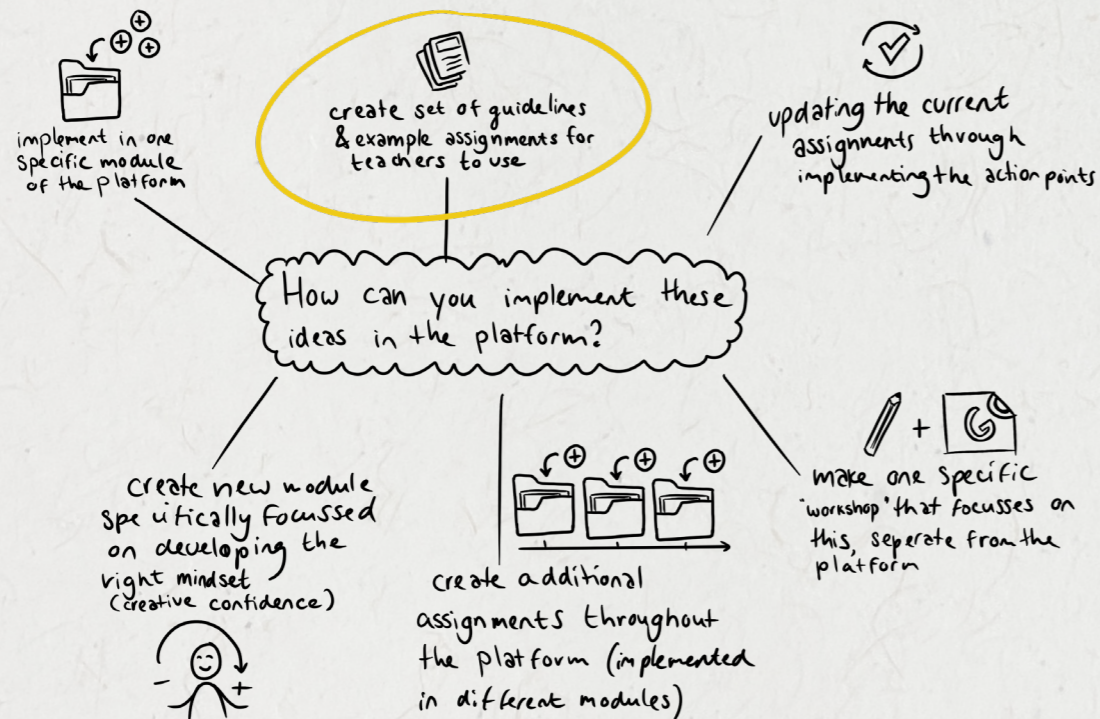
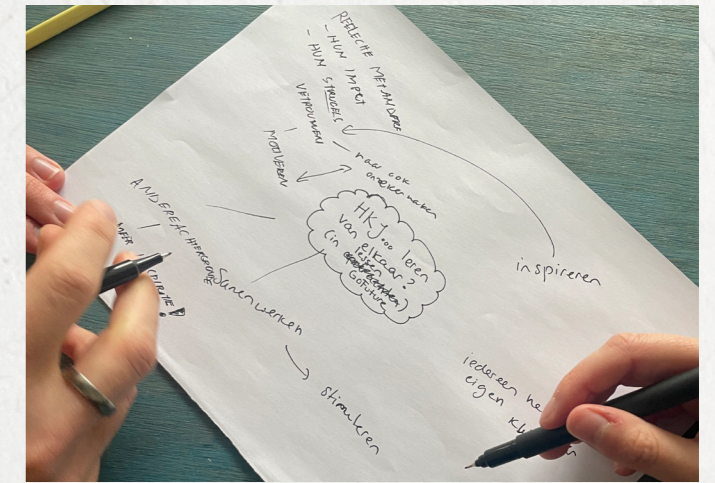


Figure 36: Implementation directions

5.1.3. Directed idea generation

After the implementation direction was chosen, a second ideation round was introduced. In this ideation, two ideation sessions were executed with both two participants by making use of the 'How-to' method (Van Boeijen et al., 2014). One session was directed at the students, about how the design guidelines could be used to support the teachers in implementing creativity and risk-taking within the GoFuture lessons for the students. The second session was specifically focused on the teachers, and in which ways the teachers can be informed and inspired to start implementing creativity within their lessons.

The ideas from the teacher ideation session were used to create formats in which the teachers will receive the needed information and inspiration. The student ideation sessions were used to create the elements that need to be addressed within the concept. Together, this input led to several ideas (Figure 37), of which one was chosen to be further developed.



The idea that was chosen is the 'module for teachers at the beginning of the e-learning platform'. This idea was chosen, because it fitted best within the vision of GoFuture and came out as best idea with the most potential based on the list of requirements (section 3.2.2.). Besides this, it is the most flexible option in which the design guidelines (4.2.2.) can be incorporated.

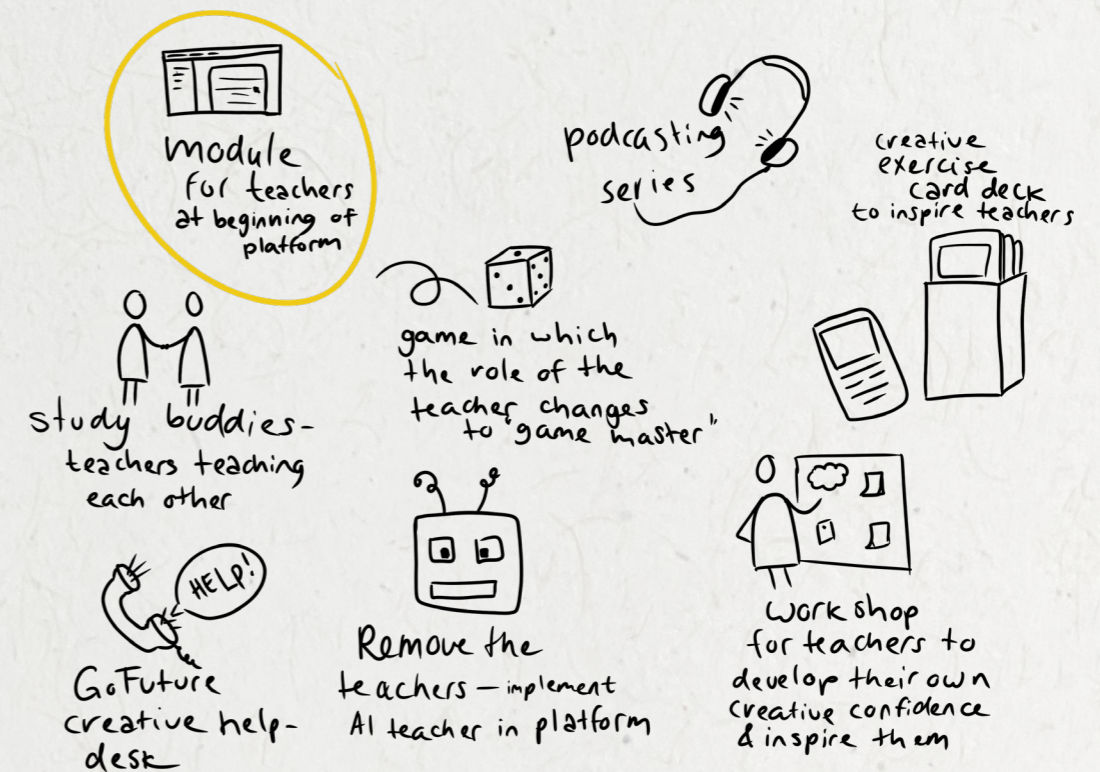


Figure 37: some of the ideas created after the brainstorm sessions

The Creative Teaching module

The idea is translated into: The creative teaching module. By incorporating the design guidelines, several topics were created that should give the teacher the right information and inspiration to get started with implementing creativity and risk-taking within the classroom. A first overview of the topics can be found in Figure 38.

The roadmap

The concept is mostly focussed on awareness and setting the stage for creativity within the classrooms of GoFuture. To really work on creative confidence in the meaning of risk-taking behaviour, practice over time is needed (Kelley & Kelley, 2014). You do not get anywhere with just setting the stage

if the rest of the assignments are not adapted to the found design guidelines.

Besides developing the creative teaching module, the decision was made to develop a roadmap, to guide GoFuture in implementing creativity throughout the platform and within the classrooms (Figure 39). A roadmap is a visual portrayal of design innovation elements plotted on a time line (Simonse, 2018). The roadmap is divided in three horizons – resulting in the future vision. The concept focuses on the first horizon, in which it creates awareness and sets the ground for teachers to learn about creativity and become inspired to implement this within their classroom.

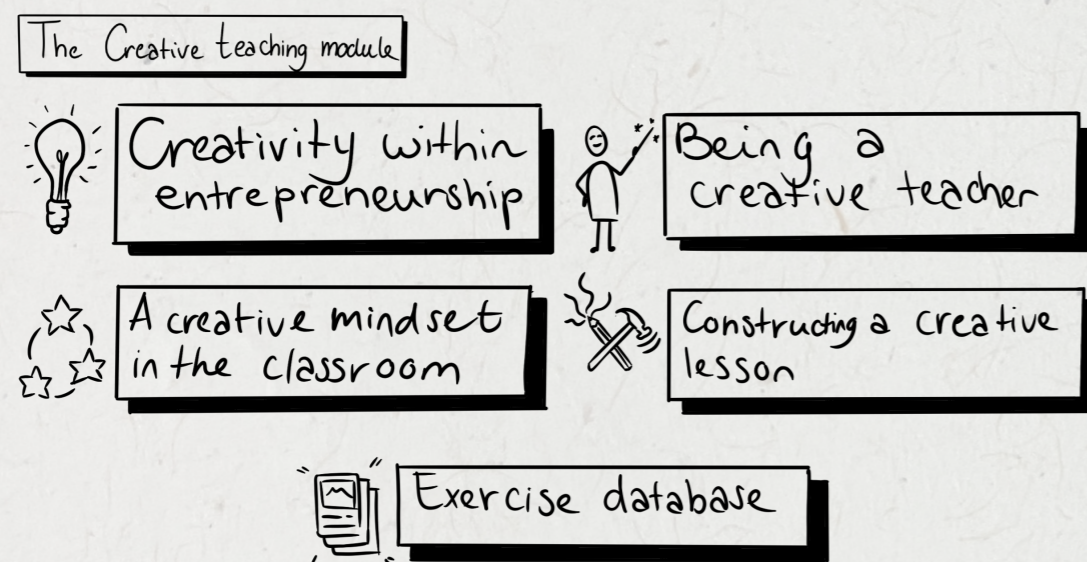


Figure 38: first layout of the creative teaching module

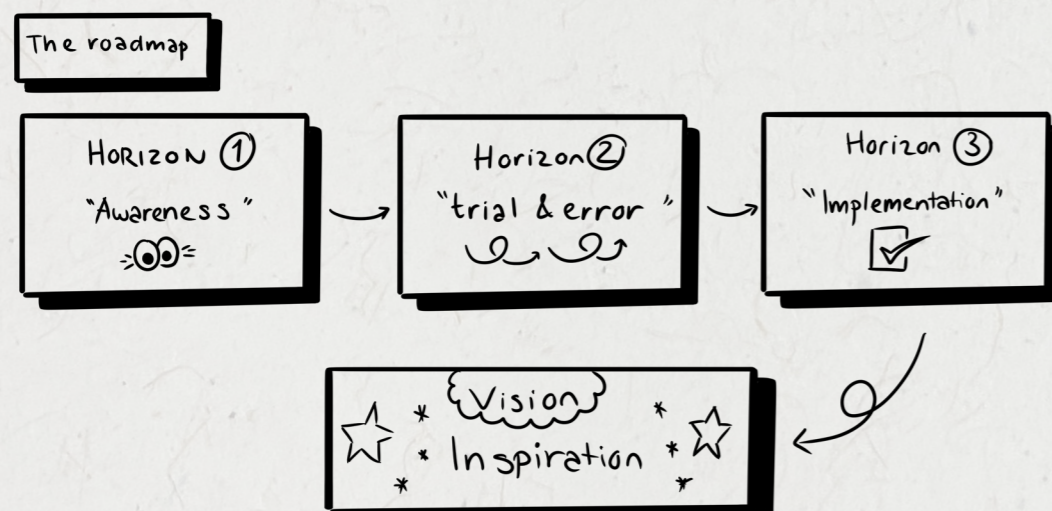


Figure 39: first layout of the roadmap

Key take-aways

- The design guidelines and requirements were used to develop an initial concept idea.
- After ideation, the decision was made to develop a teaching module for teachers. This idea fitted best within the context of GoFuture and has most flexibility.
- Parallel to this, a roadmap is proposed to work towards a vision in which creativity is implemented throughout GoFuture.

5.2. Concept development

In this chapter, the idea of the creative teaching module is further developed into a concept, through different iterations and evaluation sessions. Along with the concept, the roadmap is further developed. Some of the activities that were executed are discussed shortly.

Methods & Activities

Creative facilitation

Two creative facilitation sessions were performed to create novel ideas about teacher engagement.

Evaluation interviews

Evaluation interviews were conducted with experts and teachers to get feedback on the concept

Low-fidelity prototyping

A low-fidelity prototype was created for the evaluation interviews

Assignment testing

One of the assignments was tested within the minor of Connected Creativity



5.2.1. The initial design

The theory and design guidelines discussed in the previous chapters were used to create a layout of content for the concept and roadmap (Figure 40 and 41). These frameworks were used to evaluate if all of the topics were implemented and to create a clear and logical structure. Several ideation

sessions were executed to define and design the assignments needed within the module. Besides this, several other activities have been executed to further develop the concept. These activities are discussed in the following sections.

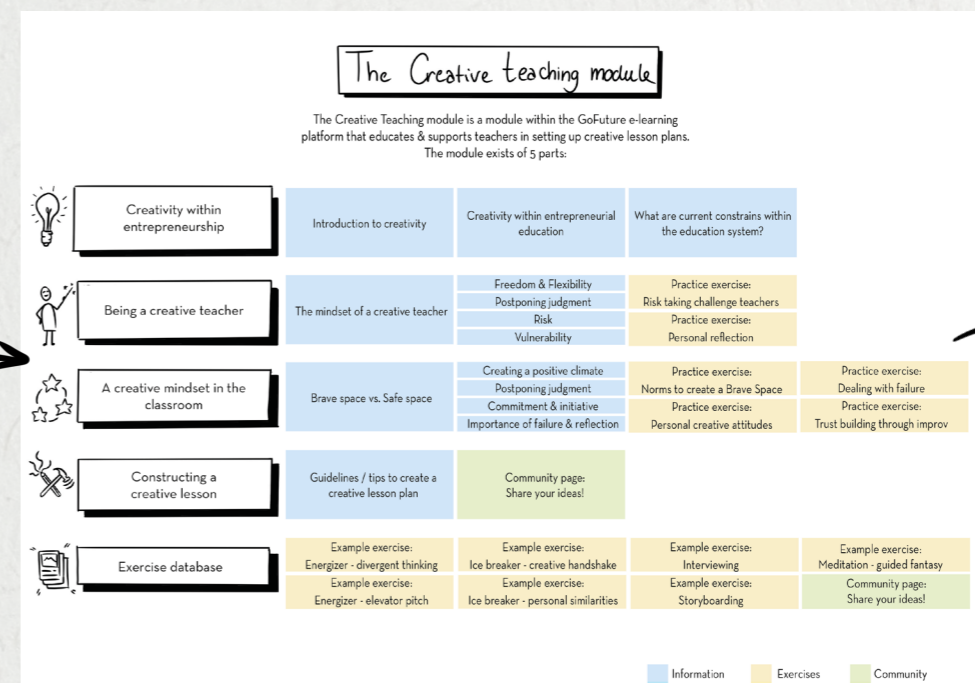


Figure 40: initial concept of the creative teaching module

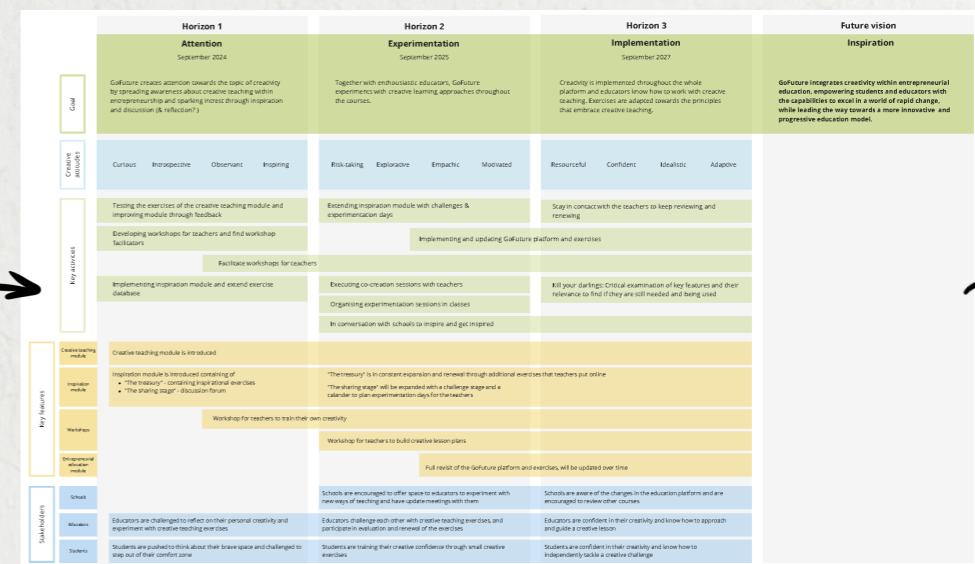


Figure 41: initial concept of the roadmap



5.2.2. Creative facilitation

Two creative facilitation sessions have been executed during the course of Creative Facilitation (Figure 42). The sessions revolved around the question: "How can you ensure teachers use the concept effectively despite their limited time?", and was used to gather out-of-the-box ideas and inspiration for the ideation on the concept. Two students of the course facilitated the sessions, both with 4-5 participants. Because of the deep involvement within the project, the researcher took on the role of the problem owner. The sessions were 2 hours long. A complete overview of the insights and ideas can be found in Appendix O.

The ideas were used to further develop the concept and used as inspiration to make the platform more attractive for teachers. Some of the ideas that came out of the sessions are shown in Figure 43. Interesting ideas that have been implemented in the concept are: the buddy system – learning from & with each other, also as teachers; creative challenges; and the use of podcasting. The buddy system is translated into a sharing platform within the module where teachers can connect with each other and share suggestions, ideas and inspiration. The idea of podcasting is implemented through an podcasting button on each page of the module. Other ideas are used as inspiration for further development of the concept, and are incorporated in the roadmap, like creating creative challenges for teachers, derived from the tablet of terror idea, and the possibility of experimentation days for teachers, derived from the role playing idea.

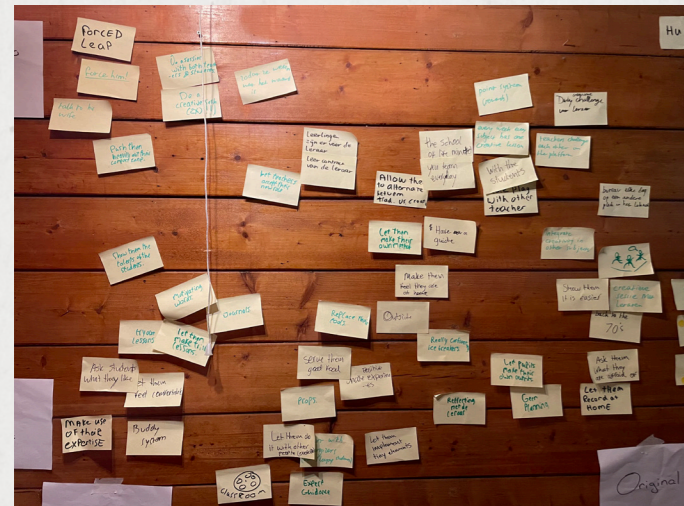


Figure 42: Brainstorming during the CF sessions

5.2.3. Evaluation interviews

To evaluate the concept and the roadmap, and to discuss ideas and assignments, three evaluation sessions were conducted with two experts and two teachers. The evaluation sessions lasted around 1 hour each, and semi-structured questioning was used. For the evaluation, a low-fidelity prototype was developed, which is shown in Figure 44 on page 88.

The experts are both from the education field, one is a professor that researched the topic of teaching about failure in entrepreneurship, and the other is an education strategist. Both teachers give economics and entrepreneurship classes at VMBO level and are somewhat familiar with the current GoFuture platform. Further explanation about the research setup and an overview of the insights can be found in Appendix P.

The evaluation sessions were conducted to answer the following research questions:

- How can you develop an exercise that supports in dealing with failure and translating this into positive learnings?
- How would teachers use this module and what elements are valuable for them?
- How can you make the roadmap implementable?

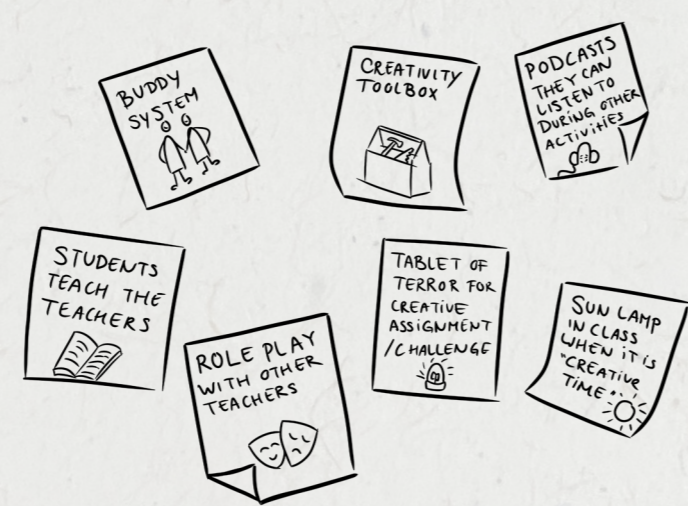


Figure 43: some interesting ideas from the CF sessions

The input gave some important insights that needed to be adjusted and implemented in the concept:

Dealing with failure

The session with the failure expert led to the renewal of the exercises related to dealing with failure. He mentioned that many students are not ready or open to talk or work on dealing with failure, and this openness is needed to start. Assignments that are created through the concept of productive failure need to be prepared well in-class, and the teacher needs to give the right emotional support to do so. This is risky to do with an education module that has no further influence on the way the teachers execute the lessons, except through information giving. This was also discussed with the teachers, they mentioned that students are often hesitant to discuss failures, because they sometimes go through a lot of things that can come to the surface with an exercise like that. It is thus important to be careful with assignments about failure, and it is first necessary to set the basics before you can go deeper within the topic.

"If you create an assignment where students have to fail, they must be willing & ready for this, and be open to discuss this."
- failure expert

Value for teachers

The teachers mentioned that they thought the module was very valuable. They think it is interesting, and they would use it if it is implemented. They prefer the practical, tangible things, like the exercises and tips and tools, and state that they think it would be very beneficial if teachers start sharing more. The exercises inspired them, and they straight away started to think about how they could use these within their classes. The evaluation with the education strategist led to the conclusion that there has to be an urgency for teachers to start working on a module like this. It is important for teachers to learn about how to implement creativity within the classroom, but it needs to have a benefit for them as well, and needs to be seen as important within the school. This has been one of the paradoxes that was already discussed before (section 3.1.3.). Also the time

limits that teachers have need to be taken into consideration – only the most relevant information needs to be conveyed, and in an approachable way.

"It would be good if teachers started sharing a little more with each other. Both within and outside of the school."
- teacher VMBO

"I especially like that it contains assignments that really stimulate creativity, because that makes it very tangible for teachers to work with."
- teacher VMBO

"There must be a sense of urgency among teachers to get started on this."
- education strategist

Implementation of the roadmap

The roadmap has been discussed with the education strategist. The horizons work well according to him, but he suggests that the steps that need to be taken to get to these horizons have to be easy to follow, like a 'to do list'.

Discussion

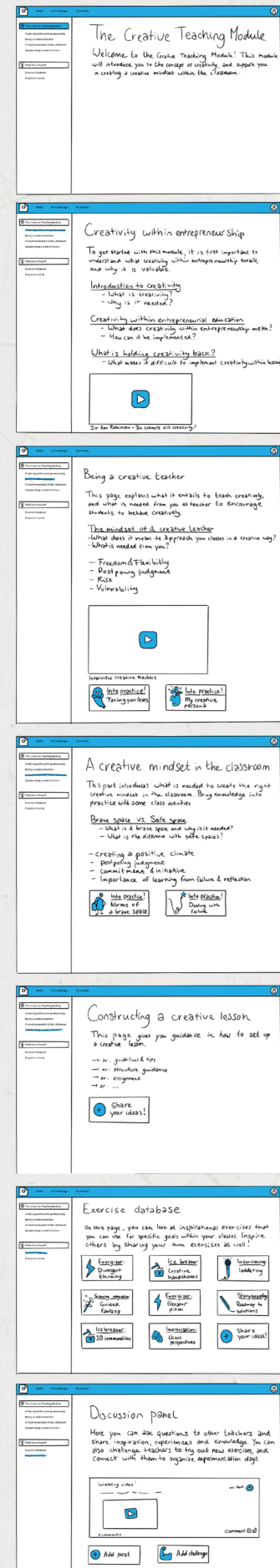
The interviews were valuable for discussing some doubts about aspects within the concept and for ideation on solutions. Because the ideation phase mostly took place during the summer holiday, it was not possible to involve teachers and experts earlier in the ideation phase. It would have been valuable to discuss some concerns earlier within the ideation and to involve teachers within a brainstorming session or second co-creation.

Conclusion

Several conclusions could be drawn from these interviews, that have to be taken into account during further concept development. Firstly, the topic of failure within the educational framework requires careful consideration. Secondly, the teachers' perspective highlighted the module's value, emphasizing on the practicality of exercises, tips, and tools. Fostering a sense of urgency and facilitating knowledge exchange among teachers are crucial for successful integration. And finally it is important to keep the roadmap simple to make it possible to practically implement this.



Module



Assignments

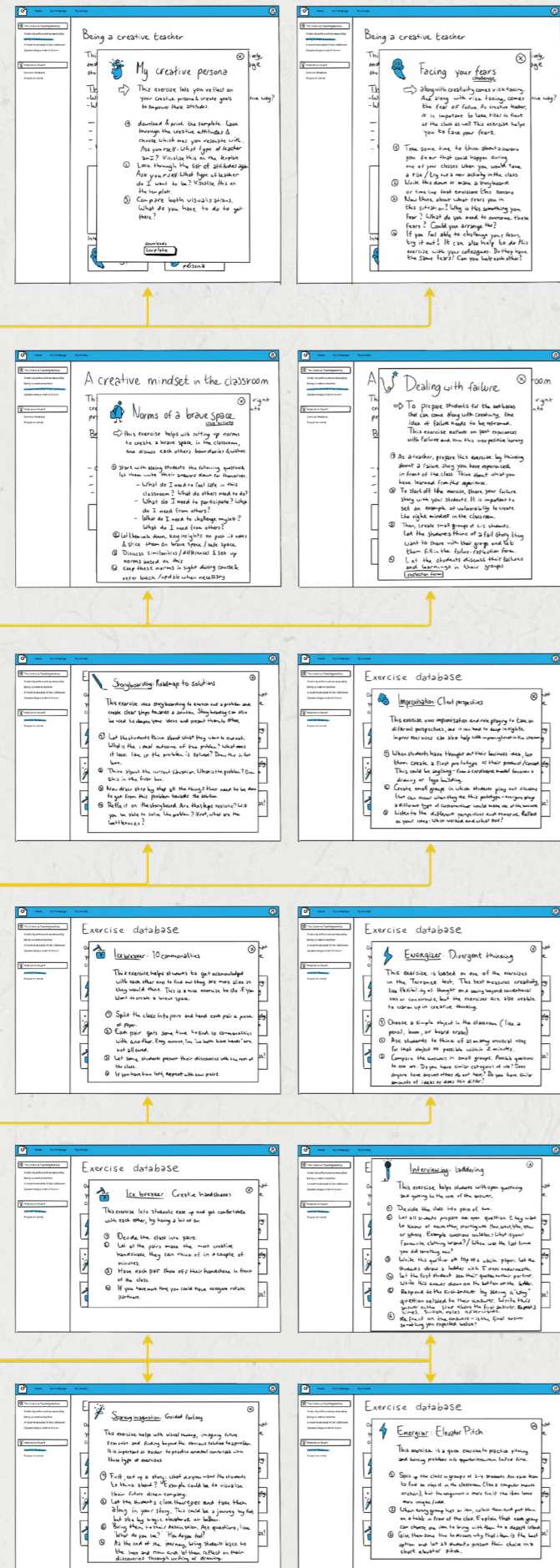


Figure 44: Low-fidelity prototype concept 'The Creative Teaching Module'

5.2.4. Assignment testing

Besides evaluating the prototype, the assignment that focused on dealing with failure was tested with students of the minor Connected Creativity (n=24; Figure 45 and 46). The assignment 'Failure stories' has the goal to let students realise that they are not alone within failure, and that everyone fails. Besides this, the assignment aims to translate the negative feelings that appear when you think about failure into positive learnings.

The goal of this assignment testing session is divided in 4 research questions:

- Is the assignment clear according to the students and do the steps and questions make sense?
- What did the students learn from the assignment?
- Is the desired goal of the assignment achieved?
- Would the students feel comfortable about sharing their stories with others?

The results were captured through an short questionnaire with several open-ended questions and several Likert-scale questions. Note taking was used during the execution of the assignment, and after the session, the assignments were collected. Some of the filled-in assignments and the answers on the questionnaire can be found in Appendix Q.

Results

Clarity of the assignment

During execution of the assignment, it became clear that the research setup did not fully meet the target group. The assignment was not adjusted to English, even though some international students were present at the session. This led to a lot of questions and some misunderstandings within the assignments. Most of the students (n=12) answered that they did understand the assignment. Four students answered that they understood the assignment after translating it to English. Finally, eight students said that they had trouble with understanding the assignment partially / completely.

Learnings from the assignment

The students differ in their answers when asked about their learnings from the assignment. Most students give general answers like "reflecting on

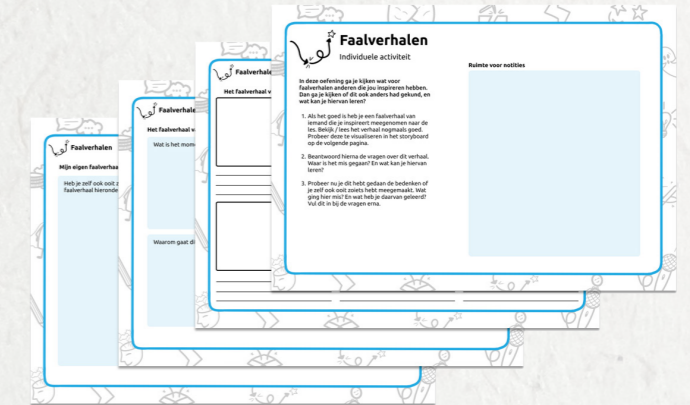


Figure 45: the assignment "Failure stories"

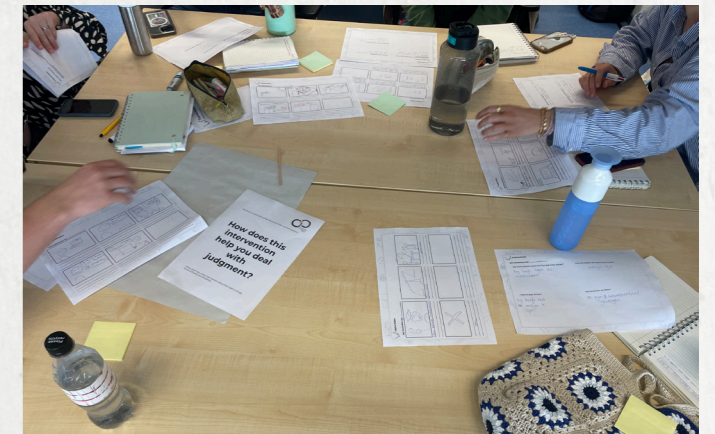


Figure 46: testing the assignment during the minor

failures' and 'not being afraid of failure'. Two answers are highlighted for discussion:

"Not very much, I have put a lot of effort into being aware of failure. I think maybe because of that, this smaller exercise didn't do that much for me."

This answer states that one student is already putting in effort to gain more awareness towards their own failure. An exercise like this is quite small and therefore does not necessarily have an effective learning for students that are already more developed in their open attitude towards failure. The assignment is designed for students that did not put this effort in yet, but the level of awareness towards this topic needs to be tested and evaluated with the targeted students and their teachers.

“To be more mindful of failure and changing the mindset toward: productive failure. Although I wasn’t really convinced by the video since I did not really see the productivity in this particular mistake”

According to this student, the chosen video did not convey the message towards productive failure. A takeaway from this is that it is important to choose a video / story that conveys this message, and relates to the goal of the assignment.

Achieving the goal of the assignment

The goal of the assignment is to let students realise that everyone fails. It aims to translate the negative feelings that appear when you think about failure into positive learnings.

Students answered three questions that tested if this goal was achieved, using a 5 point Likert scale (1=completely disagree; 5=completely agree). The answers ranged widely, with averages just below the neutral score. This means that for some students the assignments helped with their awareness towards failure from others and their comfort with their own failures, but for the majority of students the assignment did not lead to significant improvement.

Sharing failure stories

Most students are open to share their failure stories with other students, or within the classroom (n=8), or within small groups (n=12). Three students mention that they want to keep their stories rather for themselves. This shows that most students are open to talk about their failure stories, but in a safe setting. Students should not be pushed to share their stories if they do not want to, and it is also highly dependent on the level of trust within class environment. The decision to share stories is best judged by the teachers themselves, but is beneficial for the learning experience and achievement of the goals of the assignment.

Discussion

The decision to execute the assignment testing within this minor led to some limitations. Because of short preparation time, the assignment was written in Dutch, even though some students did not speak the Dutch language. This led to a lot of misunderstanding and less valuable results about the clarity of the assignments.

There was limited time to find an appropriate video that was concise and about a relevant failure story, which is needed at the beginning of the assignment. During the search for video’s, it became apparent that it is quite difficult to find a relevant video, which is something that needs to be taken into consideration during the further development of the exercise.

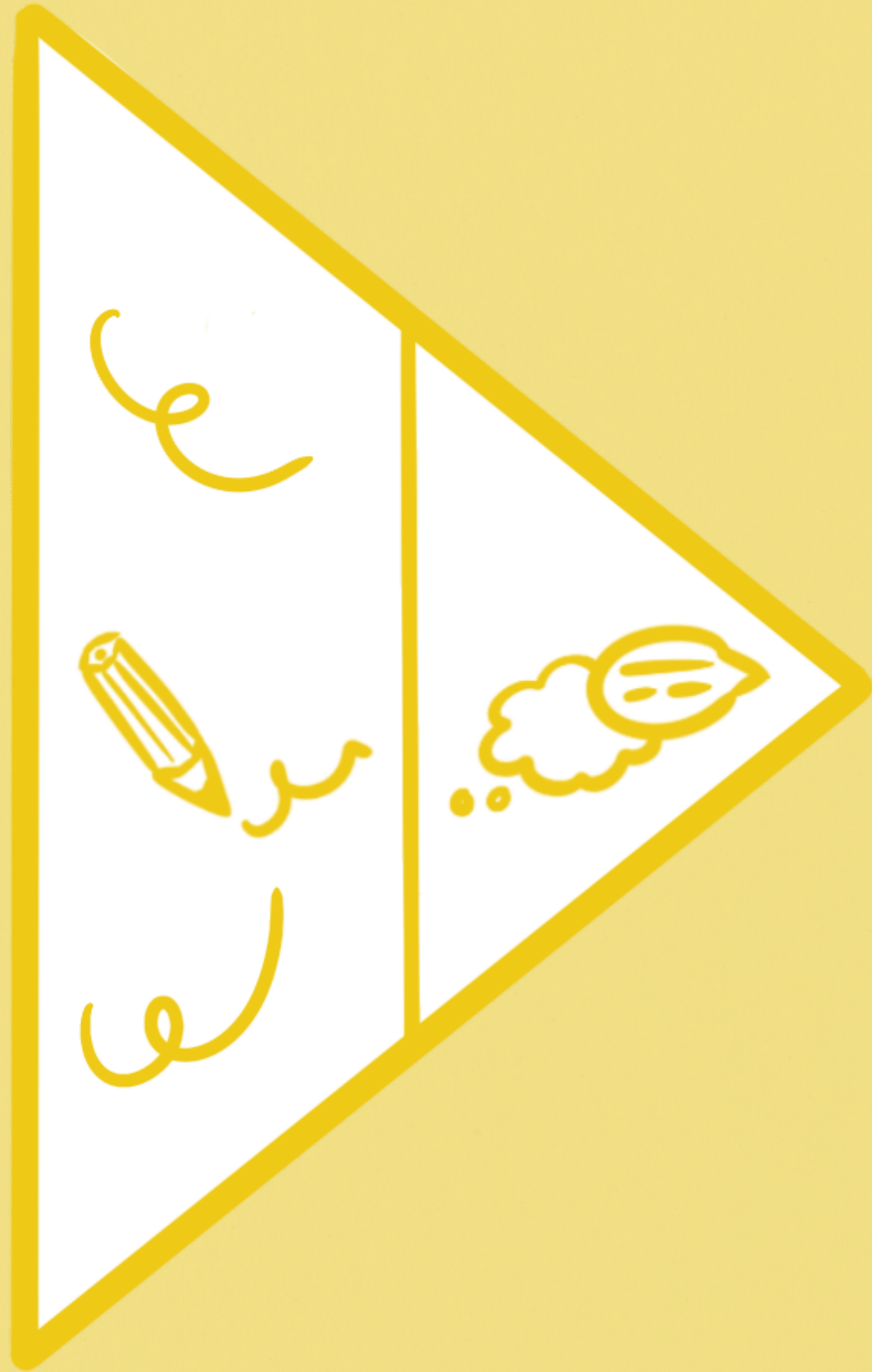
Finally, the students are already quite familiar with creativity, and therefore also a bit more acknowledged with talking about failure and dealing with failure. This could have been the cause why the goal of the assignment was not fully met. A deliberate choice was made for the assignment to be introductory, so it will need to be further tested if the goals are achieved with the specific target group.

Conclusion

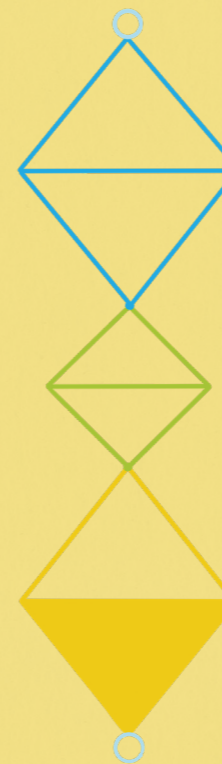
Testing the “Failure stories” assignment in the Connected Creativity minor revealed insights into its effectiveness. The assignment aims to promote positive learning, and encourage the sharing of failure stories. Language barriers and a lack of introduction affected clarity, emphasizing the need for clear communication. The wording of the questions was revisited, to create better clarity. This was also done for the other two assignments. Most students are open to share their failure stories, as long as they feel safe. The teacher manual was updated to mention the importance of sharing the stories, but also creating a safe space for students to feel comfortable about sharing these. The goal and learnings from the assignment were not fully achieved, but the students also appeared to be too advanced in their awareness about personal failure, so this needs to be tested with less acknowledged students. The introduction video was revised towards conveying the right message about failure, and the teacher manual was updated accordingly. Based on the insights gathered from this evaluation session, the other assignments were revisited and updated as well.

Key take-aways

- Failure is a very delicate and sensitive topic, that needs to be handled with care.
- Practical elements within the design make creativity tangible for the teachers
- To successfully integrate the module and involve teachers, it is important to implement a sense of urgency or goal.
- If students feel comfortable within an education setting, they are open to share stories. This is beneficial for reaching the learning goals.



6 Finalize



The final design of the roadmap and creative teaching module are presented and explained together with some important design considerations.

6.1. The final products

- 6.1.1. Design construction
- 6.1.2. The roadmap
- 6.1.3. The creative teaching module
- 6.1.4. Decision making process

6.2. Validation

- 6.2.1. Assignment validation
- 6.2.2. Validation interviews

6.1. The final products

This chapter explains the structure of the design, and presents the roadmap and creative teaching module and their underlying topics and ideas. After discussing the design, the chapter substantiates some important considerations and decisions.



6.1.1. Design construction

The final outcome exists out of two parts: the Roadmap, and the Creative Teaching Module, which is an elaboration of the first horizon of the roadmap. Figure 47 shows an overview of the developed products.

Two roadmaps are created, one strategic and one tactical. The strategic roadmap shows the three horizons and the goals of each horizon, leading towards the final vision. The tactical roadmap elaborates on these horizons with concrete steps and activities that need to be performed in order to reach the goals.

The Creative Teaching Module is part of the first horizon, and is divided into two sections; 'The creative studio' and 'Get inspired', which again are divided into several topics that support teachers in getting acquired with implementing creativity in their classrooms. Some topics are supported with exercises, that get teachers and students familiarized and started with creativity and support in developing an open mindset.

The roadmaps and Creative Teaching Module are extensively explained in the following sections (6.1.2. and 6.1.3.).

6.1.2. The roadmap

The roadmap exists of two parts: a strategic and a tactical roadmap. The tactical roadmap elaborates on the horizons with steps that need to be taken to reach these goals (Figure 48). The steps are divided in key activities, key features (based on the design guidelines), expectations from the stakeholders and the creative attitudes that need to be adopted. The strategic roadmap functions as an attractive and motivating overview of the steps towards the final vision (Figure 49). This can be used by GoFuture as visual that concisely tells the story of what GoFuture wants to achieve towards their stakeholders, like collaborating schools and teachers (Simonse, 2018). The horizons are explained in the following section.

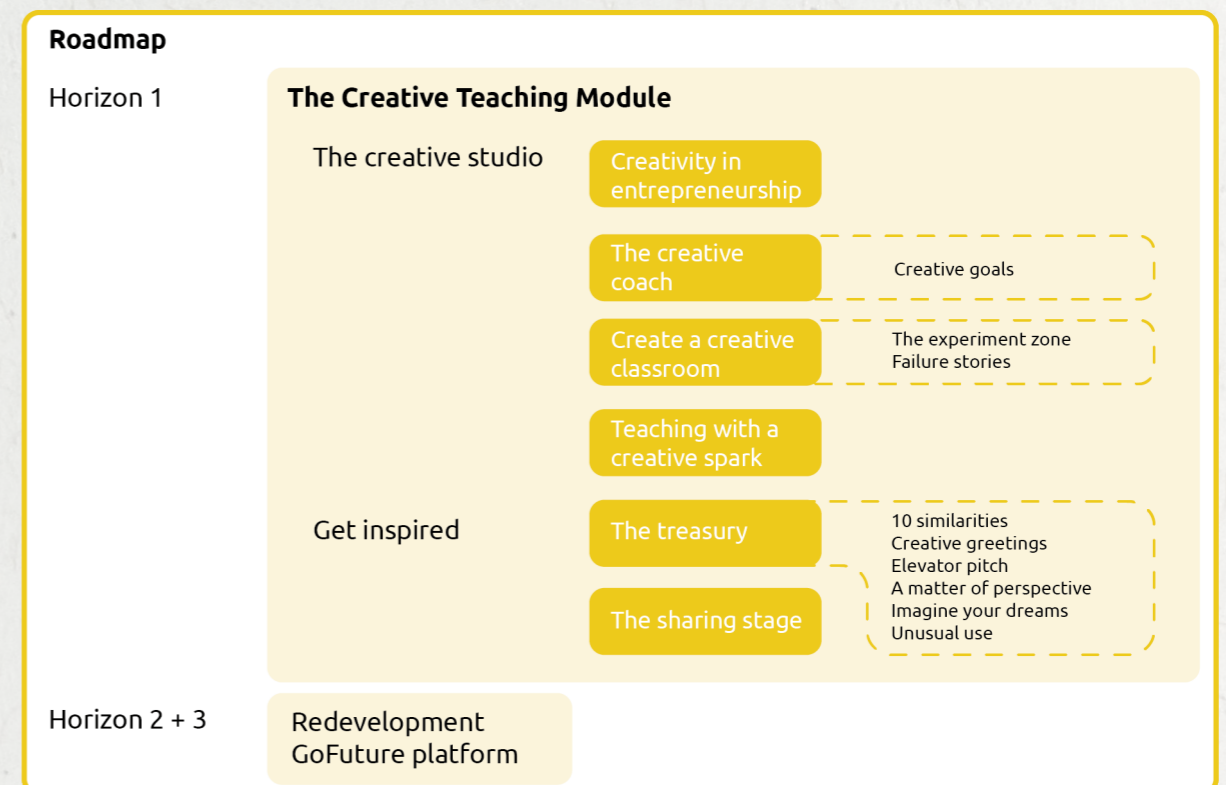
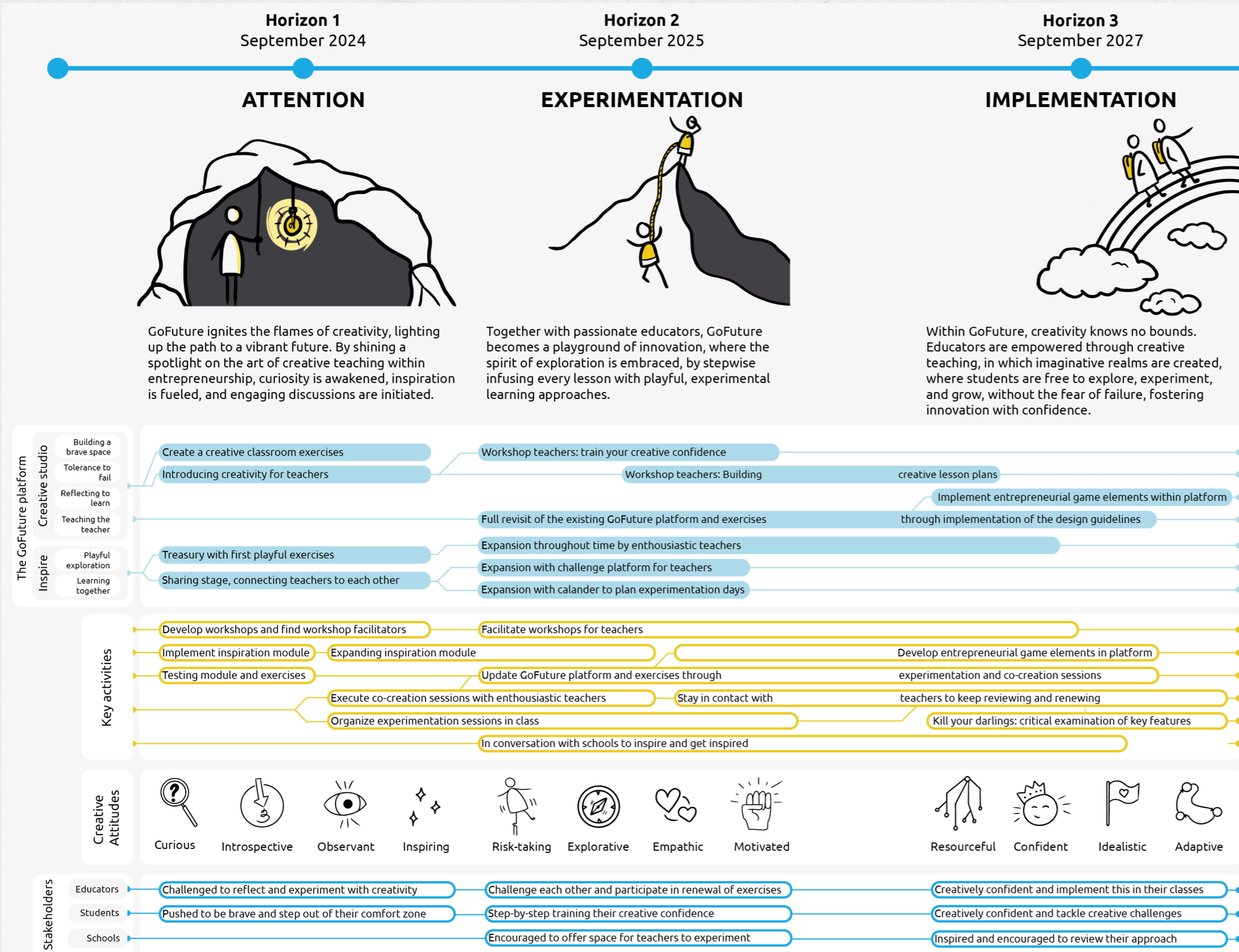


Figure 47: Overview of the developed elements



VISION

GoFuture seamlessly infuses creativity into every aspect of entrepreneurial education, empowering students and educators with the capabilities to excel in a world of rapid change, while lighting the path towards an innovative and forward-thinking education model. Together sculpting a brighter future, filled with limitless possibilities and boundless creativity.

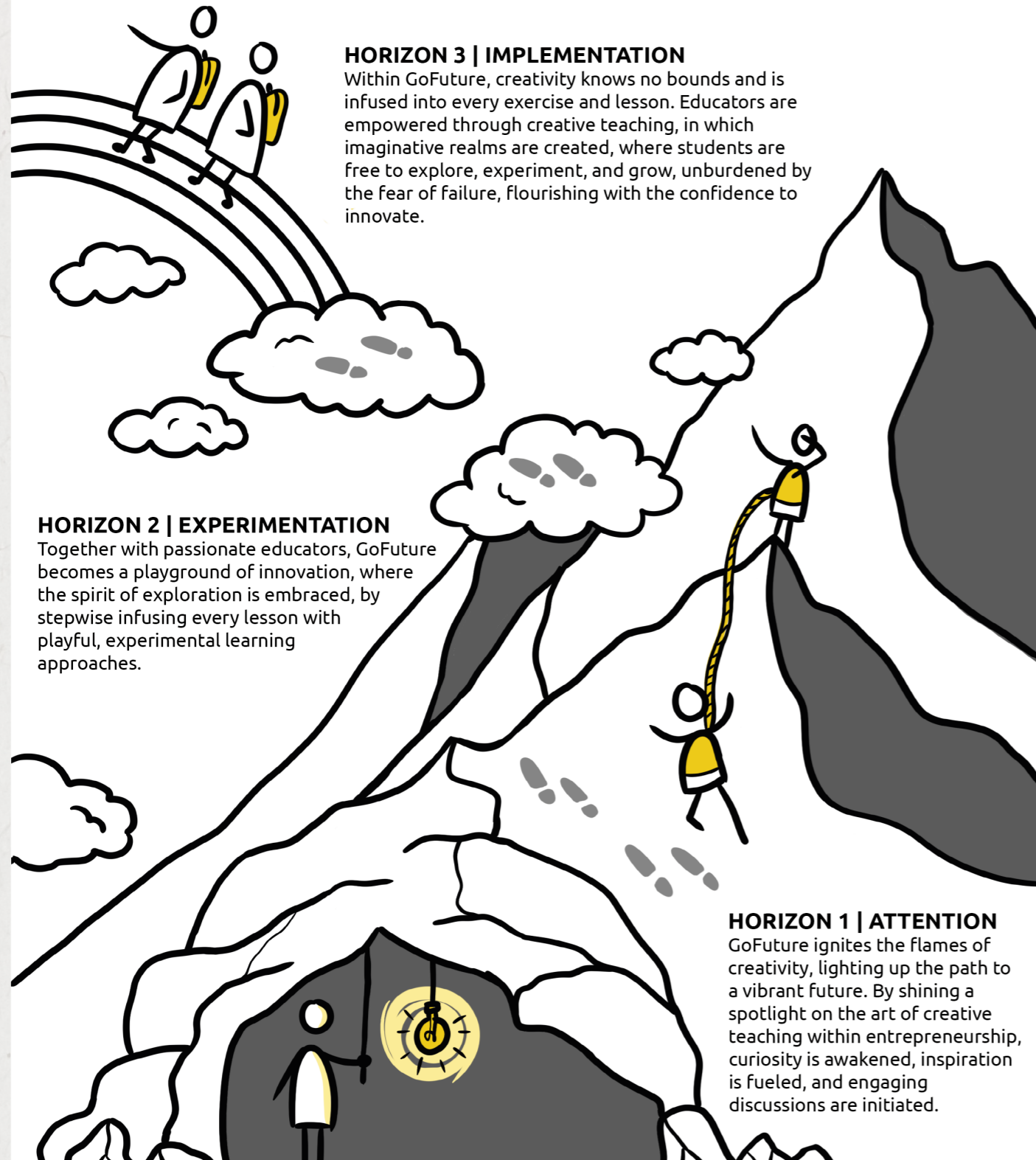



Tactical Roadmap

Figure 48: Tactical Roadmap



Strategic Roadmap



HORIZON 3 | IMPLEMENTATION

Within GoFuture, creativity knows no bounds and is infused into every exercise and lesson. Educators are empowered through creative teaching, in which imaginative realms are created, where students are free to explore, experiment, and grow, unburdened by the fear of failure, flourishing with the confidence to innovate.

HORIZON 2 | EXPERIMENTATION

Together with passionate educators, GoFuture becomes a playground of innovation, where the spirit of exploration is embraced, by stepwise infusing every lesson with playful, experimental learning approaches.

HORIZON 1 | ATTENTION

GoFuture ignites the flames of creativity, lighting up the path to a vibrant future. By shining a spotlight on the art of creative teaching within entrepreneurship, curiosity is awakened, inspiration is fueled, and engaging discussions are initiated.

VISION | INSPIRATION

GoFuture seamlessly infuses creativity into every aspect of entrepreneurial education, empowering students and educators with the capabilities to excel in a world of rapid change, while lighting the path towards an innovative and forward-thinking education model. Together sculpting a brighter future, filled with limitless possibilities and boundless creativity.



Horizon 1: Attention
September 2024

GoFuture ignites the flames of creativity, lighting up the path to a vibrant future. By shining a spotlight on the art of creative teaching within entrepreneurship, curiosity is awakened, inspiration is fueled, and engaging discussions are initiated.



Figure 50: Horizon 1 - Attention

Key features (design guidelines)

The first horizon introduces the creative teaching module. This module is extensively explained in the following section (6.1.3.) at page 102. The module introduces creativity towards teachers, and contains some exercises to create the right mindset within the classroom. It also contains a place for teachers to get inspired by creative exercises and share their insights with each other.

Key activities

The first step towards creating attention is the implementation of the creative teaching module. Before this can be fully implemented, it will need to be tested extensively together with teachers and students that make use of the GoFuture platform. As addition to the teaching module, it is recommended to set up workshops for the teachers to get more practical and active training in creative teaching. These workshops will need to be developed and workshop facilitators need to be found.

Stakeholders

The stakeholders that are involved in this horizon are the educators and students. Educators are challenged to reflect on their own creativity and experiment with creativity, by making use of the teaching module and trying out new creative exercises. Students are pushed to be brave and step outside of their comfort zone, by first creating a space in which they feel free to act brave, and then by actively engaging in the exercises provided by the teacher.

Creative attitudes

The creative attitudes that GoFuture needs to adopt in this stage are being curious, introspective, observant and inspiring. They have to be curious about the feedback that students and teachers give while testing the module, observant of what happens and be introspective about the work they have done to find out what needs to be improved. Finally they should be inspiring, by providing inspiration to the teachers and by conveying their ideas with enthusiasm.



Horizon 2: Experimentation September 2025

Together with passionate educators, GoFuture becomes a playground of innovation, where the spirit of exploration is embraced, by stepwise infusing every lesson with playful, experimental learning approaches.

Key features (design guidelines)

The workshops developed in horizon 1 are now ready to be given. Interesting themes for these workshops are 'train your creative confidence', in which teachers will build creative confidence through participating in several creative exercises, and reflecting on this. The exercises can also be used as inspiration for the teachers in training creative confidence within their students. Second workshop could be focussed on 'building creative lesson plans', in which teachers already have basic knowledge about creativity and build some creative confidence, but need some assistance in how to translate this into creative lesson plans. The treasury and sharing stage from the creative teaching module will be expanded throughout time, by adding new creative exercises, and implementing a challenge platform for teachers and a calendar to plan experimentation days. The challenge platform will help teachers to motivate each other in taking risks and trying out new things. The calendar can be used by GoFuture to set up experimentation days to try out their ideas and new exercises, but also by teachers among each other to plan days in which they together can try out new things, or for example switch classes to practice with new tentative lesson plans.

Key activities

In this horizon, the first step towards completely updating and reinventing the entrepreneurship education module of GoFuture will be placed. By executing co-creation sessions and experimentation days with teachers, GoFuture adopts an explorative attitude and tries out ideas through experimentation. Through its creative approach in redeveloping the platform and its' exercises, GoFuture also takes on an exemplary role for the teachers on how to approach innovation within a company. GoFuture uses their insights and enthusiasm to start up the conversation with school boards that

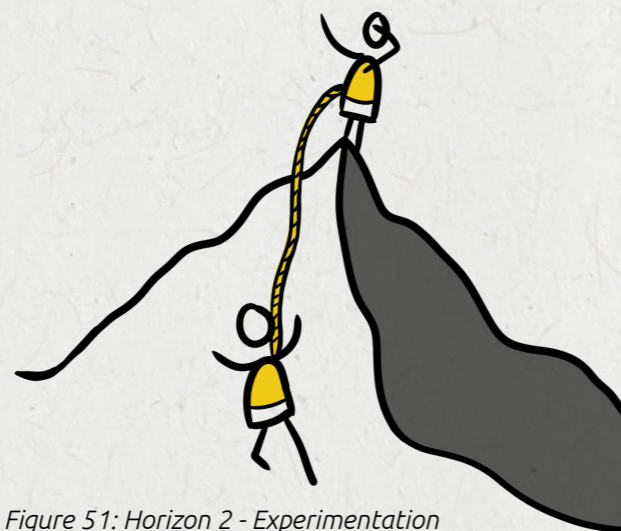


Figure 51: Horizon 2 - Experimentation

work with GoFuture, to create the freedom for the teachers to participate in the co-creation and experimentation sessions and to demonstrate the importance of creativity in students.

Stakeholders

The teachers are of great importance in this horizon, because their input is needed to create exercises that relate to the students and which are valuable and usable. The first enthusiastic teachers are expected to set an example to other, more traditional teachers, by showing the possibilities and challenging them. Students will come into contact with creative exercises and lessons, and will slowly build up creative confidence through practice. GoFuture will get in contact with schools to encourage them to offer space and time for teachers to participate in co-creation sessions and experiment.

Creative attitudes

The attitude of GoFuture in this horizon needs to be: Risk-taking, explorative, empathic and motivated. In this horizon, GoFuture works on innovating their platform, for which they need to have a creative mindset themselves. In this mindset, they are open to take risks by trying out new exercises together with teachers and explore opportunities and ideas. They are motivated to work towards their goal, and closely work together with teachers and students, for which they need to listen to their feedback with an open mind and empathy.

Horizon 3: Implementation September 2027

Within GoFuture, creativity knows no bounds and is infused into every exercise and lesson. Educators are empowered through creative teaching, in which imaginative realms are created, where students are free to explore, experiment, and grow, unburdened by the fear of failure, flourishing with the confidence to innovate.

Key features (design guidelines)

The final exercises will be renewed and revisited within the GoFuture platform. Besides renewing the exercises, GoFuture revisits their platform setup, by exploring the opportunities of entrepreneurial game elements, like the use of simulation games. The context of the digital learning environment is expanded and further explored, in combination with real life classroom assignments.

Key activities

The entrepreneurial game elements will need to be further explored and developed, together with updating the general GoFuture platform and its exercises. Contact with the teachers is kept warm, to stay updated on their feedback and keep reviewing and renewing. If the development is complete, the key features that have been developed over time will be critically examined, and irrelevant or unused features will be removed.

Stakeholders

Over time, teachers have become creatively confident, and creativity is implemented within each lesson. Students know how to approach creative challenges and are confident to tackle these. Schools are inspired by the results and feedback, and are encouraged to review their approach within other courses as well.



Figure 52: Horizon 3 - Implementation

Creative attitudes

GoFuture has become resourceful, confident, idealistic and adaptive within this horizon. The data and insights they have gathered are used and implemented according to their goals. They are (creatively) confident as well, and are proud of their results and achieved goals. Even though these goals are reached, they remain adaptive when new input is given and pay attention to changes and occurring needs. They start to dream bigger, and become idealistic in their beliefs, envisioning to become an example in how creative education can be achieved.

Future vision

"GoFuture seamlessly infuses creativity into every aspect of entrepreneurial education, empowering students and educators with the capabilities to excel in a world of rapid change, while lighting the path towards an innovative and forward-thinking education model. Together sculpting a brighter future, filled with limitless possibilities and boundless creativity."

The vision of GoFuture is to implement creativity throughout their whole education model, and become an inspiration for education in general, on how creative teaching can be achieved. Their insights and knowledge can be used to also help other fields of education in achieving this.

6.1.3. The creative teaching module

The creative teaching module exists out of two sections, namely the creative studio and get inspired, which again exist out of several topics and assignments. The module is written in Dutch, because it is developed for Dutch teachers and students. The main focus for designing was on defining the content, its structure and developing the assignments. The content is created through connecting it back to the design guidelines (section 4.2.2.). The layout of the current GoFuture platform was used as a baseline for the visual design of the platform, but is adjusted to my personal visualisation style. This decision was made to make the module easily implementable within the current platform.

The creative studio

The creative studio is the first section within the creative teaching module. It is directed towards teachers and its goal is to build a foundation for teachers to understand the meaning of creativity and what it entails to be a creative teacher and to facilitate a creative classroom. From the design guidelines, the focus is on 'teaching the teacher', which highlights the importance of having a teacher in front of the classroom that is acknowledged with creativity and is able to handle the emotional consequences of taking risks and dealing with failure. Within the section, several topics are included, which all have a specific goal and tap into different design guidelines.

Creativity in entrepreneurship

(Creativiteit in ondernemen)

The first topic is an introduction towards creativity in entrepreneurship. It discusses the meaning of creativity, and what this means within the context of entrepreneurship and entrepreneurial education. It contains mostly theoretical information, in the shape of text and video's, and is derived from the design guideline 'teaching the teacher'. This guideline mentions the importance of involving the teacher in the creative teaching approach, and mentioning the importance of creativity in entrepreneurial education.

Access the interactive prototype

Link: <https://www.figma.com/proto/0ANwwLe0GndIQSAKdeHugc/De-creatieve-studio?type=design&node-id=7-34&t=Z6Ez8YmqtfNEdPv6-1&scaling=contain&page-id=0%3A1&starting-point-node-id=7%3A34&mode=design>



Password: PrototypeGoFuture!

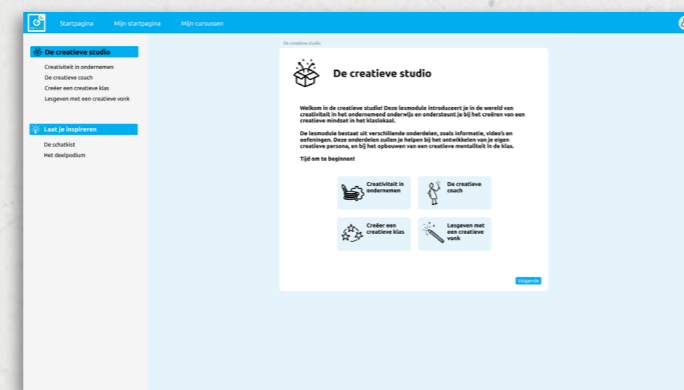


Figure 53: The creative studio

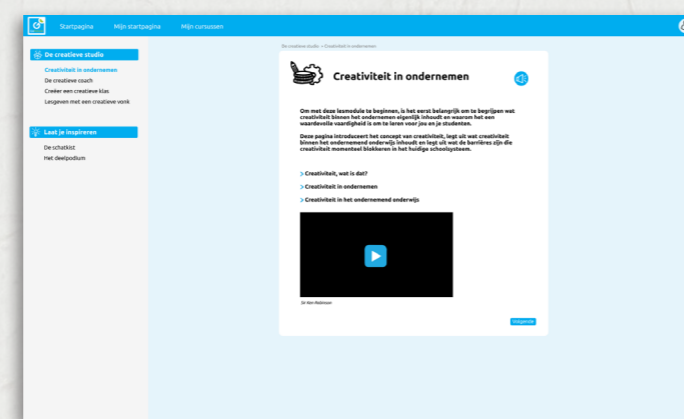


Figure 54: Creativity in entrepreneurship

The creative coach

(De creatieve coach)

The creative coach focusses on the role of the teacher within creative lessons, in which exploration and risk-taking is encouraged. It explains what it entails to switch from a 'teacher' role towards a 'coaching' role, and lets teachers think about their personal creativity and set creative goals within a reflection exercise. The topic is based upon 'teaching the teacher' and 'reflecting to learn', which mention the importance of the development of creativity also within teachers, and the importance of understanding their behaviour and attitudes through reflecting.

Create a creative classroom

(Creër een creatieve klas)

The topic 'create a creative classroom' focusses on the mindset that is needed in the classroom for students to feel free to explore and take risks, based on the design guideline 'building a brave space'. Besides this, it explains the importance of translating failure into learnings, based on the guideline 'tolerance to fail'. These subjects are further explored within two in-class exercises.

Teaching with a creative spark

(Lesgeven met een creatieve vonk)

Teaching with a creative spark highlights some implementable tips that teachers can use when they apply creative teaching within the classroom. This gives them concrete knowledge that assists them in setting up creative lessons.

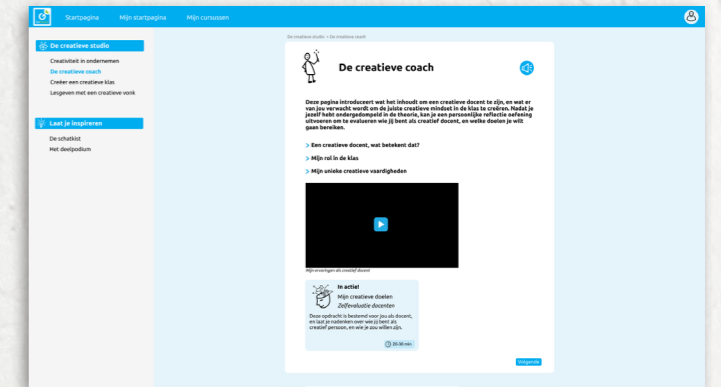


Figure 55: The creative coach

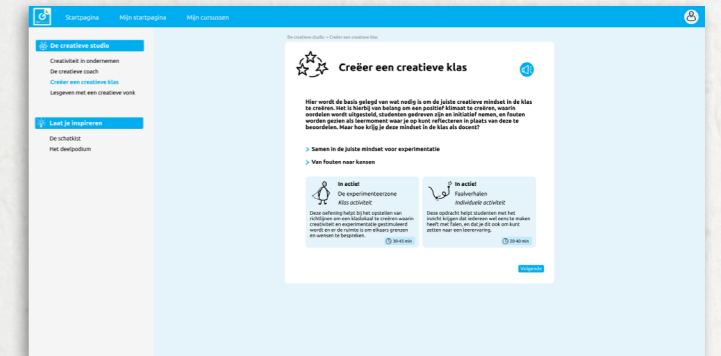


Figure 56: Create a creative classroom

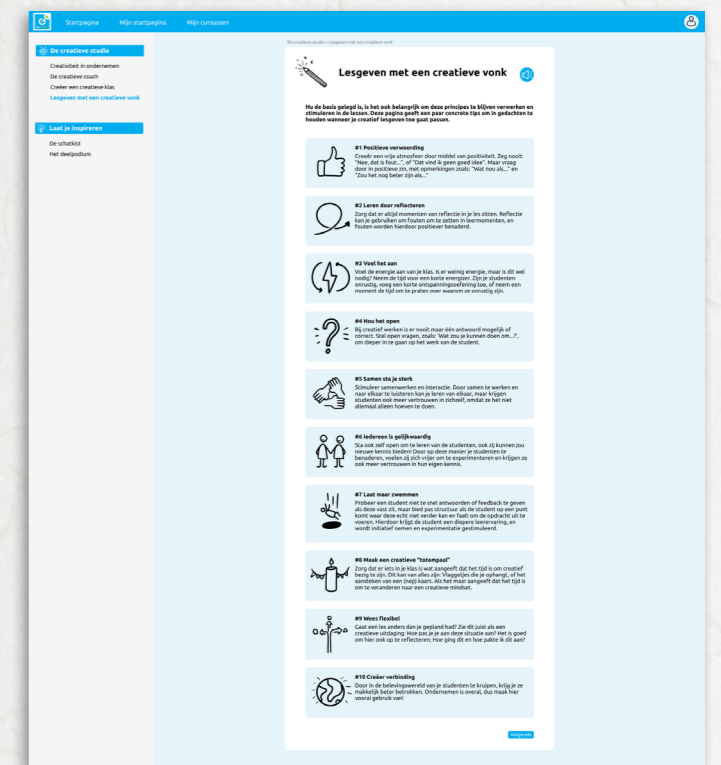


Figure 57: Teaching with a creative spark



Get inspired

(Laat je inspireren)

Get inspired is the second section of the creative teaching module. The main goal of this module is to inspire teachers, but also encourage them to share, learn from each other, and playfully explore new exercises and challenges. The section exists of a treasury, filled with inspirational and easily implementable exercises, and a sharing stage in which teachers are encouraged to share their thoughts and insights. The main goal of this section is 'learning together'. If teachers are encouraged by other teachers to try out new things, and learn about other experiences, they will be encouraged to do so and take risks.

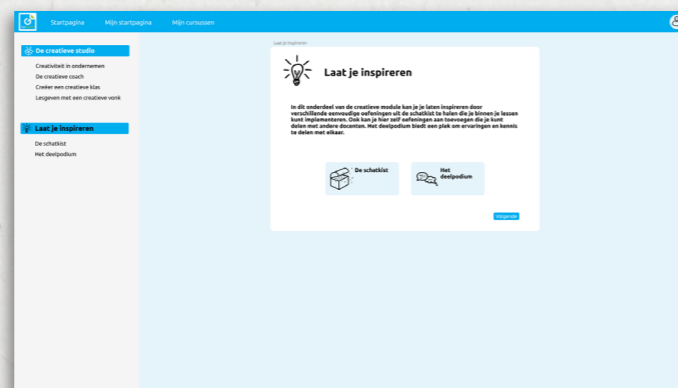


Figure 58: Get inspired

The treasury

(De schatkist)

The treasury exists out of several easily implementable and small exercises that all focus on specific goals that encourage creative behaviour. The treasury will be expanded over time, through new input from GoFuture and teachers themselves. The page contains a button on which teachers can share exercises they tried out themselves within the classroom. All the exercises are playful and most exercises promote interaction and collaboration.

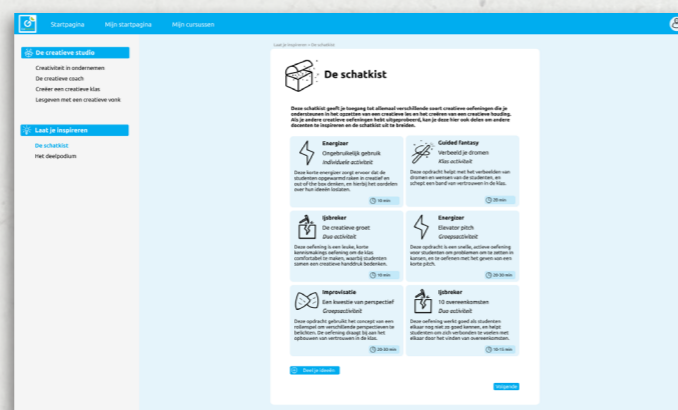


Figure 59: The treasury

The sharing stage

(Het deelpodium)

The sharing stage is a platform for the teachers to share insights, ideas and knowledge with other teachers. Over time, the sharing stage will be extended with a calendar to plan experimentation days with other teachers and a challenge button to challenge other teachers to try out exercises or new activities within their lessons.

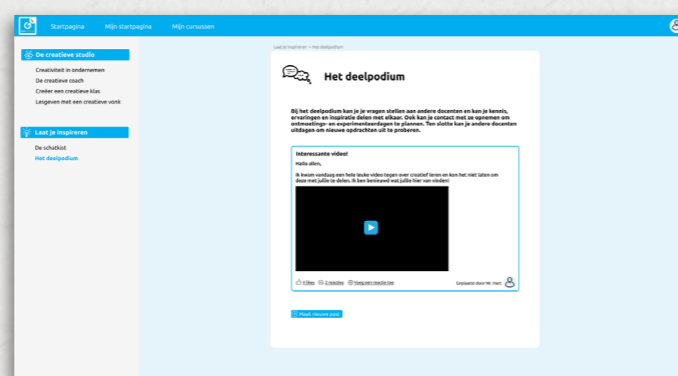


Figure 60: The sharing stage

The assignments

Three main assignments were created which are part of the creative studio. The assignments focus on creating creative goals for teachers, creating the freedom to become part of a brave space and translating past failures into positive learnings. The assignments all consist out of worksheets, which can be printed and filled in on paper, and a teacher manual. Besides these assignments, several exercises have been created as part of the treasury. These exercises are derived from existing exercises and translated to the context of the platform. The exercises are dynamic and only contain a teacher manual.

My creative goals

(Mijn creatieve doelen)

Part of topic: the creative coach

Within the topic of 'the creative coach', a reflection exercise was created for the teachers. The exercise first lets teachers explore their creative attitudes and then translate their insights within a creative persona by answering some guiding questions. The teacher is then asked to set creative goals, based on their insights in the first exercises, and elaborate on one of these goals by creating a plan towards achieving this goal.

The goal of the assignment is to make teachers aware of their creative abilities, and encourage them to reflect on their creativity and needs. By assisting them in defining their personal creative goals, they will be more motivated towards getting started with implementing and trying out these exercises within the classroom (Rae & Carswell, 2000).

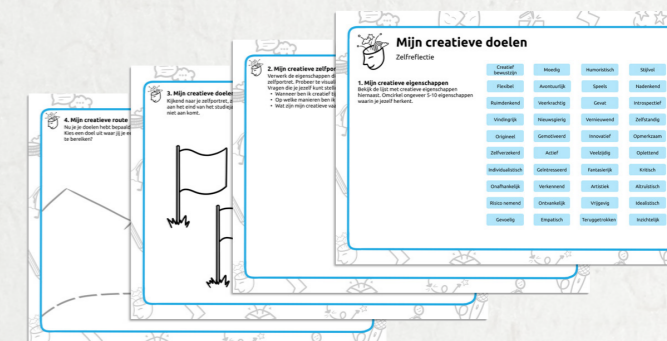


Figure 61: My creative goals

Teaching the teacher

Reflection to learn

The experiment zone

(De experimenteerzone)

Part of topic: Create a creative classroom

The experiment zone is based on the findings and insights on building a brave space. The assignment starts with questions that encourage students to think about the meaning of creative challenges within the lessons of GoFuture. It then lets students reflect on what they need to engage in these creative challenges – from others, but also what they can contribute themselves. The insights they write down will be anonymously collected and discussed within the classroom. The teacher clusters the insights together with the students and translate these into guidelines that they need to



Figure 62: The experiment zone

Building a brave space

live up to. The goal of the assignment is to encourage students to think about their needs within the classroom. By jointly setting up the guidelines, students will easier listen to this 'code of conduct', as they were part of the creation themselves (Brown & Guillen, 2022). For the teacher, it is important to keep referring back to these guidelines when needed, and to make sure everyone is comfortable with them and with the process of creating them.

Failure stories (Faalverhalen)

Part of topic: Create a creative classroom

The exercise about failures stories taps into the goal of building tolerance to fail, and translating these failures into opportunities to learn through reflecting on them. The exercise is divided in two parts: learning from a failure story from someone else, and reflecting on a personal failure story.

The teacher can choose to show a short video of a failure story online, or let students interview closely related people, like their father, aunt or best friend about one of their failure stories, also in relation to entrepreneurship. The students translate this story into a storyboard, and reflect on their insights and learnings. After that, they are encouraged to reflect on their own personal failure story and translate this into positive learnings. If the teacher thinks the class is comfortable with sharing their stories in class, this could be an extra insightful activity, but this needs to be handled with care.

The goal of the exercise is to plant the first seed in students' mind that it is okay to fail, that everyone goes through this, and that you can also learn a lot from failure. Within the conversations in the evaluation interviews, including with an expert in education about failure (section 5.2.3.), it became clear how fragile and complicated this topic is, and that it should be handled with care. To really shift the mindset towards a culture in which it is okay to fail, a lot more needs to be done.

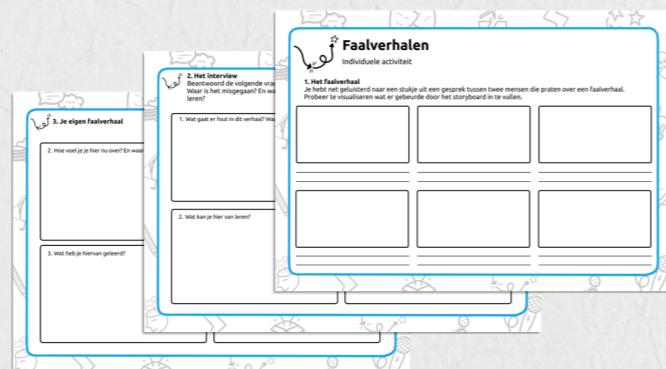
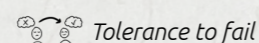


Figure 63: Failure stories



Treasury exercises (De schatkist oefeningen)

Part of topic: the treasury

The treasury currently exists out of six easily implementable exercises, that range from energizers and ice breakers to an elevator pitch and guided fantasy. The assignments are in-class activities and consist of a teacher manual and an explanation about the goal of the exercise. The exercises are chosen because they are short, and can be implemented within the classes wherever the teacher wants to implement them, standing alone of the topic of the class but can be adjusted towards this context. They are derived from existing exercises that already have been tested, and adjusted slightly to the context and level of the students. These exercises are used as inspiration for GoFuture, on what this treasury could become, but are not the main focus of the design.

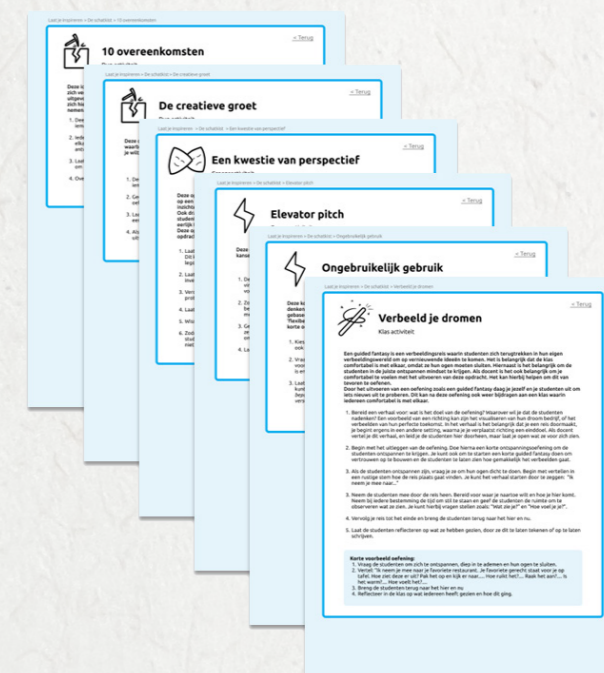
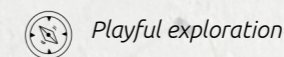
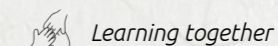


Figure 64: Treasury exercises



6.1.4. Decision making process

A lot of decisions have been made during the development of the design. To make these decisions, the design requirements discussed in section 3.2.2., and the feasibility, viability and desirability of the design were kept in mind. Some important decisions are discussed below, considering the paradoxes discussed in section 3.1.3.

Teachers' willingness to try new things vs. lack of time

The willingness of teachers in paradox with the lack of time was a difficult balance to find within my design. The consideration to choose for a digital education module was made because of its' flexibility and feasibility. The module is easily implementable in the current platform of GoFuture, and therefore is not dependent on a lot of new resources from the company. But, a digital education module is not the most engaging, and it is highly possible that teachers do not feel the need to invest their limited time into this and prioritize other obligations. Within the evaluation of the concept prototype with teachers, this was discussed. They mentioned that once you have a clear goal, and motivation to work on a subject,

teachers would be enthusiastic enough to invest their time, and the idea of the concept is desirable. The creative facilitation session was used to generate ideas on how to motivate the teachers. Based on these insights, several ideas were implemented.

The module was designed in a way that it does not contain a lot of text, and uses video's to make the information more engaging. Besides this, an audio button was implemented on all of the pages, to make it easier to listen to the information on the road or during other tasks. The personal reflection exercise for teachers was implemented to support them in finding their goal. The 'challenge' button that is suggested within the second horizon of the roadmap could motivate teachers also to get more engaged, and helps in engaging colleagues along the road.

In the module, the information is limited to the basics, and it is highly recommended for GoFuture to also implement other activities, like the workshops suggested in the roadmap, to engage the teachers more.

The needed freedom vs. lack of support of the schools

Within the teaching module, some exercises and information is given that support the development of the right mindset in the classroom and which create the needed freedom for creativity. But, the school structure still puts pressure on the teachers and students and does not provide the freedom to fully adapt to this way of teaching. Within the second and third horizon, it is recommended that GoFuture initiates the conversation with schools, to create the freedom for the teachers to participate in the co-creation and experimentation sessions and to demonstrate the importance of creativity in students. Once GoFutures' vision is reached, they can take on an exemplary role, and inspire schools and other education providers to reconsider their way of teaching. By initiating the change and adapting towards innovative and creative teaching within entrepreneurial education, GoFuture places themselves in a viable and valuable position.

Becoming creatively confident vs. learning the basics

The design of the teaching module creates the first step towards awareness and creative confidence, but only after completely re-evaluating the GoFuture platform, it is possible for students and teachers to develop actual creative confidence. The theory and designed assignments are focused on learning the basics, and set the ground on which creative confidence can be further developed. But also within the limited 1-2 hours of lessons each week, it will become difficult for students to actually practice their creative confidence. Together with schools and teachers, GoFuture would need to discuss the possibilities on developing this confidence also outside of the classroom, maybe in different classes, or at home.

Creative exploration vs. online learning

Within the design, it was chosen to implement the creative teaching module in the digital environment as well, even though this limits flexibility and exploration. The developed assignments need to be printed and executed physically, and encourage activities like visualisation. The assignments do provide some boundaries and drawings, but they are used as support and give a push to get started. Within the roadmap, it is suggested that GoFuture re-evaluates their current assignments, and implements more playful gamification elements within their platform, to encourage creative exploration also within the digital context.

Key take-aways

- The final design exists out of several elements: the roadmap and the creative teaching module.
- The module has been further developed by using the design guidelines proposed in chapter 4.2. The creative teaching module is build up in several topics and contains information, assignments and a sharing platform.
- The roadmap consists of four horizons. The first horizon is directed on awareness, of which the creative teaching module is the main focus. The final vision focusses on implementing creativity throughout the whole education platform.

6.2. Validation

The main assignments of the design are tested within an assignment testing session. The final design was discussed with a teacher and the client and evaluated on its' feasibility, viability and desirability.

Methods & Activities

Assignment validation

The three main assignments are tested in an assignment testing session with 5 participants.

Validation interviews

Two validation interviews were executed in which the design was discussed based on its' feasibility, desirability and viability.

6.2.1. Assignment validation

The three main assignments that are part of the creative studio were tested with 5 participants between the age of 20-30 years old. The participants differ from the targeted students in terms of education level, and are older. The differences were not a big problem, because the main goal of the assignment testing was to find out if the structure and questioning in the assignments was clear, if the assumed timing was correct and to see if the outcomes would be coherent with the goal of the assignments. The research questions that were used for this validation session were:

- What is the duration of the assignment?
- Is the assignment clear to follow?
- Are the goals of the assignment achieved?

The session took about 2 hours, and after each assignment the participants were asked to fill in a short questionnaire with several open questions and Likert-scale questions, to get feedback on the assignments. After all the assignments were completed, the assignments, ideas and feedback were also discussed among the participants, and recorded through voice recording and note taking. A complete overview of all the feedback and gathered data can be found in Appendix R.

Results

Assignment 'My creative goals'

Duration assignment: 15 - 20 minutes

Clarity

The assignment was mostly clear, but was described as difficult by the participants. They all understood what they had to do, but found it challenging to translate abstract information into visuals / concrete goals. They mentioned that the steps of the assignment did guide them in the process to get more concrete, and once they got started, the difficulty level was fine.

"Assignment 2 was challenging because you have to visualize abstract concepts, but it also helps with becoming concrete"

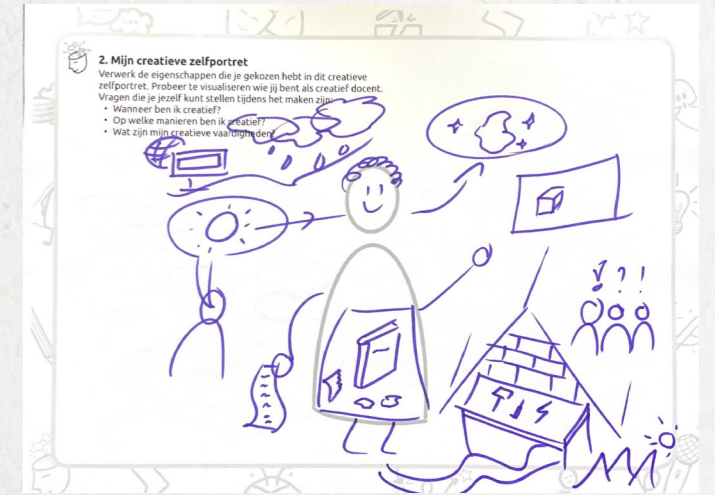


Figure 65: Assignment 'My creative goals' - creative self-portrait

Goals achieved

The goal of the assignment is to make teachers aware of their creative abilities, and encourage them to reflect on their creativity and needs. The assignment was rated as helpful towards creating and working out creative goals, with ratings of 4,0 on a scale of 5. The participants rated the question "This assignment made me think about my own creativity" with an average of 4,5 on a scale of 5, which means they agree / completely agree with the statement.

"The assignment forces you to set goals that really have value, not just 'learn to draw better', for example."

Assignment 'The experiment zone'

Duration assignment: 30 - 40 minutes

Clarity

The assignment was mostly clear, but because the participants were not familiar with GoFuture, the first question about which creative challenges they would think they would take on at GoFuture, was perceived as unclear. After a short additional explanation, the assignment became clear. One participant mentioned the importance of highlighting the anonymity of the assignment. Another participant mentioned that they thought it was difficult for them to decide on how specific they needed to be, but in the end this did not matter for the outcomes, everyone did it in a different way but together got to overlapping conclusions.



"I found the creative challenge quite broad, I found it difficult to know how specific I could be (or keeping it more general) in this regard. When you explained more about the context, I thought it was clearer!"

Goals achieved

The goal of the assignment is to encourage students to think about their needs within the classroom, and to create a brave space for students in which they feel free and courageous to take on creative challenges. The participants agree with the statement that the questions supported in thinking about their needs when taking on a creative challenge, with an average rating of 4,8 on a scale of 5. The created guidelines at the end of the assignment are perceived as helpful towards actively taking part in the group ($\mu=4,4$), take more risks within the classroom ($\mu=3,8$), and feel better about making mistakes ($\mu=4,4$). The participants did have some doubts about the implementation of the guidelines. They liked the structure of creating the guidelines together within the group, but it is up to the teacher to refer back to them and to guide the process well, about which they did have their doubts.

"It is difficult to determine the experiment zone, but partial solutions and discussion help with reflecting on this"

"I would first have to see in a class whether the guidelines are being adhered to. That depends on how it is handled. If it were implemented immediately it would help very well, but in a classroom I wonder about that."



Figure 67: Assignment 'Failure stories' - storyboard

Assignment 'Failure stories'

Duration assignment: 15 - 20 minutes

Clarity

Everyone thought the assignment was clear and easy to understand and follow. During testing a failure story that was mentioned within a podcast, was used as example story for the first few questions. The failure story was relatable to the participants, but did not have a connection with education / entrepreneurship, which made it less relevant for its context.

Goals achieved

The goal of the exercise is to plant the first seed in students' mind that it is okay to fail, that everyone goes through this, and that you can also learn a lot from failure. After the assignment, the participant felt somewhat more comfortable on average with their failure ($\mu=3,4$), somewhat more aware of others' failures ($\mu=3,6$) and somewhat more confident about sharing their story ($\mu=3,6$). They mention that the assignment would be more beneficial if students would share their stories / insights with others, but they also state that they would not be completely comfortable with sharing their own stories, or only in small groups.

"Everyone fails sometimes and that is completely normal. It sometimes makes the best stories!"

"I am really curious now to hear other people's stories. I prefer not to share my own, but I would do it if I got other stories in return."

Discussion

The goals of the assignments and the desired results were reached, but this would need to be extensively tested together with teachers and students that work with GoFuture as well, to draw factual conclusions. The age and education level of the participants can make a difference in how the assignments are perceived and understood, and how goals of the assignments are reached. It can be stated that the overall construction of the assignments is working as intended, but it would need some more in detail revision.

Conclusion

The assignments were all mostly understandable and doable, but could use some small adjustments in their wording and explanation. Some suggestions and ideas were discussed for improvement of the assignments, for example to think about the timing of the experiment zone assignment within a bigger classroom. These suggestions have been taken into account and considered within the design recommendations (section 7.3.2.).

6.2.2. Validation interviews

Two validation interviews were conducted, one with the client of GoFuture, and one with a teacher of MBO education. The interviews lasted around 45 minutes. First, the concept and roadmap were shortly shown and explained, after which the participants were interviewed by making use of semi-structured questioning. The interviews were conducted online, and video recording and transcribing was used to gather information. The interviews were used to test if the intended feasibility, viability and desirability of the design are achieved. The transcription of the interviews can be found in Appendix S.

Desirability

Desirability defines if the design solves the right problem of the customer and if the user experience is admirable from a human perspective (IDEO, 2012). The desirability of the concept was discussed with both the client and teacher, through asking several questions, like 'Do you think this module will help teachers with knowledge and support

about establishing the right creative attitude in the classroom?', 'Would you recommend this module to your colleagues? Why (not)?', and 'Is this assignment clear and suitable for you / your students?'. The desirability of the roadmap was discussed by asking questions like 'Do you think these steps will give teachers and students creative confidence?'

The design is perceived as helpful and logical, and the teacher mentions that there is a need for her to learn more about creative teaching. The exercises and different components of the design are helpful to get started with creative teaching, and she also sees the need for students to develop their creative skills, and that the assignments could exist in this. She does mention that she is triggered by the word 'failure stories', when discussing the assignment. The name of the assignment could be perceived too negatively, and it could become an issue quickly. Within the assignment about the experiment zone, she mentions that students have difficulty with reflecting on their work and needs. The assignment could be too conceptual. The roadmap is according to the client a good addition to the design, in which the needs of the students and teachers towards developing creative confidence are nicely balanced and discussed.

"I think it helps, because now I think we have to get quite a lot out of ourselves to create such a [creative] group and those groups have to come. I also think once you get into that flow [of creative teaching] that you just really enjoy doing it. I guess it just reinforces everything you do."
teacher MBO

"We also have to be practical. Improve the platform both when it comes to the assignments. And the reflection on the assignments as well as the behaviour of the teachers themselves. So I think those elements are all good here, nice balance."
client GoFuture

Feasibility

Feasibility defines if the design strengthens the business, and if it is achievable technologically (IDEO, 2012). The feasibility of the concept was mostly discussed with the client, through asking questions like 'Are the assignments usable within GoFuture lessons?' and 'How do you see the concept being processed within GoFuture?' The feasibility of

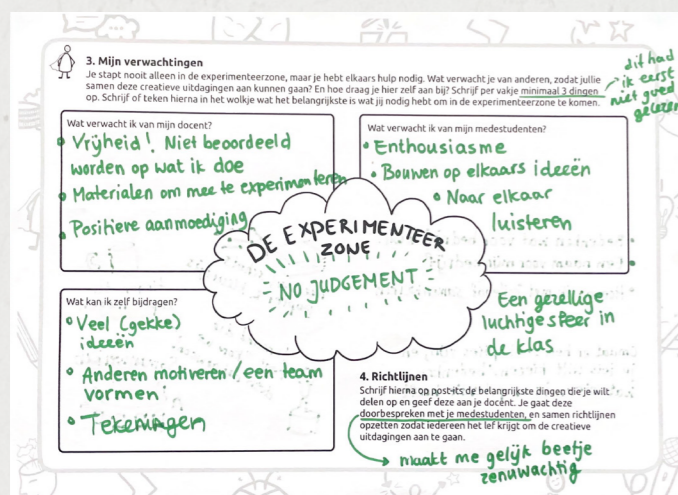


Figure 66: Assignment 'The experiment zone' - discussing expectations

the roadmap was discussed with both the teacher and the client, and questions like 'Do you think that teachers are willing to experiment with GoFuture after being introduced to creativity to further develop the platform?' and 'Do you think schools can offer teachers the space and time to work with creativity and experimentation?' were discussed.

The current design still needs to be translated into a more practical interpretation, according to the client. The base is good, but it would need some extra testing and practical revision before it can be implemented. The structure of the design is easily implementable within the current platform, and technologically feasible. Some of the paradoxes, mostly related to the willingness of the schools and the time of the teachers, were also discussed. The teacher mentions that she would be willing to participate in the experimentation horizon of the roadmap, and assumes that other teachers would be willing to participate as well, if she convinces them with enthusiasm. The client mentions that this first step is the hardest part, and if you get a group convinced, it is easier for the others to follow. If it is possible to involve the schools, is still a difficult topic, because creativity is currently not seen as a priority and the willingness of schools is often lower than from teachers (Robinson, 2017). Further research is needed to explore how schools can be involved and taken along into this development.

"Yes, I think so [getting teachers on board for experimentation sessions]. I don't think I can get everyone on board with this. But the people who of course also have to do something with it will."
teacher MBO

"It is a beautiful design, but there is still a lot of work that needs to be done. It needs to be translated into a more practical interpretation."
client GoFuture

Viability

Viability looks at the long-term effects of the design, and measures the value of the design for the company in terms of sustainability and monetary value (IDEO, 2012). The viability of the design was mostly discussed with the client, and mostly focused on the roadmap. Questions that were discussed were for example 'Do these steps

ensure that the creative goals you have set within GoFuture are achieved? and 'How do you think this adds value to GoFuture?'

The decision of GoFuture on implementing creativity within their education platform, is not directly related to monetary value, but rather on the quality of education and the will to prepare students for a rapid changing future. The client mentions that he thinks the design does help with the first steps towards their vision, but it would need to be further explored and followed up before this is actually achieved. The roadmap does support GoFuture in taking these steps. If their goals are achieved, this would mean that they differentiate themselves from other education providers, in a way that teachers could be open and longing for.

"Creativity is something that we at GoFuture think should receive much more attention and of which we have the idea that teachers could be open towards it. Well, there is the initial situation and then quite a bit is needed and I think this can really help with that, provided it will be followed up."
client GoFuture

Discussion

I wanted to validate my concept with teachers / students that are familiar with GoFuture, but only one teacher was available and willing to participate. The concept needs more testing and validation with several teachers, and the targeted students, before factual conclusions can be drawn about the design.

Conclusion

Even though a limited amount of interviews was conducted, they did give an idea about the desirability, feasibility and viability of the design. The design is desirable for teachers, in a way that they can learn more about implementing creativity within their lessons, because they see this as an important skill for students and themselves to develop. The design is feasible, because it can be implemented easily within the current education platform, but it needs to be further developed in practice before this will be possible. Finally, the design is viable, because it assists GoFuture in the implementation of creativity within their educational platform, and therefore innovates on the current education system.

Key take-aways

- The assignments were all mostly understandable and doable, but could use some small adjustments in their wording and explanation.
- Several suggestions for the improvement of the assignments have been discussed and will be considered within the design recommendations
- The design can be implemented within the current education platform, but first needs to be translated to a more practical context
- The design will support teachers in setting up a creative mindset within the classroom, which is something they needed guidance in.
- The design will support with implementing creativity within the education system, and therefore provides a way to innovate for the company.



7 To conclude



This chapter concludes the report with an final overall conclusion of the project, discussion of the limitations, recommendations and a personal reflection.

7.1. Conclusion

7.1.1. Conclusion

7.1.2. Value of the project

7.2. Limitations

7.2.1. Research limitations

7.2.2. Design limitations

7.3. Recommendations

7.3.1. Research recommendations

7.3.2. Design recommendations

7.4. Personal reflection

7.1. Conclusion

This project focused on fostering creative confidence entrepreneurial education, specifically targeting the VMBO/HAVO/MBO levels. The aim of the project was as follows:

“This project aims to boost creativity in students within the context of entrepreneurial education through the education platform of GoFuture. This will be achieved through cultivating creative confidence in both students and educators.”

To achieve the project aim, literature and field research was conducted, starting with an understanding of the creative and entrepreneurial field of education and connecting this to the context of the teachers and students involved with the lessons of GoFuture. The research started with a literature review, researching the attitudes and approaches needed to implement creative teaching within the field of entrepreneurial education. This was then complemented by several field research activities, like in-class observations, interviews with students, teachers and experts, and two co-creation sessions with teachers. The information gathered within these activities was analysed, and translated into several needs. These needs involved needs from teachers and students to improve creativity within their lessons, and needs from the field of entrepreneurial and creative education to create an environment in which creativity can be implemented within lessons. Besides needs, four paradoxes were found which described challenging considerations that needed to be taken into account during ideation.

The needs were translated in to design directions, of which one was chosen by evaluating and scoring them on developed design requirements. The chosen design direction was ‘risk-reward’, in which risk-taking behaviour is encouraged and tolerance of failure is developed. The design goal is rephrased into a more specific direction, which is:

“This project aims to boost creativity in students within the context of entrepreneurial education through the GoFuture education platform. This will be achieved through creating awareness and courage for risk-taking in both students and educators, and therefore cultivating creative confidence.”

A secondary literature review is executed, which led to the development of six design guidelines that support in stimulating risk-taking behaviour and dealing with failure in the context of creativity within entrepreneurial education. The design guidelines were used in the ideation process, and supported in the development of the final result.

The final design exists out of two aspects, a roadmap and a creative teaching module. The roadmap creates a long term vision for GoFuture on how to increasingly improve and implement creativity throughout their platform. The first horizon focusses on awareness, and takes shape in the creation of the teaching module. The teaching module is used to inform and inspire teachers about creative teaching and exists out of several themes and assignments.

Evaluations with teachers and experts have shown that this design contributes to achieving the design goal and is received positively. The design can be used as a first step towards reaching this goal, but the goal is too large to reach within this graduation project. More research and development is needed for this to succeed, by translating the insights gathered throughout the project into practical outcomes. In this regard, this project has undoubtedly provided much food for thought.

Contribution

This project provides a comprehensive view on how a creative attitude, in this scenario risk-taking, can be used in the development of creative confidence in entrepreneurial education. The gathered learnings and developed design guidelines can be used also within other fields of education – and can even be an example for developing lessons within IDE.

While discussions about the role of creativity in education are not new, the report underscores the crucial need for integrating creativity into education, emphasizing its significance not only on a global scale but particularly within the context of Dutch education, specifically focusing on VMBO and MBO levels. The report emphasizes the increasing relevance of fostering creativity in reaching the 21st-century learning goals, particularly in connection to the growing importance of MBO students (NOS, 2022).

7.2. Limitations

7.2.1. Research limitations

Qualitative research

Several teachers were interviewed and involved within the project. But, the teachers I’ve primarily engaged with are already eager to delve into creativity, as they are willing to have discussions with me. They all mentioned that they already find this topic interesting, but that they would understand that other colleagues have more difficulty with this. Because none of these teachers were available for me to engage with, I had to make decisions based on assumptions about this group of teachers. The research is scoped towards teachers that have affinity with creativity and no clear conclusions could be drawn based on teachers that are more traditional in their approach towards education. It would need to be tested if the design would engage these teachers in creative teaching.

Limited access to participants

There were not a lot of teachers available for me to interview or test with, that were also familiar with GoFuture and had the time to assist me. The project partially took place during the summer holiday, and teachers and students are not available at this time. Also just before and after summer holiday it was difficult to find participants, many stating that they were too busy to help. This made the teachers only available for a short time at the beginning and end of the project.

Evolved knowledge

As the evaluation and validation sessions were executed with teachers that were already involved earlier in the process, participants may have had pre-existing knowledge about their vision on creativity, which may influence their perception of the design.

Future use

The participants of the validation and evaluation sessions were tasked with envisioning a future scenario and imagining what they would do or how they would feel about it. However, in reality, there are numerous situations in which individuals

mispredict their own future feelings (Loewenstein & Schkade, 1999). As such, genuine insights about this design can only be gathered in practice, when the module and assignments are actually used within GoFuture.

7.2.2. Design limitations

Accuracy and efficacy of information

All the information presented in the creative teaching module is based on literature or insights from experts and educators. The main layout of the proposed topics is given, but a lot of the text is not worked out yet. The texts were primarily composed to illustrate what information should be displayed and what that information entails. The precise content of the texts should be further developed and checked with creativity and education experts.

Design possibilities

Even though I collected a lot of insights for stimulating risk-taking, dealing with failure and creativity within education, it became apparent that possibilities were limited within the scope of the project, considering the education level of the students and the knowledge and freedom of the teachers. It was first needed to focus on developing the basics, before depth and real attitude changes could have been reached. This made it challenging to develop a solution that created a new and innovating perspective on the topic of creativity within education.

Creation of creative confidence over time

Creative confidence can only be trained over time. But, the limited time of the graduation project made it impossible to completely improve and change the full education platform. To become creatively confident as students and teachers, a lot more development is needed.





7.3. Recommendations

7.3.1. Research recommendations

Several research recommendations are made based on the gathered insights in the validation.

Testing in practice

To ensure the project's success, it is crucial to test the exercises with the intended target group, which are VMBO/HAVO/MBO students and their teachers. To see if the assignments and module are achieving the desired impact and effect, it is suggested to measure the results over time. This ongoing evaluation helps to adjust the project as needed, ensuring it meets its goals effectively.

Testing in practice part 2

Further exploration is needed on whether teachers are using the platform and, if not, how its appeal and usability can be enhanced. The usability of the platform is currently not researched yet, which is recommended to ensure a comprehensive understanding of the platform's overall user experience.

Further development

Research is needed in general to work out the proposed activities in the roadmap, like the topic and contents of the teacher workshops, and the development of new assignments. It is suggested to measure the results over time, to see if the proposed activities lead to the intended effect.

School influence

Research is needed on how GoFuture can connect with schools for them to create the freedom for creativity and risk-taking, and how schools can get inspired by the story and ideas of GoFuture.

7.3.2. Design recommendations

Based on the evaluations, the following changes to the design are recommended.

Teaching module

The teaching module overall fitted within the needs of the teachers, but there are some suggestions for improvement of the design:

- The page 'teaching with a creative spark', currently exists out of 10 tips and tricks. The evaluation interview with the education strategist led to the insight that this list is too long, and will probably not be read or remembered by the teachers. It is recommended to revise this list and only show the most crucial and relevant tips, to make it easier for the suggestions to stick. The format in which the information is conveyed could also be reshaped towards a more engaging way, like a short video or animation.
- Within the first topic of the module, which is 'creativity in entrepreneurship', it is recommended to create an assignment for teachers that discusses the question 'what is creativity?'. This assignment will support them to visualise the concept of creativity, and therefore helps them with translating this within their classes. This exercise could also be interesting for students, to develop a more theoretical background around the topic of creativity.
- The current topics of the model are defined, but the exact information is not written yet. It is recommended to further develop this information and convey this in a way that it is comprehensible, concise and engaging for teachers.

Roadmap

- Not a lot of feedback was given on the ideas presented within the roadmap. One suggestion was made by the client within the validation interview. He mentioned the importance of changing the timing of the horizons from September to fall. During this time of the school year, teachers are more involved and available to support in the development of creative exercises and to participate in creative experimentation sessions and workshops.

Assignments

The assignment validation suggested some small adoptions in the explanation texts of the assignments. Examples are highlighting the words "three answers" in the 'experiment zone' assignment; and adding a reassuring sentence like "you do not have to fill in each flag" within the assignment 'creative goals'.

Assignment "creative goals"

From the assignment validation, the recommendation was made to adapt the assignment more to the context of the teacher; by adding questions like "How can you teach creatively?", "What could you do...?" and "When/How do you use this in your lessons?"

Assignment "experiment zone"

Within this assignment, students are asked to write down their insights on post-its. In this way, the insights would be anonymous. But, one of the participants in the assignment validation mentioned his trouble with his dyslexia, and that in this way and because of his handwriting and spelling errors, people could directly recognize his insights. It is recommended to use a digital platform for this part of the assignment instead, for example by using a program like mentimeter which can create word clouds. In this way, the assignment becomes more anonymous and the threshold to participate becomes lower.

Assignment "failure stories"

- Within the validation interviews, the name of the assignment was discussed, and concerns about the negative assumptions that arise with this name were expressed. A more positive name, like 'Stories of growth' is suggested to make the threshold for students lower to participate.
- For the assignment it would be best if students share their stories with each other. This can be overwhelming for some students, so it is recommended to do this in small groups and for example classify them according to the topics of their stories.



7.4. Personal reflection

Throughout the project I've learned a lot. Not only about the topics of my graduation, which aspects I like within a design project and which I don't and how to manage a project like this on my own, but mostly also about my personal qualities and weaknesses. Especially within a project that revolves around creative confidence, I reflected a lot on my personal confidence, and what I could learn from the theory myself. This was sometimes a challenge, as I felt my creative confidence slipping away throughout the project together with all the insecurities that arise with the many directions you can take within a design project. This reminded me of an image I saw at the beginning of my project, by the brothers Kelley, that explains the flow of creative confidence within a design project (Figure 68). Within this project, I can totally relate to this. Now, as I have arrived at the end of my project, I feel some confidence coming back, and I am proud of the work that I have done!

Within the project, there were several challenges that stuck with me. I want to discuss these challenges shortly, together with my learnings. I also want to reflect on the personal ambitions that I wrote down at the beginning of the project in the project brief, and end off with some highlights.

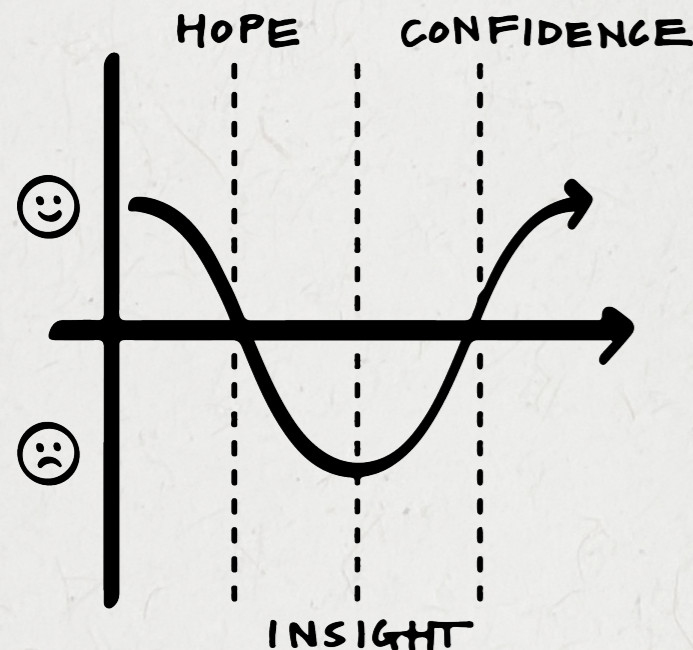


Figure 68: "How the journey of a project feels" - IDEO, 2012

Challenges & Learnings

Wanting it all and scoping it down

This project covers a lot of topics of which I had limited to no knowledge about before I started. I often found myself floating around in information, without being able to keep my focus, drowning in the many interesting papers that are written about these topics. I had trouble to scope it down and keep my story straight, and to use all this information and translating it towards the right context and education level of the target group. With all the information I gathered, I wanted to change it all, but a change starts with one step at a time.

Personal freedom and following the method

Learning about the freedom and risk-taking that is needed to experiment in a creative process, made me realise how little risks I took and how little I felt free. Within a graduation project, you can choose whatever you want to do, but you have to substantiate why you did something. There is a lot of pressure within a graduation project on creating something you are proud of and which is academically good. This was the first time that I did a project in which I first did a lot of research, before I started ideating. With all the knowledge and pressure you feel within a project like this, it can be hard to let go and feel the freedom to be creative. I learned that others can give this freedom back to you by making use of their limited knowledge. Through ideating together, they can give you new and unexpected ideas that help you to start thinking more freely again.

Planning

Even within an individual graduation project, you are still dependent on the planning of others. When working on an (education) project that involves others with a clear schedule, take this into account during your own planning. Which means: Do not plan a graduation project that involves working together with teachers during the summer holiday..

Personal ambitions

Looking back at the personal ambitions I wrote down within the project brief (Appendix A), I am happy to say that all of the ambitions that I started with were achieved! I broadened my knowledge about creativity and creative methods, learned more about the educational system, and used co-creation. I worked together with many different parties and stakeholders, which made the project challenging at some points, because it was sometimes hard to point down who I was designing for, but this was also a very informative process for me, which made me learn to stand up for myself and discuss my emotions and concerns. Finally, I wanted to develop a concept that could be implemented easily. Even though this project needed a long term vision, I am very happy with creating something tangible that can be used within the current setup of GoFuture.

Highlights

Co-creating

I realised that I really enjoy activities in which I can host a creative session and connect with experience experts to emerge myself within this world of creative education. The planning of my graduation made it difficult to plan more than one round of co-creation, which was a bit disappointing, but this did made me realise how much I enjoy this within a project.

Making it tangible

I've always known that I first really enjoy to explore and collect information and to really try and understand a problem and its' context. After gathering all this data, I gain a lot of satisfaction from translating this into something tangible and concrete. I also really enjoy working visually and within this project I enjoyed working on the digital prototype of the module, and puzzling my story within a comprehensive and attractive roadmap.

To conclude

Thank you for reading, I hope I have taken you along in my journey and I hope you have enjoyed it as much as I did!

Nina

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Appendix A project brief



6492



IDE Master Graduation

Project team, Procedural checks and personal Project brief

This document contains the agreements made between student and supervisory team about the student's IDE Master Graduation Project. This document can also include the involvement of an external organisation, however, it does not cover any legal employment relationship that the student and the client (might) agree upon. Next to that, this document facilitates the required procedural checks. In this document:

- The student defines the team, what he/she is going to do/deliver and how that will come about.
- SSC E&SA (Shared Service Center, Education & Student Affairs) reports on the student's registration and study progress.
- IDE's Board of Examiners confirms if the student is allowed to start the Graduation Project.

! USE ADOBE ACROBAT READER TO OPEN, EDIT AND SAVE THIS DOCUMENT

Download again and reopen in case you tried other software, such as Preview (Mac) or a webbrowser.

STUDENT DATA & MASTER PROGRAMME

Save this form according to the format "IDE Master Graduation Project Brief_familyname_firstname_studentnumber_dd-mm-yyyy". Complete all blue parts of the form and include the approved Project Brief in your Graduation Report as Appendix 1 !

family name Touw Your master programme (only select the options that apply to you):
 initials N. given name Nina IDE master(s): IPD Dfl SPD
 student number 4649834 2nd non-IDE master: _____
 individual programme: - - (give date of approval)
 honours programme: Honours Programme Master
 specialisation / annotation: Medisign
 Tech. in Sustainable Design
 Entrepreneurship

SUPERVISORY TEAM **

Fill in the required data for the supervisory team members. Please check the instructions on the right !

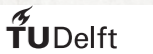
** chair Milene Guerreiro Gonçalves dept. / section: DOS / MOD
 ** mentor Katrina Heijne dept. / section: DOS / MOD
 2nd mentor Robert van Oosten
 organisation: GoFuture
 city: Hengelo country: Netherlands

Chair should request the IDE Board of Examiners for approval of a non-IDE mentor, including a motivation letter and c.v..

! Second mentor only applies in case the assignment is hosted by an external organisation.

comments (optional) Milene is able to support in research in the subject of creativity. Katrina is able to support in a practical way, in education and co-creation sessions.

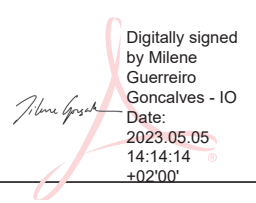
! Ensure a heterogeneous team. In case you wish to include two team members from the same section, please explain why.



Procedural Checks - IDE Master Graduation

APPROVAL PROJECT BRIEF

To be filled in by the chair of the supervisory team.

chair Milene Guerreiro Gonçalves date 05 - 05 - 2023 signature 

Digitally signed by Milene Guerreiro Gonçalves - IO
 Date: 2023.05.05 14:14:14 +02'00'

CHECK STUDY PROGRESS

To be filled in by the SSC E&SA (Shared Service Center, Education & Student Affairs), after approval of the project brief by the Chair. The study progress will be checked for a 2nd time just before the green light meeting.

Master electives no. of EC accumulated in total: 27 EC

YES all 1st year master courses passed

Of which, taking the conditional requirements into account, can be part of the exam programme 27 EC

NO missing 1st year master courses are:

List of electives obtained before the third semester without approval of the BoE

ID4340 Strategic Value of Design (3,0)

name Robin den Braber date 09 - 05 - 2023 signature RdB

FORMAL APPROVAL GRADUATION PROJECT

To be filled in by the Board of Examiners of IDE TU Delft. Please check the supervisory team and study the parts of the brief marked **. Next, please assess, (dis)approve and sign this Project Brief, by using the criteria below.

- Does the project fit within the (MSc)-programme of the student (taking into account, if described, the activities done next to the obligatory MSc specific courses)?
- Is the level of the project challenging enough for a MSc IDE graduating student?
- Is the project expected to be doable within 100 working days/20 weeks ?
- Does the composition of the supervisory team comply with the regulations and fit the assignment ?

Content: APPROVED NOT APPROVED

Procedure: APPROVED NOT APPROVED

- the missing course ID4340 should be finished before the green light meeting

comments

name Monique von Morgen date - KE 16/5/2023 signature MvM

Initials & Name N. Touw Student number 4649834

Title of Project Let's create! Building Creative Confidence in Students and Educators

Let's create! Building Creative Confidence in Students and Educators project title

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

start date 04 - 05 - 2023 07 - 11 - 2023 end date

INTRODUCTION **

Please describe, the context of your project, and address the main stakeholders (interests) within this context in a concise yet complete manner. Who are involved, what do they value and how do they currently operate within the given context? What are the main opportunities and limitations you are currently aware of (cultural- and social norms, resources (time, money,...), technology, ...).

GoFuture is an e-learning platform that aims to teach students (VMBO-MBO-HBO) how to become successful entrepreneurs through entrepreneurial learning principles. They want to prepare students for the future and let them get a first sense of the real world outside of school. Besides this, their aim is to let students discover and develop their passions and abilities and reflect on these. They challenge students to take initiative and responsibility and dare them to experiment and make mistakes. They use gamification methods to make the learning process more engaging and enjoyable.

Students start with a project that is based on a vision that inspires and motivates them. They use the platform as guidance throughout their project, and complete assignments that relate to the business model canvas to evolve their first ideas into a viable concept (figure 1). Besides founding a business, the platform also focuses on the development of entrepreneurial skills and attitudes of the students (figure 2). They do this through self-reflection assignments and by rewarding them for taking initiative in skills they feel insecure about.

Feedback from educators indicates that some students struggle with generating ideas, and may not have the ability to come up with an innovative vision on their own. Besides this, they appear to have trouble with iterating on their initial vision. Most problems appear to relate to the lack of experience with creative thinking and the creative process. Creative thinking plays a vital role in driving innovation and progress in our society, enabling the invention of new ideas, perspectives, concepts, principles, and products that can improve our lives and shape the world around us. It is important to foster creative thinking within young adults, to encourage them to know how to communicate and express their ideas later in life (Mossing, 2013). The ability to create new ideas and to find new ways in seeing problems and opportunities is crucial for the development of the entrepreneurial attitudes GoFuture strives to develop (Kusmintarti et al., 2014). Making use of the iterative creative process is crucial for developing in-depth and novel outcomes that lead to successful enterprises (Wynn & Eckert, 2017).

To spark creativity, you need an open and safe environment in which you feel comfortable and confident about your creative abilities. The educators that use the platform often teach economics in higher or secondary education. They are used to the traditional way of teaching, in which they may not be highly involved in lessons beyond providing a brief explanation and directing students to self-study. Additionally, many educators lack the confidence and knowledge to incorporate creativity into their teaching. As a result, they may not know how to support students in creating their own vision and working on an iterative creative process. This can be a significant challenge, as inspiring and guiding students in the creative process is a key aspect of cultivating a strong entrepreneurial mindset. According to Tom and David Kelley (2013), creative confidence is "believing in your ability to create change in the world around you. This belief in your creative capacity, lies at the heart of innovation." Besides challenging students to use creative thinking, it is thus important for educators to build their own creative confidence to foster a more entrepreneurial culture in the classroom.

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introduction (continued): space for images

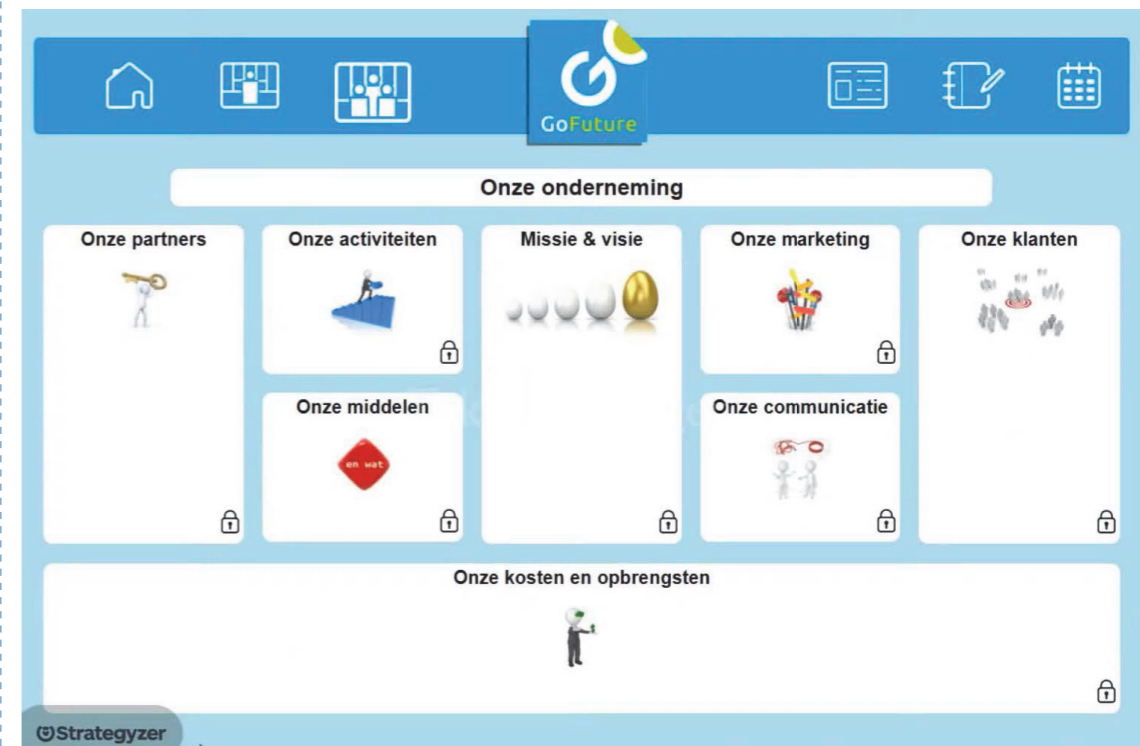


image / figure 1: The e-learning platform: business model canvas

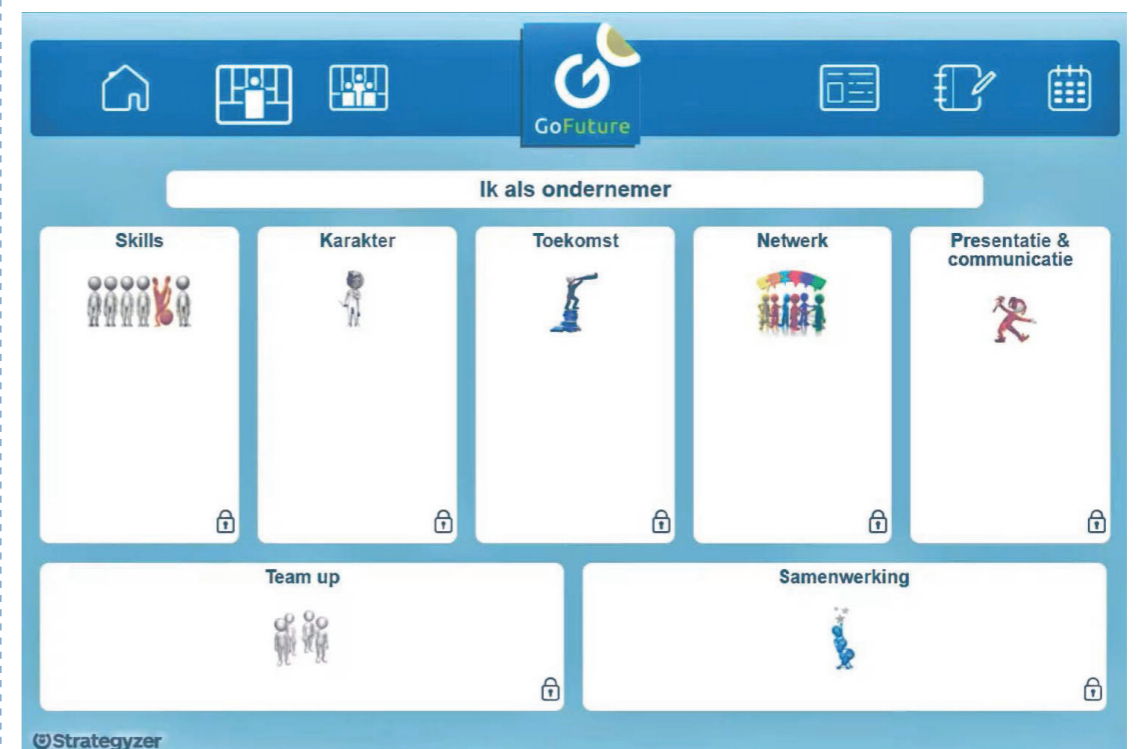


image / figure 2: The e-learning platform: personal development

PROBLEM DEFINITION **

Limit and define the scope and solution space of your project to one that is manageable within one Master Graduation Project of 30 EC (= 20 full time weeks or 100 working days) and clearly indicate what issue(s) should be addressed in this project.

Within this project, there are three interconnected problems to consider. These all relate to one main issue: students are currently lacking creative attitudes. I will start with researching these directions:

- The educators: By building creative confidence within educators, they are able to coach students in becoming more creative. It enables them to create an entrepreneurial and creative culture within the classroom.
- The students: Students currently are not trained to use creative thinking. By building creative confidence within students, students are able to use their creativity to foster innovation and entrepreneurial attitudes to gain the skills to prepare them for the future.
- The platform: The platform currently offers some (optional) tasks to iterate on initial ideas and to use creative thinking to innovate and improve. But, students tend to have trouble with performing these tasks and often skip the optional questions. Besides this, the tasks are currently not developed deeply enough to really assist and challenge students in using their creativity.

Since addressing all three directions will be challenging in the duration of a graduation project, I will analyse the outcomes of this research to reframe the problem into one concrete design direction that is interconnected with the problems discussed above.

ASSIGNMENT **

State in 2 or 3 sentences what you are going to research, design, create and / or generate, that will solve (part of) the issue(s) pointed out in "problem definition". Then illustrate this assignment by indicating what kind of solution you expect and / or aim to deliver, for instance: a product, a product-service combination, a strategy illustrated through product or product-service combination ideas, In case of a Specialisation and/or Annotation, make sure the assignment reflects this/these.

The goal of this project is to develop an education tool that helps students in developing creative attitudes. It should nurture creative confidence in both students and educators, to support an entrepreneurial learning environment in the classroom.

The possible solution space of this project is still broad. Many different types of outcomes can be explored, and which fits best is dependent on the reframed design direction and input from co-creation sessions.

Some possible outcomes could be:

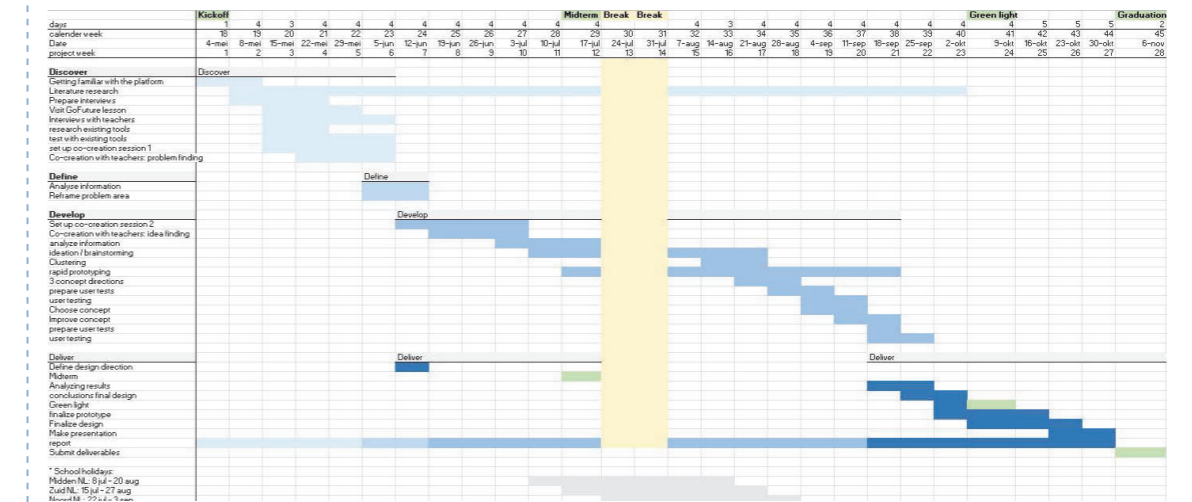
- Workshop setup
- Overall platform update
- (Serious) Game
- Videos
- Educational toolkit

The main goal is that students are encouraged to develop their creative attitude, by embracing the creative process and generating innovative and viable outcomes through entrepreneurial learning principles. This is connected with building creative confidence in the students and their educators.

PLANNING AND APPROACH **

Include a Gantt Chart (replace the example below - more examples can be found in Manual 2) that shows the different phases of your project, deliverables you have in mind, meetings, and how you plan to spend your time. Please note that all activities should fit within the given net time of 30 EC = 20 full time weeks or 100 working days, and your planning should include a kick-off meeting, mid-term meeting, green light meeting and graduation ceremony. Illustrate your Gantt Chart by, for instance, explaining your approach, and 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 activities.

start date 4 - 5 - 2023 end date 7 - 11 - 2023



The planning is divided into 4 phases, based on the double diamond model.

In the discovery phase I will get familiar with the different concepts related to the project and the GoFuture e-learning platform. I will research current available tools and gain a deeper understanding of the users of the platform, by visiting a class and interviewing teachers. Besides this, I will start with my first co-creation session, focussed on problem finding.

After that, I will analyse the gathered information and translate this into a clear design direction.

Within the development phase I start off with a second co-creation session together with teachers about idea finding. Based on these insights, I will start ideation. By means of rapid prototyping and user testing, I will present a number of concepts from which I will make a decision for the next phase.

The last phase is focused on the finalisation of the design. In this phase, I will focus on detailing of the concept and reporting the outcomes.

I plan to work 4 days a week on the project, because of other obligations on the fifth day. I plan to take 2 weeks off after my midterm presentation. Besides that, in week 3 and 16, I plan to work 3 days because of holidays. In the last phase of the project, between the green light presentation and graduation, I plan on working 5 days a week.

MOTIVATION AND PERSONAL AMBITIONS

Explain why you set up this project, what competences you want to prove and learn. For example: acquired competences from your MSc programme, the elective semester, extra-curricular activities (etc.) and point out the competences you have yet developed. Optionally, describe which personal learning ambitions you explicitly want to address in this project, on top of the learning objectives of the Graduation Project, such as: in depth knowledge a on specific subject, broadening your competences or experimenting with a specific tool and/or methodology, Stick to no more than five ambitions.

I have always been interested in the education system and am passionate about helping to prepare young adults for the challenges and opportunities of the future. I believe that one key aspect of this preparation is implementing creative thinking and problem-solving skills into the classroom, as I believe these are essential in today's world. I am intrigued by the potential of learning through gamification, as it can make the learning experience more engaging, enjoyable, and effective.

This project gives me the opportunity to learn more about using creativity and gamification to create engaging educational experiences. I enjoy in-depth research, and I believe it is critical to first gain a deep understanding of the problems and challenges to identify the most promising solutions.

In this project, I am working together with a client (GoFuture), a delft design lab (Connected Creativity lab) and two final users (educators and students), all with different values and goals. I think it is an interesting challenge to work together with these different parties and how to manage them and keep them aligned, combined with staying close to my personal values and ambitions.

Within my master I followed the course Creative Facilitation, and I would like to develop my facilitation skills more through using co-creation in the project. I would like to do this to learn more about working together with different parties and to challenge myself to guide these creative sessions. I also think this fits the project very well: using creative sessions to find out more about how creativity is used and how comfortable educators are with it.

Within my studies, I have come across many creative methods, and I am curious to see how I could use my knowledge and experience to develop this way of creative thinking in a new setting. Ultimately, my goal is to end the process with a tangible outcome that can be implemented in real-world settings, such as a new tool, methodology, or framework. It is my ambition to make the concept easy to implement within the current platform.

Personal ambitions:

- Use co-creation within a project
- Broaden my knowledge about creativity and creative methods
- Learn more about education and the educational system
- Work together with different parties
- create a concept that can be implemented easily

FINAL COMMENTS

In case your project brief needs final comments, please add any information you think is relevant.

Appendix B 21st century skills

With the digitalisation, the world has been developing rapidly and the work environment changes together with the development of new technologies. Within entrepreneurship, it is important to stay relevant and to anticipate to the future and its changes (Birdthistle, 2008). To do this, constant innovation and adaption is needed. The 21st century skills acknowledge this development, and categorized the twelve most important skills to prepare students for their adult (working) life within three categories; learning and innovation skills, digital literacy skills and career and life skills (Trilling & Fadel, 2012) (see Figure).

Learning and innovation skills prepare students on becoming self-reliant lifelong learners. The skills exist out of critical thinking, communication, collaboration and creativity. With a world that is becoming more complex every year, through the development of new technologies and knowledge, it is important to know how to communicate and collaborate with different parties, but also being able to be critical on data and knowing how to ask the right questions. Besides this, it is needed to continually invent new and better services and products for the global market through stimulating creativity, discovery and invention.

Digital literacy skills focus on handling the informational overload that is currently floating around on the world wide web, and how to access, evaluate, use and manage this. The skills needed for this are information literacy, media literacy and technology literacy. Students need to learn how to tap into the unlimited resources they have, and how to apply these resources in the right way to create compelling and effective communication graphics like video's and websites. Besides this they need to know how to use these different technology and media tools effectively throughout their learning process.

Career and life skills are used within the work environment, but also in everyday life and can relate to dealing with smartphone technology towards a work computer. The skills that relate to this are flexibility, initiative, social skills, productivity and leadership. With the rapid pace of technological innovation, students are forced to adapt quickly to new ways of communicating,

learning, working and living. Workers are expected to be self-reliant within the fast-paced working environment, and are expected to manage their own goals and time efficiently. It is essential to work together in diverse teams and to interact effectively with each other. Students should be able to lead and guide others and act responsibly.

21st century skills within GoFuture

GoFuture strives to design their education platform in such a way that these 21st century skills are trained. They state that it is important to have these skills as an entrepreneur, to be able to foresee and react to changes; and stay relevant as a company. Within the platform, they intent to implement this throughout the exercises and talking with teachers to inspire them with an innovative lesson approach.

Career and life skills:

There main focus within career and life skills is on student initiative, leadership and social skills. Within entrepreneurship it is important to know how to communicate with different stakeholders and sense when to lead and when to hand over tasks. Beside this, being an entrepreneur means being self-reliant and independent, for which a lot of initiative is needed. GoFuture uses assignments like interviewing to train communication skills, and they try to frame their assignments in a way that students are encouraged to take initiative. Even though they express the importance of these skills, they are currently unknown if these are achieved and fear that students do not know how to take initiative. They also have concerns about the freedom teachers give to their students to be in control of their own project and take initiative.

Literacy skills:

The digital platform of GoFuture makes use of different types of media and digital tools, like video's, websites and computer programs such as adobe acrobat to convey their learnings. They see the unlimited sources of data as a important learning source.

Previous feedback from students and teachers made clear that the use of different computer programs within the program made it unnatural to work with, and GoFuture is currently redeveloping the platform to make it more intuitive and easy to

work with.

Learning and innovation skills:

To become an entrepreneur that adapts to the rapid, continuous changes within the digital world, all learning and innovation skills are extremely important. To innovate as a company, creativity is needed and critical thinking, for example through reflection, is important to analyse and iterate on innovative ideas. Collaboration and communication are important to bring value to the company, and can also be an meaningful contributor to innovation (Arpiainen and Kurczewska, 2017).

GoFuture implements reflection exercises throughout the platform to initiate iteration and critical thinking. They worry that students do not take these reflection exercises seriously, and are

not motivated to iterate on their ideas. Educators are encouraged to have reflection talks with their students, but GoFuture does not have data on how these talks are executed. Finally, GoFuture uses exercises like brainstorming to stimulate creativity within students, but fear that students do not have enough experience with creativity and educators do not know how to coach students within this topic. The platform is not developed extensively enough to guide teachers in this process, and does not hand enough tools to students to develop their creativity.

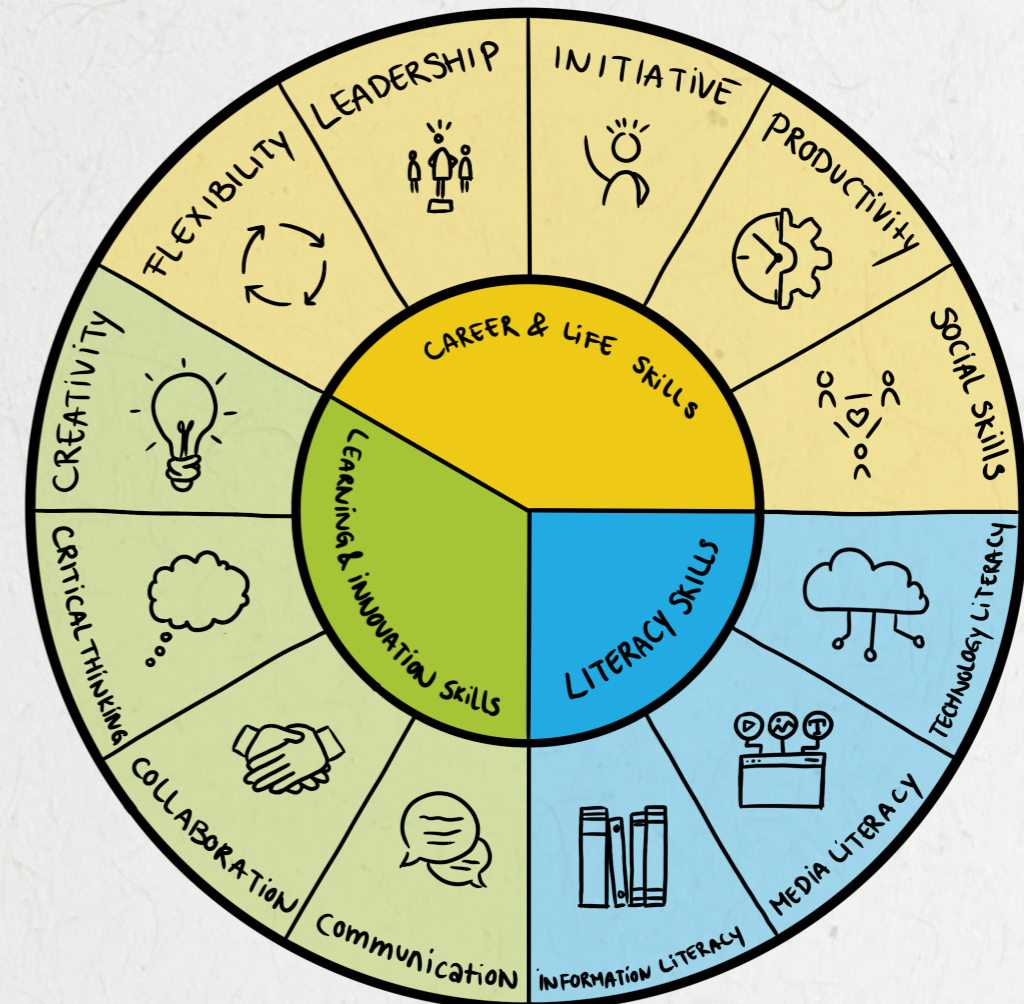


Figure: 21st century skills by Trilling and Fadel (2012)

Appendix C List of data

Appendix D The Dutch education system

GoFuture offers an e-learning platform that contains an educational kit for teaching entrepreneurship to different schools within the Netherlands. To understand the different offerings GoFuture has, it is first important to get an understanding of the Dutch education system and its different levels of education.

The Dutch education system is divided in primary education, secondary education and higher education (see Figure). Within secondary and higher education, there are different levels. VMBO and MBO level are both focussed on specific skill development of an occupation in practice. HAVO and HBO are more focussed on independent learning. VWO and WO are focussed on the development of research skills, like critical and analytical thinking.

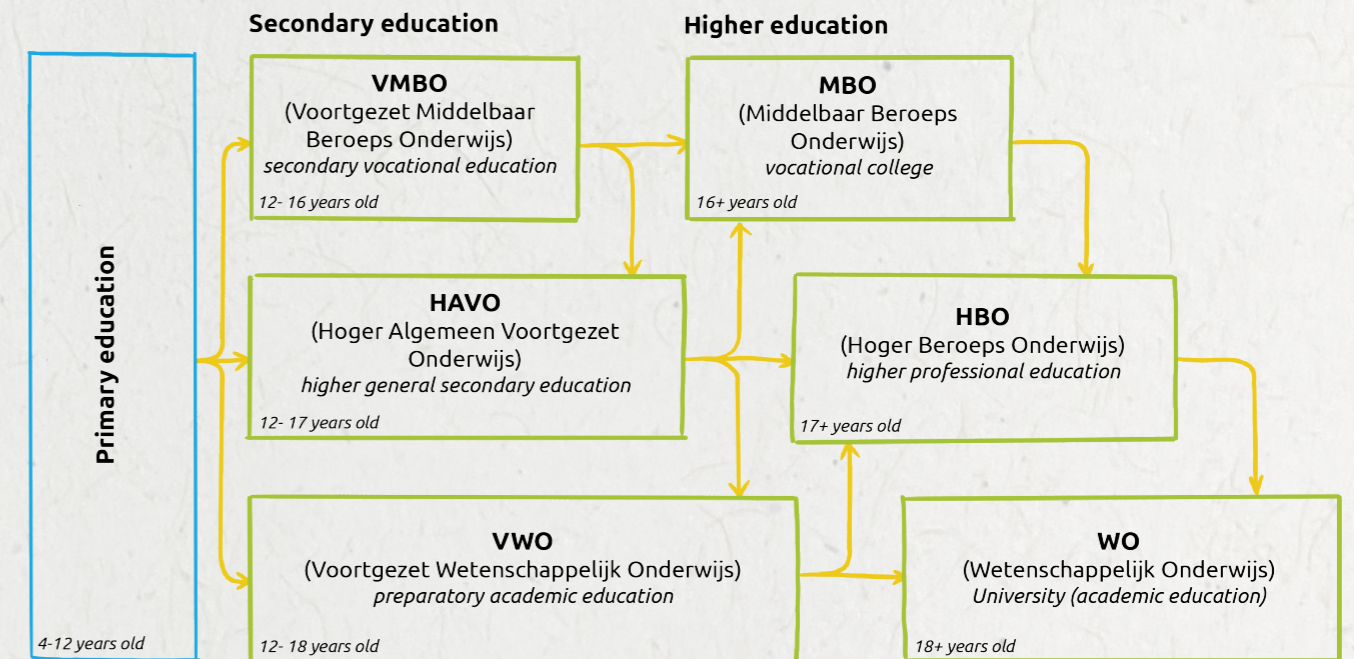


Figure: The Dutch education system

Appendix E Analysis education (literature research)

Entrepreneurial education

Risk-taking

Most entrepreneurs would not characterize themselves as risk-takers; rather, they evaluate risk differently because of a combination of their knowledge, experience and high self-efficacy. Entrepreneurs also seem to give greater weight to the risk of "missing the boat" (i.e., missing an opportunity and the potential benefits it could produce) than the risk of "sinking the boat" (i.e., failing and its consequences)—as suggested by Brown & Cornwall (2000), who also point out that this behavior is counter to the incentives currently in place in most educational institutions.

Borasi & Finnigan, 2010

willingness and a capability to take risks is related to the identification of entrepreneurial opportunity, i.e. entrepreneurs see opportunities where other people see risks.

Taatila, 2010

Financial considerations are at the core of what business entrepreneurs do, as not only do they need to secure the necessary funding for any initiative they want to launch, but also new start-up businesses usually have to operate with very little funding

Borasi & Finnigan, 2010

Entrepreneurial characteristics is a combination of some characteristics that should be owned by an entrepreneur. These are internal locus of control, need for achievement, propensity to risk, creativity, social networking and tolerance for ambiguity.

Kusmintarti et al., 2014

Wickham (2006) stated that entrepreneurs are creative, seek and discover niches for market innovations, bear risks, are growth-oriented, and are driven to maximise profit or investors' returns.

Wickham, 2006

Opportunity seeking

willingness and a capability to take risks is related to the identification of entrepreneurial opportunity, i.e. entrepreneurs see opportunities where other people see risks.

Taatila, 2010

entrepreneurship is about entrepreneurial individuals interacting with their environment, and thus discovering, evaluating and exploiting opportunities. (shook et al, 2003)

Shook et al., 2003

Most entrepreneurs would not characterize themselves as risk-takers; rather, they evaluate risk differently because of a combination of their knowledge, experience and high self-efficacy. Entrepreneurs also seem to give greater weight to the risk of "missing the boat" (i.e., missing an opportunity and the potential benefits it could produce) than the risk of "sinking the boat" (i.e., failing and its consequences)—as suggested by Brown & Cornwall (2000), who also point out that this behavior is counter to the incentives currently in place in most educational institutions.

Borasi & Finnigan, 2010

the literature on entrepreneurship suggests that one of the things that most characterizes entrepreneurs is their unique approach to opportunities, which involves both proactively seeking and being ready to seize opportunities.

Borasi & Finnigan, 2010

Entrepreneurship education: Knowledge transfer regarding how, by whom, and with what effects, opportunities to create future goods and services are discovered, evaluated and exploited

Fayolle & Gailly, 2008

positive mindset towards creativity starts with positive attitude towards problems - opportunities for disruptive change

Badasur & Badasur, 2011

Achievement

Expansion is a key drive for entrepreneurs, whether it means continuing to grow a business or organization to achieve greater revenues and success (e.g., Kelley & Marram, 2004) or expanding one's sphere of influence to maximize the impact of their ideas/solutions as in the case of social entrepreneurs (Bornstein, 2004).

Bornstein, 2004

Entrepreneurial characteristics is a combination of some characteristics that should be owned by an entrepreneur. These are internal locus of control, need for achievement, propensity to risk, creativity, social networking and tolerance for ambiguity.

Kusmintarti et al., 2014

Wickham (2006) stated that entrepreneurs are creative, seek and discover niches for market innovations, bear risks, are growth-oriented, and are driven to maximise profit or investors' returns.

Wickham, 2006

Interactive

Using case discussions to involve the class in 'quasi-genuine' decision making and/or problem solving, and then reflect on the strategies used and their entrepreneurial nature

Borasi & Finnigan, 2010

entrepreneurship is about entrepreneurial individuals interacting with their environment, and thus discovering, evaluating and exploiting opportunities. (shook et al, 2003)

Shook et al., 2003

Inviting entrepreneurial educators as guest speakers, and/or have students interview them, with the goal of reconstructing in detail how they carried out a specific innovation

Borasi & Finnigan, 2010

Reflection

Entrepreneurial education should focus on "developing creativity, critical thinking and reflection among individuals, which in turn can have a profound influence on both their motivation and ability to develop entrepreneurial knowledge throughout their professional lives" (Politis 2008)

Politis, 2008

Experiential learning: Concrete experiment (feeling) - Reflective observation (watching) - Abstract conceptualisation (thinking) - Active experimentation (doing)

Kolb, 1984

Key role is played by reflection

Borasi & Finnigan, 2010

Using case discussions to involve the class in 'quasi-genuine' decision making and/or problem solving, and then reflect on the strategies used and their entrepreneurial nature

Borasi & Finnigan, 2010

As respondents became aware and confident of their capabilities, they also appreciated their limitations and weaknesses

Rae & Carswell, 2000

Critical thinking

Three response types: affective (how we feel), cognitive (what we think), and behavioral (what we are inclined to do) - Tripartite model of attitudes. True attitude change results when both affective and cognitive processing of information occur in parallel

Badasur & Badasur, 2011

Entrepreneurial education should focus on "developing creativity, critical thinking and reflection among individuals, which in turn can have a profound influence on both their motivation and ability to develop entrepreneurial knowledge throughout their professional lives" (Politis 2008)

Politis, 2008

Entrepreneurial characteristics is a combination of some characteristics that should be owned by an entrepreneur. These are internal locus of control, need for achievement, propensity to risk, creativity, social networking and tolerance for ambiguity.

Kusmintarti et al., 2014

Knowledge

Knowing-doing gap: space between what we know we should do and what we actually do

Kelley & Kelley, 2014

Entrepreneurial education should focus on "developing creativity, critical thinking and reflection among individuals, which in turn can have a profound influence on both their motivation and ability to develop entrepreneurial knowledge throughout their professional lives" (Politis 2008)

Politis, 2008

Experiential learning: Concrete experiment (feeling) - Reflective observation (watching) - Abstract conceptualisation (thinking) - Active experimentation (doing)

Kolb, 1984

Entrepreneurship education: Knowledge transfer regarding how, by whom, and with what effects, opportunities to create future goods and services are discovered, evaluated and exploited

Fayolle & Gailly, 2008

Entrepreneurial learning is process by which people acquire new knowledge from direct experience and from observing the behaviors, actions and consequences of others; assimilate new knowledge using heuristics to confront discrepancies that are common with information acquired in uncertain contexts; and organize assimilated knowledge by linking it with preexisting structures'.

Kusmintarti et al., 2014

Creative problem solving

Engaging in innovation involves a lot of decision-making and problem-solving. Entrepreneurs are characterized in the literature as having a unique style of decision-making and problem-solving (e.g., Hornaday, 1982). First of all, as they are aware of the importance of not missing a window of opportunity, entrepreneurs tend to make decisions and solve problems quickly; furthermore, they are willing to do so with somewhat incomplete information if needed.

Borasi & Finnigan, 2010

Using case discussions to involve the class in 'quasi-genuine' decision making and/or problem solving, and then reflect on the strategies used and their entrepreneurial nature

Borasi & Finnigan, 2010

Entrepreneurs are also likely to persist despite the many obstacles they may encounter (identified in Bygrave's list as determination) and to consider "out-of-the-box" solutions for problems.

Borasi & Finnigan, 2010

Goal

"Confidence and self-belief" - The motivation to achieve and consequent goal setting seemed to stimulate learning

Rae & Carswell, 2000

The role of personal motivation and goal-setting appeared to be highly significant

Rae & Carswell, 2000

Education program around five interrelated questions:
1. Why (objective, goals)?
2. For whom (targets, audience)?
3. For which results (evaluations, assessments)?
4. What (contents, theories)?
5. How (methods, pedagogies)?

Fayolle & Gailly, 2008

Entrepreneurial characteristics is a combination of some characteristics that should be owned by an entrepreneur. These are internal locus of control, need for achievement, propensity to risk, creativity, social networking and tolerance for ambiguity.

Kusmintarti et al., 2014

Vision. Having a clear vision and being able to effectively share it with others has been identified in the literature as one of the key characteristics of entrepreneurs in general, and social entrepreneurs in particular

Borasi & Finnigan, 2010

Wickham (2006) stated that entrepreneurs are creative, seek and discover niches for market innovations, bear risks, are growth-oriented, and are driven to maximise profit or investors' returns.

Wickham, 2006

Creative education

Open-mindedness

As schools cut funding for the arts and high-stakes testing becomes more pervasive, creativity itself is devalued, compared to traditional core subjects like math and science. Those subjects emphasize ways of thinking and problem solving that have a clear-cut single answer, while many real-world twenty-first-century challenges require a more openminded approach

Kelley & Kelley, 2014

Be practical
Use your imagination and ask questions like 'What if..?'

Von Oech, 2008

"make the familiar strange," encourages us to see common objects and situations in new ways, to overcome too-familiar perceptual features, and to look for new and different ideas and perceptions

Davis, 2011

The rule of facilitation entails that a teacher facilitates the learning process and the development of creative abilities through empathy, authenticity, openness, assertiveness, and acceptance of who the students are.

Szmidt, 2001

"The issue is one of attitudes. A person can be inflexibly tied to rules, or can be creativity conscious - open, receptive and encouraging new ideas

Davis, 2011

A creative person, virtually by definition, must be receptive to new ideas and willing to look at problems from various points of view. Open-mindedness includes not fearing the new, different, or unknown and not making up one's mind in advance

Davis, 2011

positive mindset towards creativity starts with positive attitude towards problems - opportunities for disruptive change

Badasur & Badasur, 2011

Follow the rules
Thinking of things as they are and not as how they could be

Von Oech, 2008

Freedom

Well-meaning teachers and parents play a part when counseling young people toward conventional professions, sending the subtle message that occupations involving creativity are too risky and out of the mainstream

Kelley & Kelley, 2014

By developing materials and approaches that motivate students to learn, teaching creatively impacts the level of ownership and control in the learning process and innovation in thinking

Jeffrey & Craft, 2004

As schools cut funding for the arts and high-stakes testing becomes more pervasive, creativity itself is devalued, compared to traditional core subjects like math and science. Those subjects emphasize ways of thinking and problem solving that have a clear-cut single answer, while many real-world twenty-first-century challenges require a more openminded approach

Kelley & Kelley, 2014

Don't be foolish
Cultural pressure can make it difficult to feel free to experiment with ideas

Von Oech, 2008

Experimentation

In a similar way, we use a step-by-step progression to help people discover and experience the tools and methodologies of design thinking, gradually increasing the level of challenge to help individuals transcend the fear of failure that blocks their best ideas

Kelley & Kelley, 2014

Szmidt (2001) distinguishes the rule of humor and play, the rule of emphasizing creative process over creative product, and the rule of removing/preventing barriers in creativity.

Szmidt, 2001

The concept of teaching for creativity, on the other hand, focuses on encouraging young people to believe in their creative identity and creative abilities, and on fostering creativity by curiosity and "learner inclusive" pedagogy, where the learner is encouraged to engage in identifying and exploring knowledge

Jeffrey & Craft, 2004

Play is frivolous
It is important to play and experiment with ideas, sometimes the best ideas can be born out of this

Von Oech, 2008

Early failure can be crucial to success in innovation, because the faster you find weaknesses during an innovation cycle, the faster you can improve what needs fixing

Kelley & Kelley, 2014

The best way to gain confidence in your creative ability is through action - taken one step at a time

Kelley & Kelley, 2014

Don't be foolish
Cultural pressure can make it difficult to feel free to experiment with ideas

Von Oech, 2008

Ambiguity

The right answer
Instead of looking for one right answer, there is a possibility of multiple answers being right

Von Oech, 2008

Avoid ambiguity
Ambiguity inspires imagination and is an essential stage within problem and solution finding

Von Oech, 2008

fear to overcome: failure - fear of being judged, fear of getting started, fear of the unknown

Kelley & Kelley, 2014

Creative people tend to:
- Redefine problems in new ways in order to seek solutions
- Take sensible risks and accept failure as part of the innovation process
- Confront the obstacles that arise when challenging the status quo

- Tolerate ambiguity when they are not certain that they are on the right path
- Continue to grow intellectually rather than let their skills or knowledge stagnate

Mathisen & Bronnick, 2009

guidelines for brainstorming (not criticizing ideas, building on each other's ideas, free association) help with improving creative self-efficacy

Mathisen & Bronnick, 2009

"The issue is one of attitudes. A person can be inflexibly tied to rules, or can be creativity conscious - open, receptive and encouraging new ideas

Davis, 2011

Playful drive

A defining trait of creatively productive people is their extraordinarily high level of energy, which appears as enthusiasm, driving absorption, passionate interest, and an unwillingness to give up.

Davis, 2011

Another frequent trait is a keen sense of humor. It relates to one's ability to have a childlike and playful approach to problems.

Davis, 2011

The Dabrowski and Piechowski phenomenon of 'emotional giftedness' or 'overexcitability' usually happens in very high IQ gifted persons. The syndrome includes free play of imagination, vivid imagery, fantasy, paranormal thinking, metaphorical thought, inventions, and poetic and dramatic perceptions, as well as fast talking and extra high energy levels. The syndrome includes having emotional highs and lows, moodiness, and emotional sensitivity.

Davis, 2011

Play is frivolous
It is important to play and experiment with ideas, sometimes the best ideas can be born out of this

Von Oech, 2008

Risk-taking

When our self-worth isn't on the line, we are far more willing to be courageous and risk sharing our talents and gifts. One way to embrace creativity is by letting go of comparison

Kelley & Kelley, 2014

The creative person must dare to differ, make changes, challenge traditions, make waves, and bend rules. Such independence and risk-taking expose the creative person to possible criticism and embarrassment, and the possibilities of failure or looking foolish.

Davis, 2011

Well-meaning teachers and parents play a part when counseling young people toward conventional professions, sending the subtle message that occupations involving creativity are too risky and out of the mainstream

Kelley & Kelley, 2014

To error is wrong
To innovate it is important to sometimes make mistakes, even fail, and learn from these mistakes

Von Oech, 2008

Creative people tend to:
- Redefine problems in new ways in order to seek solutions
- Take sensible risks and accept failure as part of the innovation process
- Confront the obstacles that arise when challenging the status quo

- Tolerate ambiguity when they are not certain that they are on the right path
- Continue to grow intellectually rather than let their skills or knowledge stagnate

Kelley & Kelley, 2014

Positivity

That is not my area
By creating excuses for not trying to solve problems, you can also block yourself from being inspired by other fields of work

Von Oech, 2008

tendency for ethical thinking and behavior - empathy, idealism, altruism, and simple helpfulness

Davis, 2011

To change attitudes and behaviors, it helps to first change the vernacular: Never say 'I can't' - but 'How might we..'

Kelley & Kelley, 2014

"The issue is one of attitudes. A person can be inflexibly tied to rules, or can be creativity conscious - open, receptive and encouraging new ideas

Davis, 2011

positive mindset towards creativity starts with positive attitude towards problems - opportunities for disruptive change

Badasur & Badasur, 2011

Complexity

Perceptiveness and intuitiveness, whether in art or science areas, are common traits of creative people. There is greater sensitivity to details, patterns, implications, relationships, and 'what should follow.' Intuitive "mental leaps" are quicker.

Davis, 2011

Thorough - The committed creative person must finish the projects, preferably in an organized fashion.

Davis, 2011

The creative person's attraction to fantasy, complexity, and novelty may reflect the person's own complexity

Davis, 2011

curiosity - a sometimes childlike sense of wonder and intrigue, a desire to understand one's world.

Davis, 2011

Self-efficacy

Creative self-efficacy: "A person's perceived confidence to perform a given task, in a specific context, at a particular level of performance."

Highly malleable beliefs, future-oriented and influenced by a range of socio cognitive and environmental factors: physiological state, features of the physical environment, prior performance, vicarious experiences and social persuasion

Karwowski et al., 2019

Creativity consciousness is a common and important trait among creative people.

Davis, 2011

guidelines for brainstorming (not criticizing ideas, building on each other's ideas, free association) help with improving creative self-efficacy

Mathisen & Bronnick, 2009

I'm not creative
If you believe you are not creative, you will never be able to be creative.

Von Oech, 2008

Creative performance levels increased as employees' sense of creative efficacy became stronger

Tierney & Farmer, 2011

The concept of teaching for creativity, on the other hand, focuses on encouraging young people to believe in their creative identity and creative abilities, and on fostering creativity by curiosity and "learner inclusive" pedagogy, where the learner is encouraged to engage in identifying and exploring knowledge

Jeffrey & Craft, 2004

Reflection

The need to create demands time for thinking, reflection, solving problems, and creating. Creative children and adults often prefer to work alone, reflecting their creative independence.

Davis, 2011

That is not logical
Sometimes illogical thinking can be beneficial for the creative process, especially within idea generation

Von Oech, 2008

We give students a chance to fail as soon as possible, in order to maximize the learning time that follows. We let them reflect on what succeeded - and what can be learned from things that didn't work.

Kelley & Kelley, 2014

Early failure can be crucial to success in innovation, because the faster you find weaknesses during an innovation cycle, the faster you can improve what needs fixing

Kelley & Kelley, 2014

Another rule refers to developing intrinsic motivation, with emphasis on suspending grading during creativity lessons and on encouraging students to evaluate their progress on their own.

Szmidt, 2001

Long-term approach

The best way to gain confidence in your creative ability is through action - taken one step at a time

Kelley & Kelley, 2014

In a similar way, we use a step-by-step progression to help people discover and experience the tools and methodologies of design thinking, gradually increasing the level of challenge to help individuals transcend the fear of failure that blocks their best ideas

Kelley & Kelley, 2014

Effects of creativity training are of little consequence unless they endure. Often there is a failure to use designs that can demonstrate long-term robustness of training effects

Mathisen & Bronnick, 2009

We give students a chance to fail as soon as possible, in order to maximize the learning time that follows. We let them reflect on what succeeded - and what can be learned from things that didn't work.

Kelley & Kelley, 2014

Albert Bandura used the process of guided mastery - series of small successes - to help people gain courage and overcome deep seated phobias

Kelley & Kelley, 2014

Doubts in one's creative ability can be cured by guiding people through a series of small successes

Kelley & Kelley, 2014

Appendix F Interviews

Semi-structured interviews – education interview 1, 2, 3, 4

<p><i>How do you experience teaching these lessons?</i></p>	<ul style="list-style-type: none"> - Fan of the idea behind GoFuture, but hassle to work with the platform. Surprised with how little students seem to know about working digitally. - It is more for fun for the students so I treat it in that way. But, this makes it hard to activate them sometimes. I am also less strict with them because of this - Teaching entrepreneurship is the most fun thing you can do. You get a lot of freedom
<p><i>What other classes do you give?</i></p>	<ul style="list-style-type: none"> - I am the headmaster besides this, so no other classes. But, before I became headmaster, I used to teach economics - Besides this I also teach economics at the upper classes - Besides entrepreneurship also practical lessons about beauty
<p><i>Do you experience these classes differently? Why?</i></p>	<ul style="list-style-type: none"> - Yes, I approach them as more of a fun extra experience for 2 hours a week. But, at the moment it is still quite theoretical - Students need the time and freedom to release their energy. In other classes they do not have the space to do so. Here you can give them this time. If you let them go for a while, they will eventually start working
<p><i>How do you prepare your lessons, and how does GoFuture support you in this?</i></p>	<ul style="list-style-type: none"> - They finish way to quickly with the platform. We really have to prepare some extra assignments and short lectures besides the platform, otherwise they are finished way to early - I do prepare some introductions at beginning of class but that's it. - I don't have a lot of time for this. We thought the lessons would be complete when we started with GoFuture, but this is not the case - I use GoFuture as 'vending wall', you take modules out of it and create your own program around it. Other teachers use GoFuture as step-by-step guideline - If you finish the assignments handed by GoFuture too quickly, you do not challenge your students enough - The lessons are also dependable of the students - during the class your planning will definitely change
<p><i>Why did you start with giving these lessons?</i></p>	<ul style="list-style-type: none"> - I stand by the goals of GoFuture, but I do not see them happening directly yet. Besides this, I think as a student I would have enjoyed these types of classes - We are not sure if we want to continue with GoFuture actually. We do not see the benefits at the moment - It is a part of the entrepreneurial track the students can choose for (besides engineering & design and sports)

<p><i>How do you see the 21st century skills, like creativity, reflection and initiative-taking, reflected within the GoFuture platform?</i></p>	<ul style="list-style-type: none"> - Not really, some of the assignments go into this but the platform is not inviting for this. Mostly theoretical - It can be improved on all aspects now, but it is difficult with these type of students. It is hard for them to take initiative - Students could use their creativity more in reaching a specific target group and how to differ themselves from others. How for example you could use TikTok for this etc. - You need to push students and throw them in the deep to give them confidence, then the initiative taking will improve - You have to see this as preparation for MBO, then you have to work for yourself as well.
<p><i>How do you currently apply creativity within your classroom?</i></p>	<ul style="list-style-type: none"> - Before teaching, I used to work as a consultant, and I will start with this again besides teaching. In this field, you really have to be creative in how to solve problems within a company.
<p><i>Other interesting quotes</i></p>	<ul style="list-style-type: none"> - When a student is stuck, they just stop and wait for help. If I were them, I would just look it up online on google. But they do not think like that - Some students are motivated, they know why they are here and what they want. Other students are just here because they had to choose something - It would be nice if they would work on projects together, but that is hard to arrange. They could motivate and inspire each other - Some students prefer working at home, and finish their assignments there. Others only work in class. - We prepared an assignment about making a persona. They enjoyed this very much - Most teachers have a negative energy - they are not open to work with creativity - The only goal of a school nowadays is getting your degree. - Parents complain a lot, they do not like change - It is hard to find a balance between giving students freedom to let go of their energy and when it is too much - It is a game of collaboration between the students and teacher, but if the students do not play along, it will not be fun - When you enter the world of experience of the student, you can start talking about their passions and future - I enjoy it more to eat lunch with the students. The teachers have negative energy - They first need the right mindset and confidence before they can start working on their own. - All teachers are different, it is hard to find a solution to make creativity better for all

Semi-structured interviews – additional education interviews 5, 6

<i>Could you explain how you work within your organisation?</i>	<ul style="list-style-type: none"> - I develop a training program that aims to motivate kids to start doing & exploring & making. - I am teaching art & culture at secondary education level.
<i>How do you approach a lesson?</i>	<ul style="list-style-type: none"> - We try to let students experience the fun of making something. When you make something yourself, you can be proud of it and surprise yourself. These experiences are very valuable. - Students should do something to learn, not only see or hear or read. - You have to train the capacity to think outside of the box, this is not being trained enough. You can do this by asking open questions, like why, and how? - The vision of our school is: leadership, amazement, community and self-knowledge. Students get education that fits their personal needs, for them to excel in their abilities. - Students are autonomously curious when you ask them a relevant question in which they get freedom to explore - Students reflect on each other's work and their own work - Feedback is reframed in a positive way: what aspects could be further improved?
<i>What attitude do teachers have towards your creative approach?</i>	<ul style="list-style-type: none"> - Teachers do not think they have enough time to let students explore within the so-called 'messing around' phase. - Teachers are used to having authority. They do not like it if students knows more about a specific topic, because it makes them vulnerable.
<i>Do teachers have creative confidence?</i>	<ul style="list-style-type: none"> - Some teachers never experience anything else than the education system, they start with teaching straight after they finish school. It is not weird that they do not know how to step out of their comfort zone, because they literally have never experienced something else.
<i>What attitude do students have towards your creative approach?</i>	<ul style="list-style-type: none"> - Students are often worried with looking for the 'right' answer, instead of thinking about the question itself. They are not trained to think in this way. - Some students go all the way when they enjoy an exercise, some just do the bare minimum to succeed (in their eyes what means 'enough')
<i>How do you describe the attitude of students towards creativity?</i>	<ul style="list-style-type: none"> - Students struggle with taking initiative. - Students need guidance to get started
<i>Do students have creative confidence?</i>	<ul style="list-style-type: none"> - No, creative confidence is lacking, maybe even not present.
<i>Other interesting quotes</i>	<ul style="list-style-type: none"> - Parents are afraid for a lot of things, they rather have their kids just digitally consume YouTube video's than make something. - Schools run on a testing system, in which development goes very slowly. - We unlearn that there could be 100 solutions to a question, and sometimes there is more than 1 right answer that the teacher wants to hear. This kills creativity. - It is important to think about the assessment method of the students. - Parents are open for the assessment approach, but you need to have more development talks about the students

Expert interviews

Interview Expert 1

<i>Kan je iets over jezelf / je werk vertellen?</i>	Werk bij Saxion – ontwikkeling business incubator (en docenten onderwijzen in ondernemend leren)
<i>Kan je uitleg geven over het soft-support model wat je hebt ontwikkeld?</i>	<p>2 assen:</p> <p>1: inhoud - business / persoon</p> <p>2: dedictief / non-dedictief (om te testen, zie bijlage meetsysteem)</p> <p>doel: verschillen vinden in onderwijs (intended / implemented / attained) - zo testen of doel gehaald wordt</p> <p>systeem voor feedback geven - op 1 lijn (hoe denk je dat je het geeft / hoe ervaar jij als student het?)</p>
<i>Zijn er aanbevelingen / bronnen om naar te kijken of om mee te nemen in mijn project?</i>	<ul style="list-style-type: none"> - Luke Pitterway - Engaged scholarship – Andrew van der Ven - Hella Nehrgad – ondernemend onderwijs - QAA rapport – education for / through / about entrepreneurship - DARE: Dutch Academy on Research Entrepreneurship
<i>Zijn er voor mijn project bepaalde cruciale overwegingen die ik in gedachte moet houden?</i>	<ul style="list-style-type: none"> - wat is mijn persoonlijke perspectief / aanpak: iteratief / linear? (evacuation / causation) - Welke begrippen doel ik op? (ondernemend leren / leren ondernemen etc.)
<i>Overige opmerkingen</i>	<ul style="list-style-type: none"> - Effectuation aanpak / effectual ask (Saras Sarasvathy, Herban Simon) - "Niet iedereen is een ondernemer, is ook al heel nuttig als je mensen kan leren dat ze dit niet zijn." - "Bijdragen aan de maatschappij is tegenwoordig een groter belang voor ondernemers dan winst maken"

Interview Expert 2

<i>Kan je iets vertellen over je werk / onderzoek?</i>	<ul style="list-style-type: none"> - Gepromoveerd op ondernemerschap en innovatie aan de Universiteit Maastricht - Onderzoek naar ondernemerschapsonderwijs, met name gamification en educational escape rooms.
<i>Zijn er interessante inzichten die ik uit jou onderzoek kan meenemen?</i>	<ul style="list-style-type: none"> - "Sinds de 2e industrialisatie wordt creatief denken geminimaliseerd en rationeel denken gemaximaliseerd - Er zit een verschil tussen creativiteit van het individu (creatieve ideeën) en het team (empathy, emotie, trust)
<i>Zijn er aanbevelingen / bronnen om naar te kijken of om mee te nemen in mijn project?</i>	<ul style="list-style-type: none"> - Entrecomp raamwerk (RVO o2 lab) - thomas lanz & marco van gelderen - Melissa A. Schilling - Quirky: CH. the creative mind - Edam Grants - originals (group think)
<i>Zijn er voor mijn project bepaalde cruciale overwegingen die ik in gedachte moet houden?</i>	<ul style="list-style-type: none"> - Innoverend vermogen is een van de 21st century skills - activerende werkmethodes zijn steeds populairder, maar hoe ga je dit beoordelen? - incrementele innovatie (ABC + DEF) of radicale innnovatie (compleet nieuw alfabet)
<i>Overige opmerkingen</i>	<ul style="list-style-type: none"> - "Des te meer je weet, hoe creatiever je kunt zijn" - Creativiteit is de stap voor innovatie

Appendix G observations

Observer scheme – class observation 1, 2, 3

<i>How does the class start?</i>	<ul style="list-style-type: none"> - Short explanation and after that working in groups (pricing). After first assignment a class assignment about excel, going through each step together - Short explanation about personal values, after that students are individually working on their assignment - Explanation about price elasticity with whole class, after that video that explains theory bit more and discussing questions in class
<i>How are the students starting up their work?</i>	<ul style="list-style-type: none"> - Some start with the work straight away while others need some more motivation. Part is playing games on their laptop - Half of the students on their phone, other part is working and typing. They are quickly distracted and some students talk with each other - but not about the assignments - Students have own laptop, after introduction they start working on their assignment together in groups (or play games on their laptop)
<i>Do they collaborate and discuss the assignment together?</i>	<ul style="list-style-type: none"> - Yes, and also help each other when they do not understand something - Yes, they work in groups and discuss together - They are working individually, but do talk together (not about the assignment). When they have questions, they call for the teacher to explain, they do not ask each other
<i>Are there any frustrations?</i>	<ul style="list-style-type: none"> - Too much text, annoyed by the downloading & uploading process - Losing when playing games... - The platform does not work properly. They have to work with all these different programs, like teams, word excel etc and now GoFuture – this is difficult. - They struggle with technical difficulties with uploading their assignments - sometimes the assignments just disappear
<i>About what do they seem enthusiastic?</i>	<ul style="list-style-type: none"> - The Christmas market where they had to organise and sell products themselves (active learning) - not with GoFuture - After talking to them, they get excited about the idea of being an entrepreneur and having their own beauty salon. - Part of the students likes the economics part of GoFuture, others really like to go outside and explore
<i>Are there other emotions they appear to have?</i>	<ul style="list-style-type: none"> - They are low in energy, need a push to get started - Bit bored with some of the assignments - continuously asking why they need to learn that
<i>What is the atmosphere in the classroom?</i>	<ul style="list-style-type: none"> - Some guys being very distracting, others more quiet and working a bit harder - Clearly different groups in the classroom - ranging from 16 year olds that are low in motivation to 27 year olds that have a clear goal. They do not really work together and are only focussed on their own groups - Restless, lot of distractions - Low energy, continuously focussing on each other.
<i>What type of exercise are they working on? How is that going?</i>	<ul style="list-style-type: none"> - Some students seem to struggle with the big amounts of text that are in some assignments - Personal values and skills. Most students are writing things down quickly, seems like they are doing well. - Selling price and learning excel - cost calculations - Price elasticity and selling price

<i>Are there any needs?</i>	<ul style="list-style-type: none"> - Less text - If this doesn't work, they already do not want to do the other assignments - Clearer explanations - It demotivates the students to go through the different steps of downloading, using acrobat, and handing in the assignment again. - <u>Fluent process throughout the lesson and within the platform</u>
<i>Interesting quotes</i>	<ul style="list-style-type: none"> - "It takes 10 minutes to download and reupload an assignment, when the assignment only takes like 3 minutes to make. Then I already do not want to do it anymore." - About me visiting: "You chose the wrong class..." - Student: "Is het zo goed?" / "Is it correct this way?"

Semi-structured interviews – students during class observations 1, 2, 3

<i>How do you experience the GoFuture lessons? And what is your opinion about the platform?</i>	<ul style="list-style-type: none"> - It is annoying that sometimes you want to hand in an assignment and then it is gone. This is demotivating - I prefer working in teams, this is easier and clearer. This is again a new program to learn, which is annoying - I do think the assignments are quite okay, but it is mostly filling in things, so that is not very inspirational - I do like most of the assignments, I think they are valuable to find out more about myself and how it is to be an entrepreneur - I think sometimes it is a bit boring. Mostly theory and I would like to do more practical things
<i>What is the most valuable thing you learned during these classes?</i>	<ul style="list-style-type: none"> - I liked to learn how to make a logo, and be creative with this - Beginning: "I just do this because I have to." After thinking about it: "I liked to spend time on thinking about how my salon would look, and what I want to do with it in the future." ... - shows her moodboard very proudly - I like it that you learn about your personal strengths. It gives me confidence to think about this and reflect on this. - I really liked to learn about things like price calculations and the market - We went outside in the city to interview people about our ideas, this was very fun to do and we realised our target group had to be redefined - I want to be my own boss, and here you learn what you need to do and know to become this
<i>How do you approach an assignment within GoFuture? Do you see aspects like creativity, initiative taking and reflection coming back within the assignments?</i>	<ul style="list-style-type: none"> - I think you can see that in the assignments, it is different than other classes. But assignments are still quite theoretical

<p>Vind je jezelf creatief? Waarom wel / niet? / Wat maakt iemand creatief volgens jou?</p>	<ul style="list-style-type: none"> - Yes, but not in a way that I can make something myself. I can look at something and think if it looks nice, and then in which setting it would look nice. (interior) - No.. (starts to giggle) (conversation is disrupted by teacher) - Yes, I think I am creative. I think you need to be creative to solve situations you are not prepared for. - Yes, we designed our own logo and name - Someone is creative when they can think of new ideas - When I think about creativity, I think about someone that is good at drawing
<p>Do you think it is important to be creative as an entrepreneur? Why (not)?</p>	<ul style="list-style-type: none"> - Yes, for the branding of your company and idea's - Yes, some friends of mine have their own company and they say if you are creative you will get there, even if it is hard. - Yes, then you can come up with new ideas. You need to have something new to be a successful entrepreneur - Yes, definitely as an entrepreneur. You have to know how you can be different from others. I want to differ by giving the luxurious experience to customers - providing them with champagne (if they are 18 of course).

Observations and semi-structured interviews – students during class observation 4

<p>Observations</p>	<ul style="list-style-type: none"> - Students have created a business card in the previous lesson, and discuss these at the beginning of the class. They then get the assignment to redesign the student lounge room in school. The teacher gives them the freedom to do - It takes students some time to start with the creative task, but after that they are in focus mode and work focussed for more than half an hour. - There is one students that is trying to distract the others, but others shush him down, because they want to work on the assignment. - Students feel comfortable to present their ideas to the classroom - When the teacher asked if students would like more creative lessons instead of learning from books, almost all students raised their hands.
<p>What makes someone creative according to you?</p>	<ul style="list-style-type: none"> - Well, I believe when someone is good at drawing - Someone is creative when they have many ideas
<p>How do you approach this task?</p>	<ul style="list-style-type: none"> - We started looking online for inspiration pictures and are creating a moodboard - We made pictures of the room and are now creating a floor plan - We first brainstormed and made a list of possible cool things we could implement, and now we are making an floor plan
<p>Interesting quotes</p>	<ul style="list-style-type: none"> - We're not done.. Can we get a little bit longer to finish our assignment, please? - Stop being so annoying, just start working – student to other student - Will this also be graded? - I can present! Look at the cool room we designed - Teacher to students: It's about your future. You can already start now if you want. The school is here for you, not for the teachers. If you want to change something, you have to go after it.

Appendix H Questionnaire

The image on the right shows the results of the survey. The average rating of the students creative self-image and creative self-efficacy are both just above average (3), or 'do not agree / disagree'. In most questions, more students rated themselves higher than average instead of lower, but often the most used answer was 3 (do not agree / disagree). This could be, because students mentioned that the questions were still quite difficult for them to answer and they did not exactly know what to respond. For creative self-image, each question was answered quite similar, with most students rating themselves with 3-4, and some outliers. For creative self-efficacy, most students often answered with a rating of 3, but some questions differed. For the question 'I have a big imagination in comparison to my friends', a lot of students rated themselves quite high (4-5), with only 3 student rating themselves 3 or lower. The students also scored themselves quite high in the question 'I can use creative thinking to solve problems'.

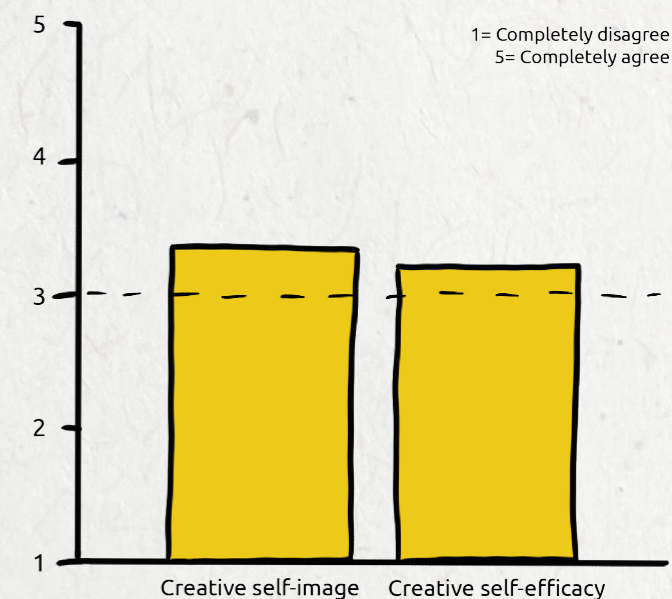
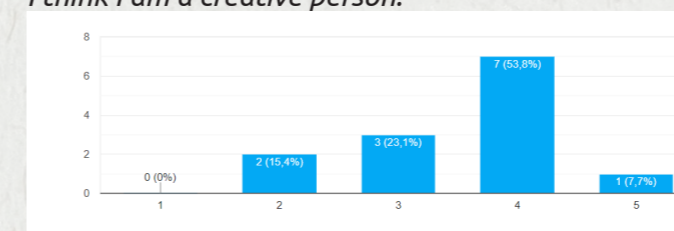


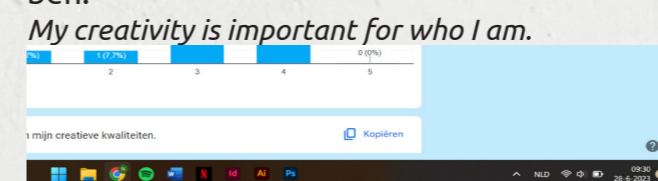
Figure: Graph of the average scores of creative self-image and creative self-efficacy among the students

Survey questions and the responses

(1) Ik denk dat ik een creatief persoon ben.
I think I am a creative person.

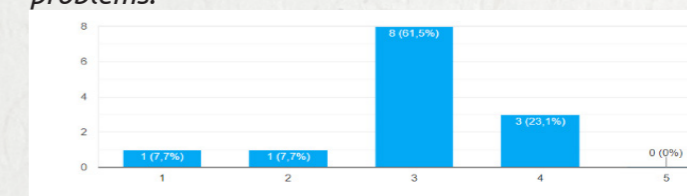


(2) Mijn creativiteit is belangrijk voor wie ik ben.
My creativity is important for who I am.

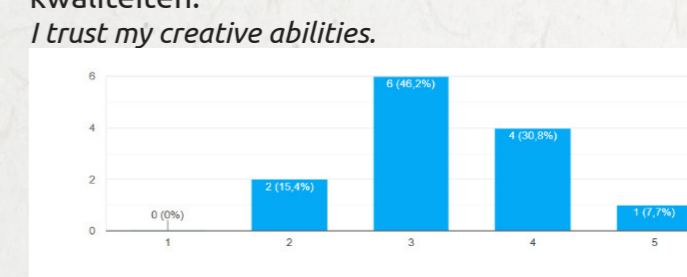


(3) Ik weet dat ik ingewikkelde problemen efficiënt kan oplossen.
I know I can efficiently solve even complicated problems.

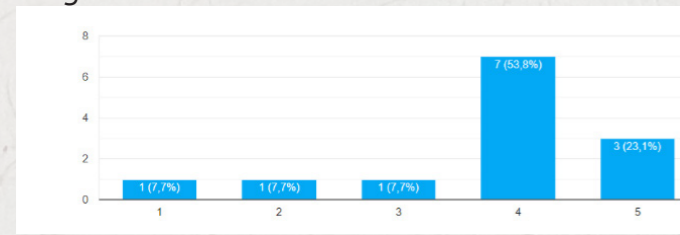
I know I can efficiently solve even complicated problems.



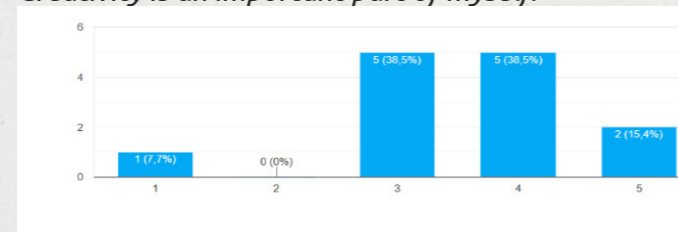
(4) Ik heb vertrouwen in mijn creatieve kwaliteiten.
I trust my creative abilities.



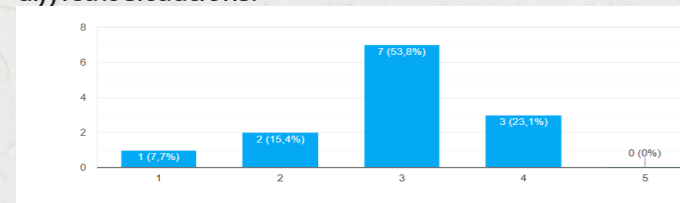
(5) Ik heb een grote fantasie in vergelijking met mijn vrienden.
Compared to my friends, I am distinguished by my imagination.



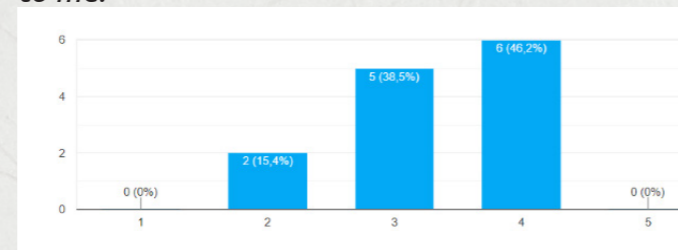
(10) Creativiteit is een belangrijk deel van mijzelf.
Creativity is an important part of myself.



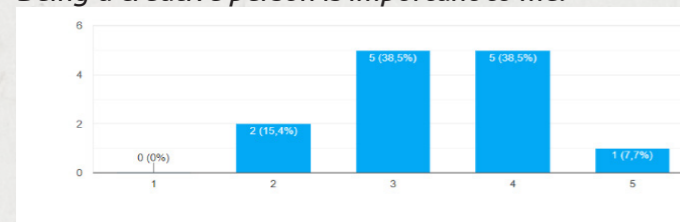
(6) Ik heb vaak bewezen dat ik goed met moeilijke situaties om kan gaan.
Many times I have proved that I can cope with difficult situations.



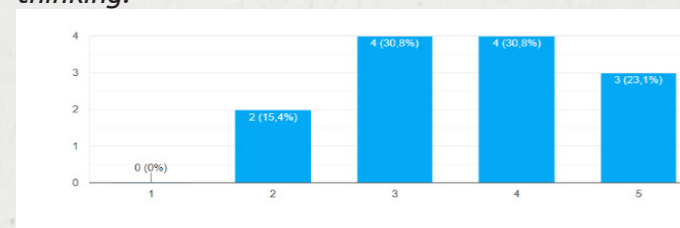
(11) Ik vind het belangrijk om vindingrijk te zijn.
Ingenuity is a characteristic which is important to me.



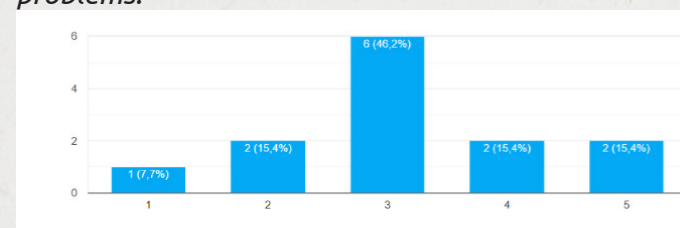
(7) Het is belangrijk voor mij om creatief te zijn.
Being a creative person is important to me.



(8) Ik kan creatief denken gebruiken om problemen op te lossen.
I am sure I can deal with problems requiring creative thinking.



(9) Ik stel vaak originele oplossingen op problemen voor.
I am good at proposing original solutions to problems.



Appendix I Co-creation

Co-creation setup

Activity	Goal	Notes
Introduction & string intro	Making everyone comfortable	Create safe & open environment
Warm up exercise: 30 circles	Loosening creativity & see how comfortable the teachers are	Discuss how it went - what was everyone's approach
Mind mapping	What do the teachers currently know and think of creativity?	1. Why is creativity (not) important? 2. When do you use creativity? 3. What is creativity?
Clustering attitudes	Clustering entrepreneurial and creative attitudes to see their perspective on these.	Discuss afterwards what attitudes they see as important for entrepreneurship / creativity and themselves
"Restating the problem"	Creating personal definition: "For me, creativity is ..."	Discuss shortly, then explain that there is still no clear definition of creativity - see their personal perspective
Break		
Purge	How can you use creativity in the classroom?	
Customer Journey Mapping	Use timeline and make toolkit to visualise 2 lessons: One were teacher used creativity and lesson went well and one were teacher did (not) use creativity and lesson could have been improved	Individual: make toolkit - images, words, icons & emotions
Discussion / brainstorm	Present the timelines and discuss possibilities for improvement & tips	What went well / wrong? How could you approach this? How could GoFuture help to support you?
Wrap up		

Co-creation outcomes

Question	Goal	How?	Insights (observations / outcomes)
What do the teachers know about creativity?	Know their basic knowledge: where are knowledge gaps and where do they need support – to gain more confidence to support their students	Mind mapping and personal definition of creativity	<ul style="list-style-type: none"> The teachers used quite practical example to describe when to use creativity, but they created a diverse overview ranging from finding solutions and making lesson plans to communicating with students The answers to 'What is creativity?', were all quite similar, with topics like 'thinking out of the box', 'doing something different' and 'broadening your perspective'

<p><i>What is their attitude towards creativity?</i></p>	<p>Are they open towards creativity and do they think it is important - with a negative attitude, they will never be able to teach about creativity - positive & enthusiastic attitude towards creativity is the basis for creativity</p>	<p>Mind mapping – clustering attitudes</p>	<ul style="list-style-type: none"> - They all think creativity is very important to make change, think further than the known - create new questions and new answers - "Creativity is everywhere, also in cooking, raising your children etc. It is never not important." - All teachers thought that all attitudes given to them were important for an entrepreneur, but the main focus for both was on leadership skills and development / inventing skills - For creativity, they also thought everything was important, but one group had the cluster 'creativity', and that was their main focus. - It can be concluded that all attitudes appear to be important for the development of entrepreneurial behaviour, and that creative attitudes are an important aspect contributing to this - Their personal attitudes differed, but innovation skills, collaboration / social skills and emotional skills were mentioned most often
<p><i>How do teachers currently use creativity within the classroom?</i></p>	<p>What goes right, what needs improvement - to see their perspective on using creativity in the classroom & talk about it - find knowledge gaps - gain confidence</p>	<p>Share experiences through customer journey mapping</p>	<ul style="list-style-type: none"> - 'Students do not take initiative themselves, you really have to stimulate & motivate them' - they need a first push - It was way easier for all the teachers to think of a lesson that went well, and they had more specific examples for this - 'It is way more fun to give an interactive and varied lesson, but this takes time to prepare and sometimes you just do not have enough time or energy' - 'It is important to give them a little push, but also to let them free and experiment' - The teachers also mentioned that they thought the session was interesting for them and they were inspired for their own classes
<p><i>How confident are teachers currently relating to their own creativity?</i></p>	<p>do they need support to gain personal creative confidence - so they can support students in their creative confidence & creative behaviour</p>	<p>observing & discuss during session - how do they approach the activities</p>	<ul style="list-style-type: none"> - They seemed open to it, and they had basic knowledge, but I am doubtful how often they really use this within their lessons - They mentioned that they think it is way more fun to give creative lessons, but also asks for a lot of work and preparation from them - The exercises went well, they all were involved and open to try out. One teacher did mention 'Oh no, but I really can't draw.' Another teacher mentioned that she was insecure about her expertise and knowledge and a bit nervous for the session - They gave the implication that they were open to do more with creativity personally & for their classes, but also that they sometimes did not know how / with what time - One teacher mentioned that they sometimes wanted to do a spontaneous activity when the class was not listening, but they didn't have the guts to try this

<p><i>Interesting quotes</i></p>	<ul style="list-style-type: none"> - "Currently, methods are about 80% theory and 20% practice, but in real life this is the other way around. The methods need to be more focussed on practice, this is also way more fun for the students" - "If a student is not motivated, it has influence on the whole class. But I do not like it to be strict and do something about it. It is all a balance." - "I would prefer to take them outside when the class does not go as planned, but I haven't dared to try that yet." - "School should be about learning; learning from your mistakes and having space to make mistakes. This is something that I currently do not see enough" - "It is the most fun for both you and the students to be active, but you have to find a balance with preparing time." - "It is the most fun for both you and the students to be active, but you have to find a balance with preparing time." - "GoFuture could be of help by giving more interactive assignments and less text - they just do not look at the toolboxes when they have to read too much. They are very easily distracted." - "You have to widen their perspective. If they say it is difficult for them to count, I will let them do karaoke - there you also need rhythm and counting." - "I always say that no answer is wrong, to stimulate students to speak up. If they do give a wrong answer, I will say that it is a right answer to another scenario." - "We are living in a world where you are not allowed to make mistakes. Luckily, a change is coming." - When a student comes to me with a question about a wrong answer, I'll let them explain what they did and then they already realise that they did something wrong during the explanation."
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Pictures during the sessions and of the results

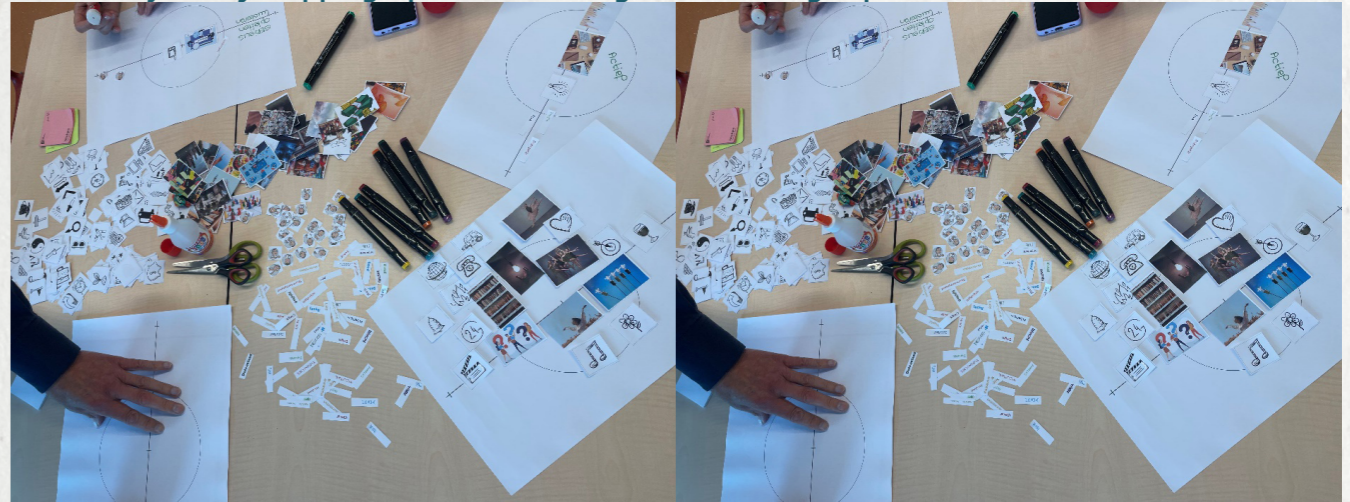
Mind mapping



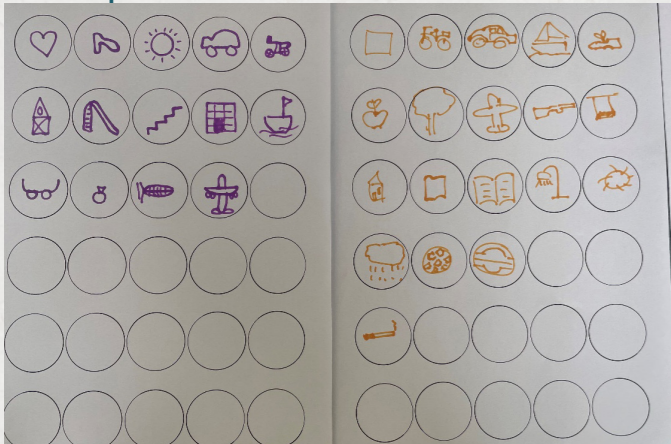
Creativiteit betekent voor mij:

- op meerdere manieren met dingen / studenten / collega's omgaan
- op meerdere manieren les te kunnen geven
- studenten te stimuleren
- mijn werk te doen

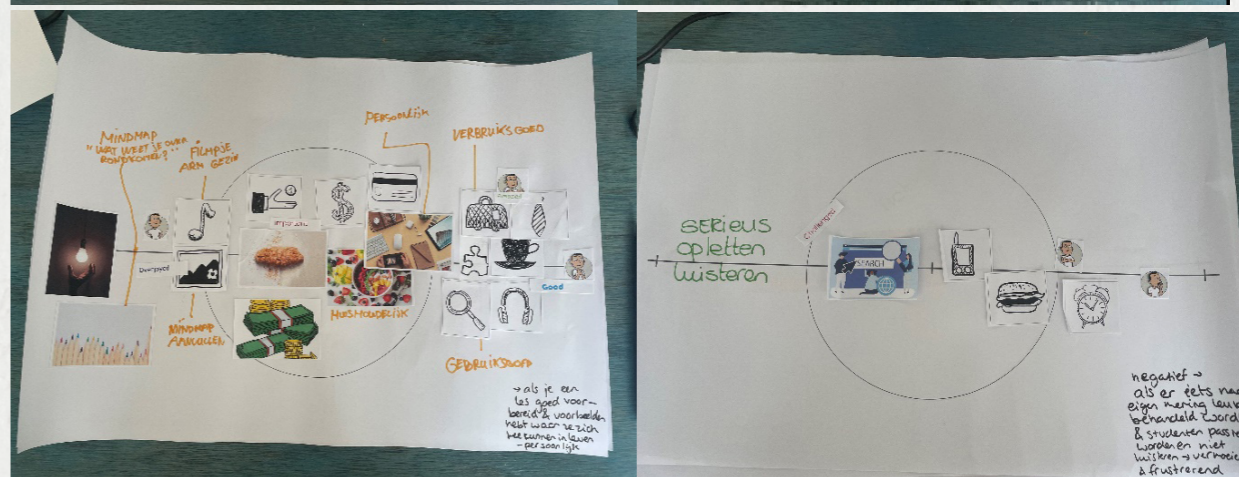
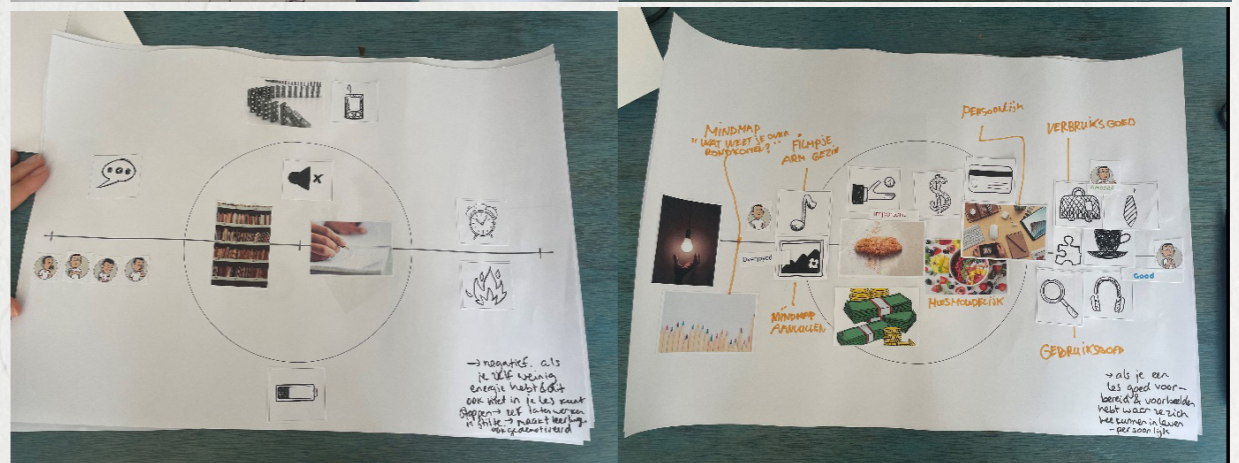
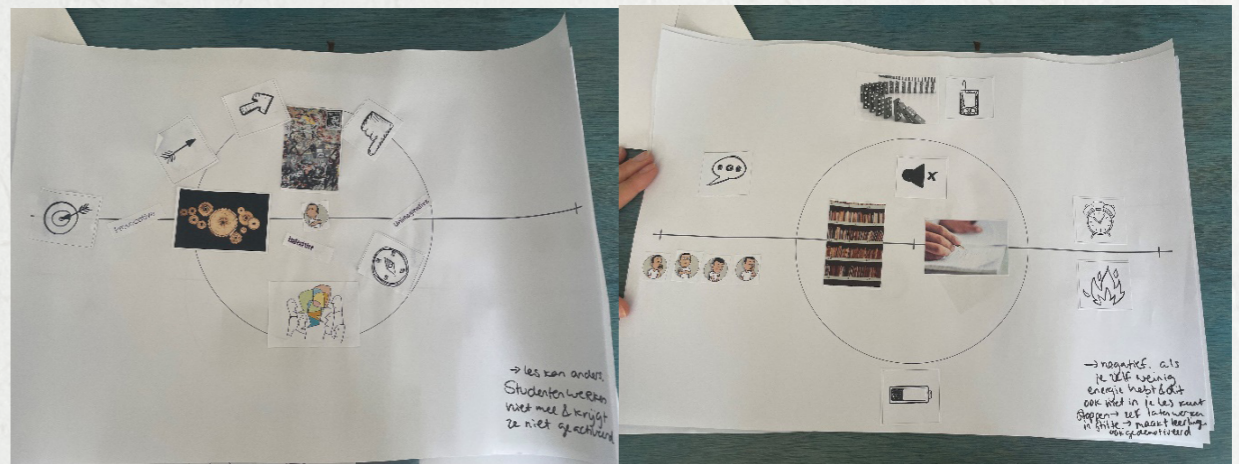
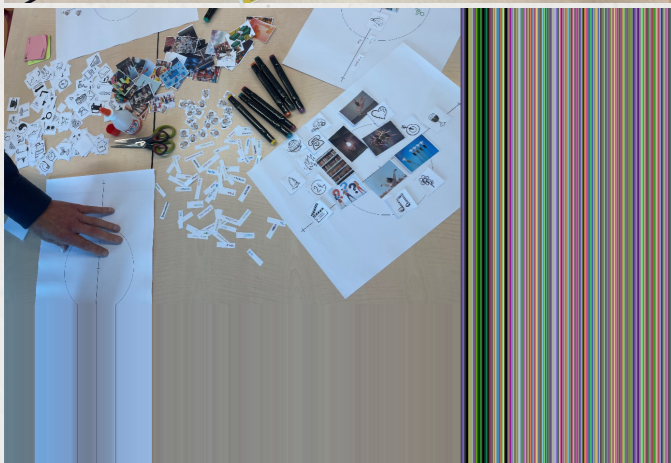
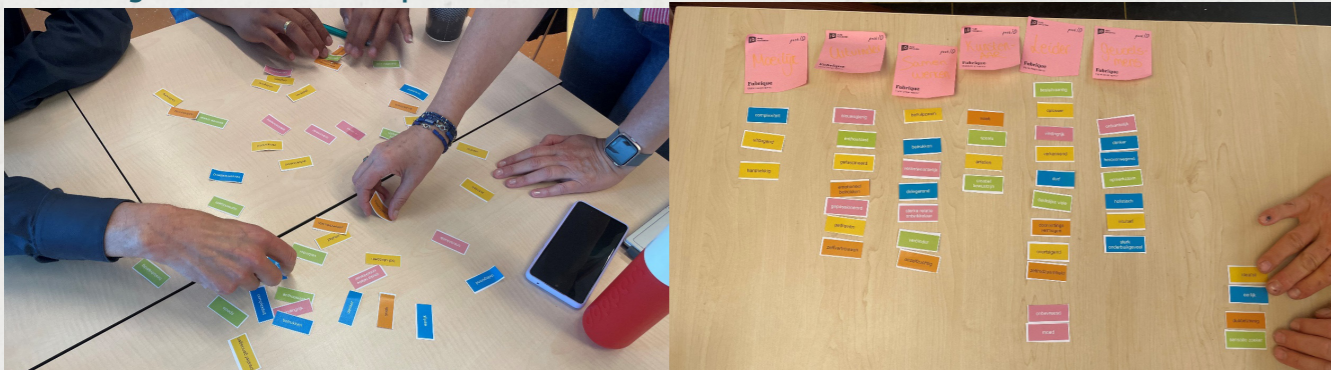
Customer journey mapping – positive and negative teaching experience



Warm up exercise



Clustering creative and entrepreneurial attitudes



Appendix J Analysis stakeholders - field research

Restrictions of the school system

Failure

rational thinking is maximised - no room to make mistakes and learn from these

Expert interview

Early failure can be crucial to success in innovation, because the faster you find weaknesses during an innovation cycle, the faster you can improve what

Literature

Creative people tend to: - Redefine problems in new ways in order to seek solutions - Take sensible risks and accept failure as part of the innovation process - Confront the obstacles that arise when challenging the status quo

Literature

We live in a world in which it is not okay to make mistakes, but I see some change coming up

Co-creation

School should be about learning from making mistakes instead of doing it right. I currently do not see that often enough

Co-creation

In a similar way, we use a step-by-step progression to help people discover and experience the tools and methodologies of design thinking, gradually increasing the level of challenge to help individuals transcend the fear of failure that blocks their best ideas

Literature

Failures are an important part in learning entrepreneurship

Literature

- Tolerate ambiguity when they are not certain that they are on the right path - Continue to grow intellectually rather than let their skills or knowledge stagnate

Literature

We give students a chance to fail as soon as possible, in order to maximize the learning time that follows. We let them reflect on what succeeded - and what can be learned from things that didn't work.

Literature

fear to overcome: failure - fear of being judged, fear of getting started, fear of the unknown

Literature

Judgement

Well-meaning teachers and parents play a part when counseling young people toward conventional professions, sending the subtle message that occupations involving creativity are too risky and out of the mainstream

Literature

We live in a world in which it is not okay to make mistakes, but I see some change coming up

Co-creation

problem of teaching creativity is a matter of removing ten mental blocks:

1. The right answer
2. That is not logical
3. Follow the rules
4. Be practical
5. Avoid ambiguity (multiple interpretations possible)
6. To Error is wrong
7. Play is frivolous
8. That is not my area
9. Don't be foolish
10. I'm not creative

Literature

As schools cut funding for the arts and high-stakes testing becomes more pervasive, creativity itself is devalued, compared to traditional core subjects like math and science. Those subjects emphasize ways of thinking and problem solving that have a clear-cut single answer, while many real-world twenty-first-century challenges require a more openminded approach

Literature

School should be about learning from making mistakes instead of doing it right. I currently do not see that often enough

Co-creation

guidelines for brainstorming (not criticizing ideas, building on each other's ideas, free association) help with improving creative self-efficacy

Literature

fear to overcome: failure - fear of being judged, fear of getting started, fear of the unknown

Literature

"You chose the wrong class." - student

Student interview

the key appears to be the attitude of deferring judgement - which triggers ideational skill in quantity of ideas generated.

Literature

Courage

"I would love to take them outside once for a class, but I have never dared to do that"

Co-creation

It is important to have courage in your class, ans show your feelings to students but also listen to their feelings

Co-creation

Teachers are used to having authority. They do not like it if a students knows more about a specific topic, because it makes them vulnerable.

Education interview

Some teachers never experience anything else than the education system, they start with teaching straight after they finish school. It is not weird that they do not know how to step out of their comfort zone, because they literally have never experienced something else.

Education interview

When our self-worth isn't on the line, we are far more willing to be courageous and risk sharing our talents and gifts. One way to embrace creativity is by letting go of comparison

Literature

Albert Bandura used the process of guided mastery - series of small successes - to help people gain courage and overcome deep seated phobias

Literature

I do not have a lot of courage, but I don't think I need this really

Co-creation

Result-oriented

School should be about learning from making mistakes instead of doing it right. I currently do not see that often enough

Co-creation

We live in a world in which it is not okay to make mistakes, but I see some change coming up

Co-creation

rational thinking is maximised - no room to make mistakes and learn from these

Expert interview

As schools cut funding for the arts and high-stakes testing becomes more pervasive, creativity itself is devalued, compared to traditional core subjects like math and science. Those subjects emphasize ways of thinking and problem solving that have a clear-cut single answer, while many real-world twenty-first-century challenges require a more openminded approach

Literature

Students are often worried with looking for the 'right' answer, instead of thinking about the question itself. They are not trained to think in this way.

Education interview

We unlearn that there could be 100 solutions to a question, and sometimes there is more than 1 right answer that the teacher wants to hear. This kills creativity.

Education interview

Schools run on a testing system, in which development goes very slowly.

Education interview

"Is it correct like this?"

Observation

Problems teachers

Time

'It is nice to give creative and varied lessons, but sometimes I do not know how and with what time'

Co-creation

'It is way more fun to give an interactive and varied lesson, but this takes time to prepare and sometimes you just do not have enough time or energy'

Co-creation

I do not have time to prepare these lessons - I thought we would get a full lesson package

Education interview

You have to find a balance between preparing your lesson and having enough time to also do other things

Co-creation

Teachers do not think they have enough time to let students explore within the so-called 'messaging around' phase.

Education interview

Experiencing & variation

'It is nice to give creative and varied lessons, but sometimes I do not know how and with what time'

Co-creation

Students should do something to learn, not only see or hear or read.

Education interview

'It is way more fun to give an interactive and varied lesson, but this takes time to prepare and sometimes you just do not have enough time or energy'

Co-creation

We try to let students experience the fun of making something. When you make something yourself, you can be proud of it and surprise yourself. These experiences are very valuable.

Education interview

Problems students

Motivation

Entrepreneurial education should focus on "developing creativity, critical thinking and reflection among individuals, which in turn can have a profound influence on both their motivation and ability to develop entrepreneurial knowledge throughout their professional lives" (Politis 2008)

Literature

Students are working, but quickly distracted by others / their phone / games

Observation

'Students do not take initiative themselves, you really have to stimulate & motivate them'

Co-creation

Students get excited about the idea of being an entrepreneur one day (having beauty salon)

Observation

It would be nice if they would work on projects together, but that is hard to arrange. They could motivate and inspire each other

Education interview

"There is too much text in the assignments"

Student interview

"The assignments are finished quickly, it takes more time to upload them then to make them"

Observation

"If it doesn't work, they give up and just don't do the assignments anymore"

Education interview

The role of personal motivation and goal-setting appeared to be highly significant

Literature

The assignments are now mostly filling in things, which is not very inspirational

Education interview

You need extra lectures and assignments to fill up the classes - students are done way too quickly

Education interview

"Confidence and self-belief" - The motivation to achieve and consequent goal setting seemed to stimulate learning

Literature

"You chose the wrong class." - student

Student interview

Initiative

'Students do not take initiative themselves, you really have to stimulate & motivate them'

Co-creation

Students need guidance to get started

Education interview

Some students go all the way when they enjoy an exercise, some just do the bare minimum to succeed (in their eyes what means 'enough')

Education interview

It is hard for students to take initiative

Education interview

Students struggle with taking initiative.

Education interview

Current GoFuture lessons

Theory

Currently, teaching methods are 80% focussed on theory and 20% practice, that should be the other way around

Co-creation

The platform is still quite theoretical, would be nice if it would be more experiential

Education interview

The assignments are different then in other classes, but they are still quite theoretical

Education interview

I would like to do more practical things instead of theory

Education interview

Platform is not inviting for creativity at the moment, mostly theoretical

Education interview

Text

GoFuture could be of help with adding more interactive lessons and not a lot of text

Co-creation

"There is too much text in the assignments"

Student interview

Assignments

Class starts with short explanation, after that students work on their assignments on their laptop

Observation

"The assignments are finished quickly, it takes more time to upload them then to make them"

Observation

Sometimes the assignments are difficult to understand

Observation

The assignments are different then in other classes, but they are still quite theoretical

Education interview

"If it doesn't work, they give up and just don't do the assignments anymore"

Education interview

The assignments are now mostly filling in things, which is not very inspirational

Education interview

You have to train the capacity to think outside of the box, this is not being trained enough. You can do this by asking open questions, like why, and how?

Education interview

You need extra lectures and assignments to fill up the classes - students are done way too quickly

Education interview

Inspiration

It would be nice if they would work on projects together, but that is hard to arrange. They could motivate and inspire each other

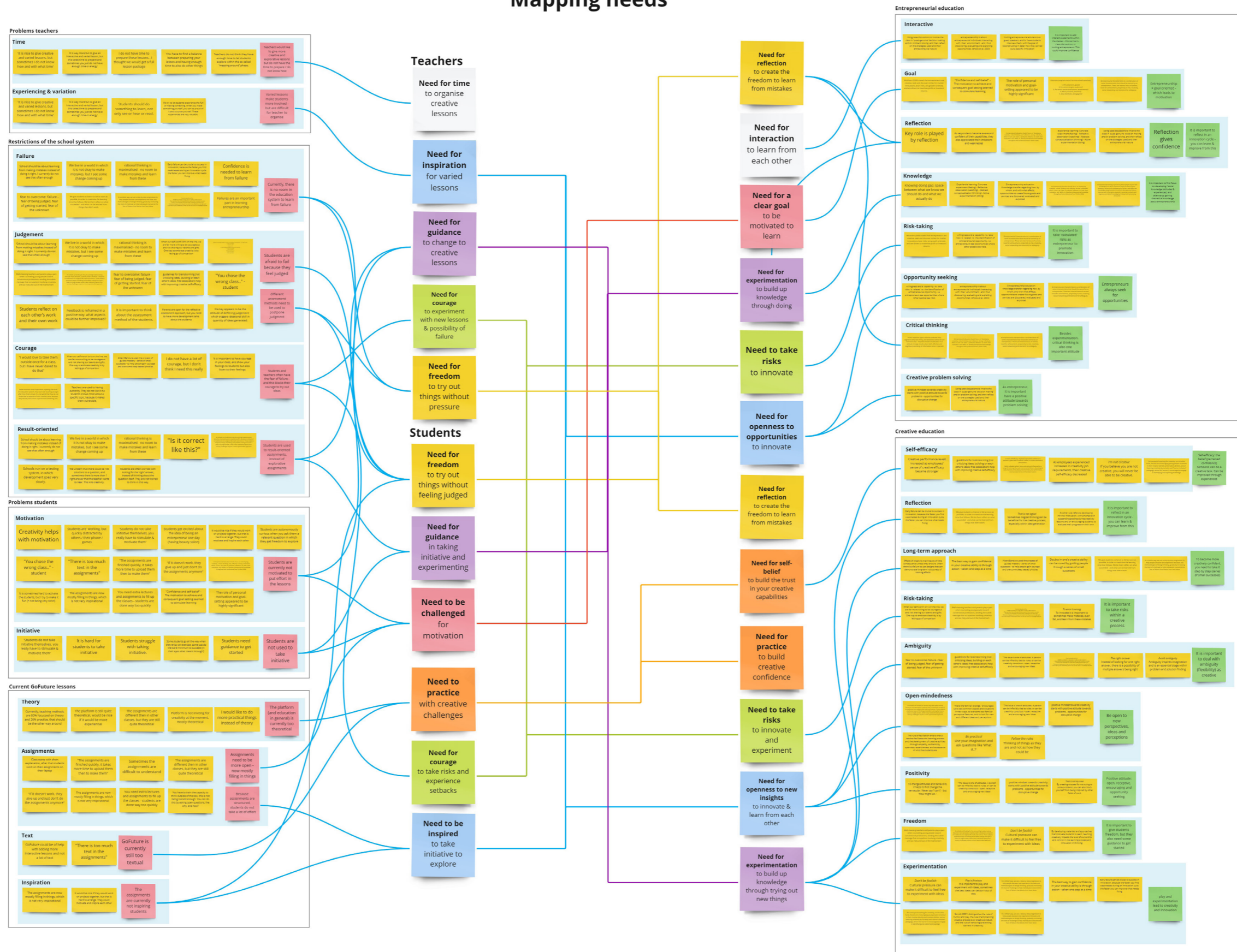
Education interview

The assignments are now mostly filling in things, which is not very inspirational

Education interview

Appendix K Mapping needs

Mapping needs



Appendix L Harris profile

The design should...

- | | |
|--|--|
| <ol style="list-style-type: none"> 1. ... assist students in developing creative behaviour
<i>client</i> 2. ... lead to higher creative confidence in both teachers and students
<i>client</i> 3. ... fit within the context of an experiential learning approach
<i>need research</i> 4. ... be a continuous learning process
<i>need research / paradox</i> 5. ... motivate students and teachers to be creative
<i>paradox / desirability</i> | <ol style="list-style-type: none"> 6. ... assist teachers in creating the needed freedom to act creatively
<i>paradox / desirability</i> 7. ... have a low threshold for usage for teachers
<i>paradox / desirability</i> 8. ... combine the digital platform with physical elements
<i>paradox</i> 9. ... be easily implementable within the current GoFuture platform
<i>feasibility</i> 10. ... be used without further guidance from GoFuture (self-learning)
<i>feasibility / viability</i> |
|--|--|



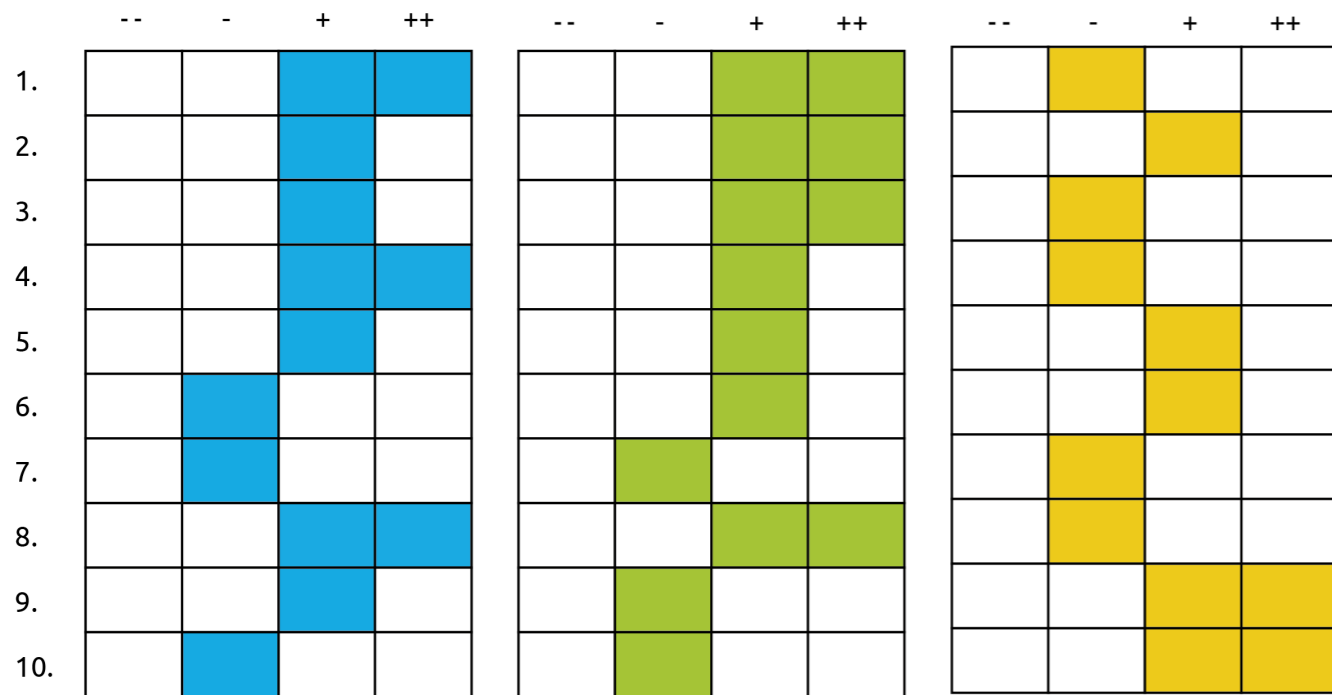
Inspire to innovate



Risk-Reward



Shifting Judgment



Appendix M Risk experiments

Failure sharing experiment

The questions that were asked within the experiment sessions are visible below. The first questions are derived from the assignment created by Beghetto (2018). The reflection questions are self-generated. The answers of the participants about their favourite failures were discussed in a confidential setting, and cannot be shared. The insights were mostly gathered within the reflection questions about the experiment, the feelings they had and their learnings, and the participants agreed to share these.

Exercise 'favourite failures'	
What is your favourite failure?	-
What happened when you failed?	-
How did you feel at that moment?	<ul style="list-style-type: none"> - I felt like a failure, and a bit embarrassed - I was scared and uncomfortable. But later I could laugh about it - I felt stupid and guilty - It made me feel insecure - Stupid, but I quickly thought it was actually quite funny
What did you learn from this failure?	<ul style="list-style-type: none"> - I learned that it is important to straight away get up again and continue, because otherwise it will become harder and harder - Sometimes faster is not better.. and experiencing failure within a team makes it feel less heavy. - Knowing where to set my boundaries - Everyone is busy with their own things, they forget your failure quick enough so do not worry about it - Practice makes perfect
Why is this your favourite failure?	-
Reflection questions	
Do you mind failing? Why?	<ul style="list-style-type: none"> - Yes, I feel really awkward when I fail (2x) - Yes, it makes me feel insecure - Yes, but mostly when other see me fail - It depends on the situation, but it is never fun to fail. You have the urge to succeed at everything, but this is not always realistic.
Do you often take risks?	<ul style="list-style-type: none"> - No, I always calculate my risks. (2x) - I often take risks without realising I take a risk. After the action, I look back and think 'wow, that was risky'. - No, I do not really like taking risks - No, I am very risk-averse. I always think a long time before doing something. This story was the only story I could think of that I really did not think before doing something.
Would you like to take more risks?	<ul style="list-style-type: none"> - Not really (4x) - Sometimes I would like to take more risks (within my profession), and I am trying to work on this, by stepping out of my comfort zone.

<i>How do you feel about failure and risk-taking after sharing these stories?</i>	<ul style="list-style-type: none"> - I feel really uncomfortable when I have to think about my past failures, and definitely when I have to share them. - I really do not want to relive my failures - I do not really mind sharing them, because I do not feel awkward about them anymore. But it does not really change my perception of failure. - I do not mind sharing my story, because I now think it is a funny story. - I still feel a bit judged by the people that are listening to my story now. It is still uncomfortable and awkward.
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Personal risk experiments

During my ideation, I realized that I myself am quite risk-averse. To better understand what it means to take risks and (possibly) fail, I wanted to experience it myself. I did this within different contexts and situations, to find out what differs the different risk experiences from each other, and if they all can be relevant within the context of my graduation project.

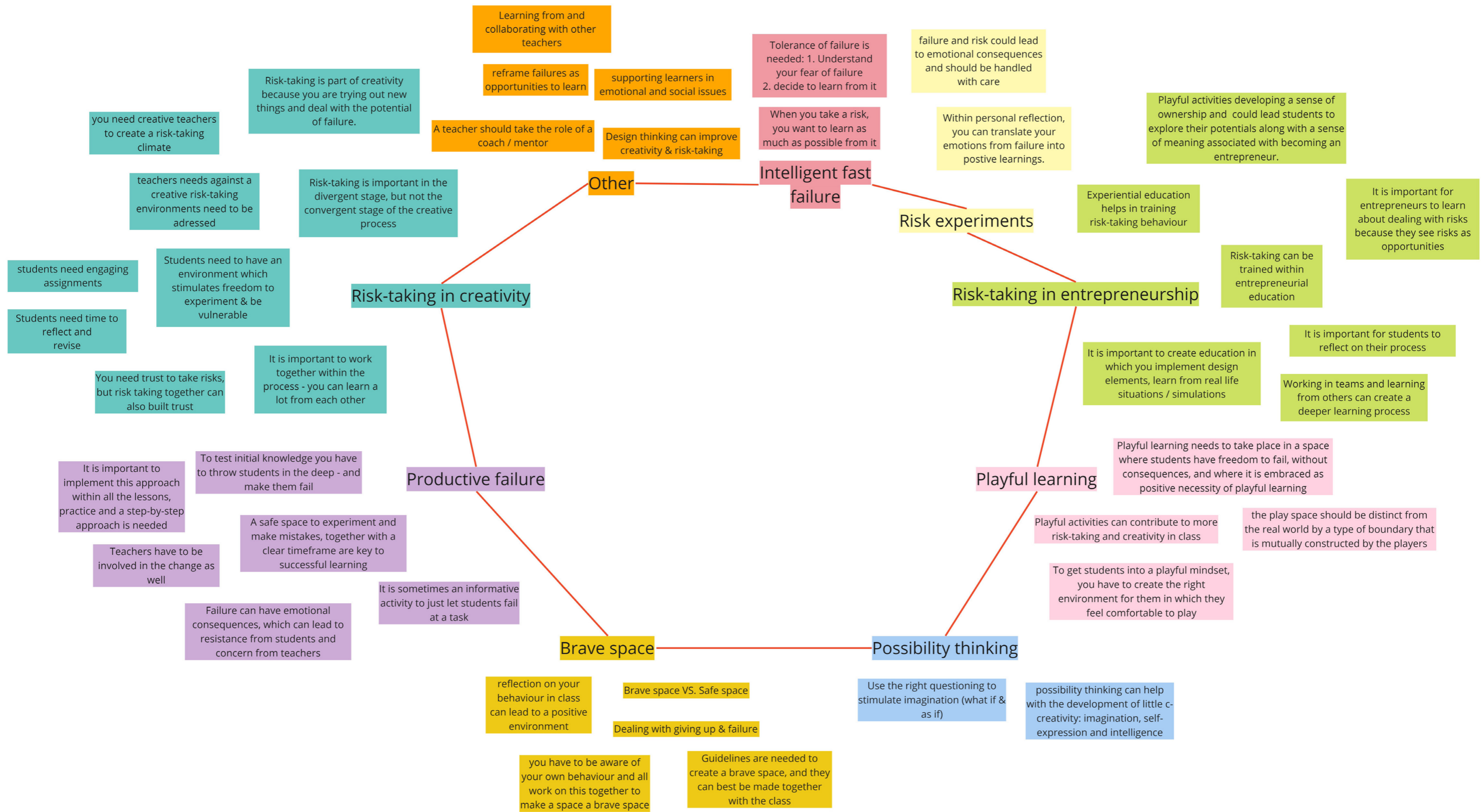
1. In the first risk experiment, I wanted to do something that I had never done before, because I was always hesitant towards it, but also always wanted to try it. In this case, this meant joining a mosh pit at a music festival. This risk was mostly a health risk, but also about pushing my boundaries and trying something new in front of others.
2. This risk experiment was during the minor 'Connected Creativity'. I was asked to share my expertise about 'brave space' with some of the students, to test my knowledge of the subject and throw myself in the deep with an situation I did not feel completely comfortable with.
3. The final risk experiment was part of a weekly activity I do: bouldering. This sport contains a lot of physical risks, but also a high risk of failure. This leads to some personal mental blocks for me that I experience every week: trying out boulder routes that I think are scary and of which I am afraid that I will not be able to finish them, with people watching that already tried the boulder route and succeeded in one time.

The reflections are captured in short in the table below.

<i>What did I feel before taking the risk?</i>	<ol style="list-style-type: none"> 1. Excited, I wanted to do this for a long time, and I finally felt ready to do it. Also a little bit nervous about what was going to happen, but confident that I would enjoy it. 2. Nervous, I did not know what to expect. I felt insecure about my knowledge. To feel a bit more secure, I tried to prepare myself well, but because I did not completely know what to expect, I could not prepare fully, which made me more nervous. 3. Tense, the route looked scary when someone else did it, so I got a bit nervous. My breath got shallow, and I felt my muscles tighten. I felt insecure about my capabilities and my reasoning to try this out.
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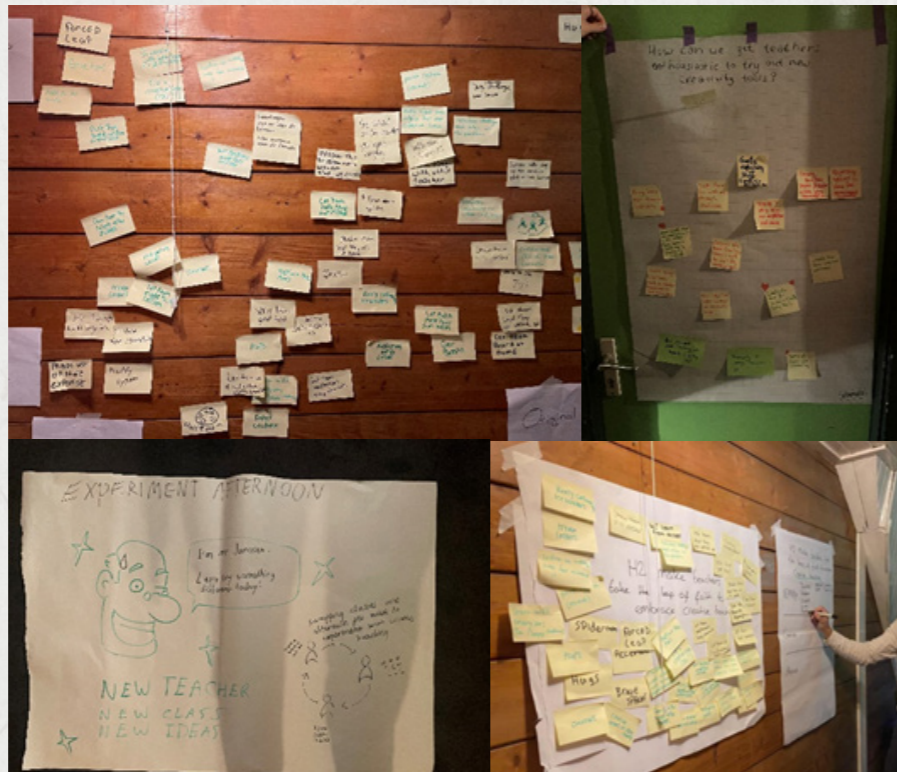
<i>What did I feel during the risk?</i>	<ol style="list-style-type: none"> 1. I felt really good, I was very happy and enjoyed it very much. But then I got overly excited and took too much risk, which ended in me 'failing' – or in this case, being pushed and falling, which made me feel uncomfortable and upset. 2. I quickly realised I made it bigger in my head than it actually was, so I became relaxed straight away. I realised it was actually quite fun to do and gave me some confidence about my knowledge. 3. I started the boulder by saying to myself that I did not have to finish it if I did not feel like it. This made the first part a bit easier, but when I got to the difficult part, this made me block mentally. My hands became sweaty and I started to breath fast. I felt people watching me, which made me more insecure. I stopped before I really tried the route, because I did not get myself so far to do it.
<i>How did I feel after the risk?</i>	<ol style="list-style-type: none"> 1. After the risk, I felt mad at first, and after reflecting on my actions, I realised I went too far and took too much of a risk, which made me feel a bit stupid about myself. But also still proud that I did it. 2. I felt more confident about my knowledge, and was happy that I did it. 3. After I got back on the ground, I first felt relieved. But, I also straight away felt stupid that I did not even try, because I knew it would not have felt like a failure if I tried and did not succeed, but actually as a victory because I would at least have tried it.
<i>What I you learn from this?</i>	<ol style="list-style-type: none"> 1. Take it one step at a time, do not take bigger risks straight away if you took one risk that went well. 2. Sometimes it is good to just put yourself out there, this can give you confidence (or is a good learning experience). 3. It is sometimes better to try something and don't succeed, then not even try at all. In the end, it does not matter if you fail, and it only feels better when you succeed in the end.

Translating literature findings into design insights



Appendix O Creative Facilitation

Pictures from the sessions



Ideas created within the sessions

"How to make teachers take the leap of faith to embrace creative teaching?"



"How can we get teachers enthusiastic to try out new creativity tools?"



Clustered ideas, with insights and ideas based on the cluster that have potential for implementation in the concept:



Appendix P Evaluation interviews

Interview expert failure (HVA) – JuanFra Alvarado Valenzuela (Project Fenix)

<p>Vragen project Fenix <i>Interessant hoe jullie verhalen van ondernemers die gefaald hebben naar de klas brengen. Hoe wordt dit geïmplementeerd in de lessen?</i></p>	<p>Maar kijk wij, dus wij werken hier met de HBO studenten, dus dat betekent dat HBO studenten die hebben allemaal dunder zo of er ondernemerschap in hun eigen vakgebied. Dus Als je bijvoorbeeld een opleiding of een sportschool, dan heb je ondernemers zoals In de sportwereld. Als jij een opleiding in Made in Creative Studios studies volgt, dan heb je ook Vakken of hun module over ondernemerschap In de mediawereld, dus bij elke faculteit zijn er programma 's die al bestaan nou met die achtergrond dan wat weet heden is aanhaken bij de modules of bij de vakken die worden gegeven in over ondernemerschap en daar opdrachten aan gekoppeld en reflectiemomenten en interviews aan gekoppeld. Wat wij doen in de lessen is laten zien dat falen eigenlijk heel dichtbij is, en wat voor lessen je kunt trekken uit deze ervaringen. Dit doen wij door middel van interview - met iemand uit je omgeving of iemand die je inspireert.</p> <p>Dit moet iemand zijn die mislukkingen heeft ervaren of 1 grote tegenslag en dan kijken of dat wel past in onze definitie van falen dus in de colleges hebben we ook definities gegeven over. Kijk, Dit is wat hoort bij falen in ondernemerschap, Dit is wat hoort bij ondernemer.</p> <p>Nou, opdracht was interview die ondernemer en dan Laten of Samen met de ondernemer reflecteren over. Kijk, wat heeft falen mij gebracht? Misschien een les Misschien niet, dat kan ook. Dat mag altijd ook geen reflectiemoment door zijn. En dan daarop. Daar was een opdracht, zodat zij deze lessen van de ondernemer kunnen. Implementeren in hun opdracht en die opdracht was verschillend afhankelijk van welke faculteit. Dus je kan er wel voorstellen bij bij media faculteit was het vooral of mediaproduct iets die daar past en artikel en infographic, dat soort dingen Bias Sports was het een businessplan In de sportwereld met een appendix met een extra van plan B. Wat zou ik doen als mijn eerste idee niet zou lukken?</p>
<p><i>Werkt dit ook voor het creëren van een andere houding bij studenten tegenover risico nemen en falen? (hoe zie je dit?) Wat zijn de belangrijkste lessen die je zelf hebt geleerd van de verhalen van ondernemers tijdens dit project?</i></p>	<p>Het doel is om te laten zien dat falen bestaat en heel normaal is. Houding is onmogelijk te veranderen met een opdracht, doelt op intrinsieke motivatie en dat gaat niet ineens veranderen. Je moet continu blijven hameren om houding te veranderen.</p> <ul style="list-style-type: none"> - tijdig ingrijpen - implementeer reflectiemomenten: Waar ben ik nu als ondernemer? - Belangrijkste les: ondernemen doe je niet alleen - je maakt de beslissingen, maar hoeft niet alles te dragen; vraag hulp en advies - Door juist erover te praten kan je mensen vinden die je misschien kunnen helpen
<p>Vragen concept</p>	

<p><i>Snel prototype gemaakt, even snel doorheen lopen. In het onderdeel van creatieve mindset in de klas creëren richt ik mij op 'brave spaces' en wil hiervoor een opdracht ontwikkelen die zich richten op het nemen van risico's en het hierna omgaan met falen. Tips in hoe ik dit vorm kan geven?</i></p>	<p>Als je een opdracht maakt waar studenten moeten falen, moeten ze wel bereid & klaar zijn hiervoor, en open staan om hierover in gesprek te gaan. Je moet letten op de ethieke kaders. Maar als je die ruimte hebt, kan je wel nadenken over hoe doe ik dit en wat zijn de gevolgen hiervan. Goed te kunnen vertalen die faler varen naar een levensles zoiets, dus Ik kan me voorstellen dat sommige leerlingen van 14, 15 Misschien zijn volwassen genoeg om tegen die faalactie wel te kijken naar als, hè? Dit is een goede leermoment, terwijl anderen Misschien zeggen, Oh, nou ja, Ik heb het gefaald. Ik ben echt een loser en Ik kan niet verder In het leven Omdat Ik heb gefaald en Dat is echt super erg. En wij met zijn allen zijn Losers weet ze niet slim genoeg, dus dan is speel je heel veel met de cytologische situatie, dus ja, hoe ga je daar om?</p>
<p><i>Andere tips voor hoe ik omgaan met falen zou kunnen verwerken?</i></p>	<p>Je zou wel een kleine activiteit kunnen toevoegen, die niemand af kan maken, en daarna in gesprek gaan over wat mogelijk is Ja, ja, kijk maar je bent ook een opdracht voor een voorbereidingsopdracht voor docenten aan het creëren. Je kan ook een aan hun vertellen als lange termijn opdracht. Hé, kijk hoe je XYZ concepten die jij gaf geleerde XYZ kernwoorden. Wat jou Oorschot over gaat, die zee gaan deze meenemen naar verschillende activiteiten. Dat zij kan, dus zij mogen iets toepassen. Van je voorbeelden, maar daarnaast mogen ze ook andere opdracht die ze al hebben klein beetje aanpassen. Dus dan kan je ook vertellen van de cursus is voorbij of deze les is voorbij, maar zorg dat. XYZ concepten dingen die worden toch meegenomen In de rest van je van je onderwijs. Nou, je weet nooit of dat gaat echt gebeuren. Maar tenminste je zet wel een stokje achter de deur, dat zei dat Misschien eentje of twee gaan het wel golven.</p>
<p><i>Module is gericht op docenten, en die moeten ook risico's nemen door voor de klas nieuwe dingen uit te proberen, en hier wellicht bij falen. Hoe kan je docenten motiveren om deze risico's te nemen en zelf ook een juiste houding tegenover falen te vormen?</i></p>	<p>Nee precies met met een interventie of met een les die zitten heel moeilijk om inderdaad te pushen dat dat iemand anders gaat het doen. Tenzij Alleen de intrinsieke motivatie is zo groot dat zij gaan het echt echt doen. Maar dat, ja, dat, dat weet ik al. Ik ken ook mijn collega's en mezelf gaan we niet in eens alles veranderen. Dat dat nee.</p> <p>Als je lessen geeft aan de docenten, kan je ze motiveren om de lessen uit te voeren door herhalen (breng deze les terug in..): Dus stel dat in een van je voorbeelden was, hè? Probeer deze bij je leerlingen deze activiteit en dan 3 weken later of een maand later In de loop van de volgende cursus is hè gezin er je dat je hier toch geprobeerd, hé? Breng dat terug in blablabla. Nou optie een ze hebben het gedaan en dan gaat gewoon de deze volgende opdracht heel makkelijk optie twee, ze hebben het niet gedaan. Maar op dat moment zijn ze wel gedwongen om dat te doen, Omdat anders kunnen ze niet verder.</p>

Interview teachers VMBO

Vragen per onderdeel	Creativity within entrepreneurship	Being a creative teacher	Creative mindset in the classroom	Constructing creative lesson	Exercise database	Discussion panel
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<i>"Wat is je eerste reactie als je dit ziet?"</i>			Brave space klinkt heel mooi, zou iets moeten zijn waar je in elke klas aandacht aan besteed. Ook de vraag wat je van elkaar nodig hebt hierbij		Heel nuttig, fijn om praktische voorbeelden te hebben	Het zou goed zijn als docenten sowieso iets meer met elkaar delen. Zowel binnen de school als daarbuiten
<i>"Heb je hier behoefte aan?"</i>		1° opdracht: ik doe meestal maar wat en zie wel wat er gebeurt, dus denk dat ik dit voor mezelf niet zo nodig heb. 2° opdracht: ja, zou hier wel mee aan de slag gaan. Wil graag wat creatiever worden als persoon		Zeker, tips zijn altijd handig en welkom! Er is zoveel in de praktijk wat je aan je les kunt koppelen	Ja, fijn om geïnspireerd te worden, opdrachten die je overal wel toe kunt passen	Ja, docenten zouden meer moeten delen, maar doen dit nu vaak niet omdat je daar te weinig tijd voor hebt.
<i>"Hoe zou je hier gebruik van maken?"</i>		1° opdracht: Ik denk dat het voor leerlingen juist ook heel goed zou kunnen helpen. Wat is het ergste? Wat kan gebeuren? Ja, want Als we dat in gaan zien, dan is het Misschien allemaal niet zo spannend meer.	1° opdracht: zelf normen opzetten in de klas klinkt goed, want dan heb je er samen over besloten, dus dan kan je elkaar ook verantwoordelijk houden			Ik zou inspiratie opzoeken en delen
<i>"Welke onderdelen van deze tool zou je gebruiken in je les?"</i>		2° opdracht: ik zou het gebruiken voor inspiratie: je bent zelf misschien een bepaald creatief type, maar er zijn er nog veel meer waar je ook van kunt denken: oh, dat is ook leuk, had ik nog nooit over nagedacht	2°: wel goed als je er een succes versie / combinatie aan koppelt: zoals faalmoment waar succes uit is gekomen. Ik deel al wel vaak eigen ervaringen die ik meemaak in de les, om te laten zien dat economie overal is, en dat ik ook maar een mens ben.			

<i>"Welke onderdelen van deze tool zou je eerder niet gebruiken?"</i>		1° opdracht niet per sé nodig voor beiden	2° opdracht: je moet hierbij wel de juiste groep hebben waar iedereen mee wil doen, veel hebben moeite om hierover te praten. Beter in kleine groepjes / anoniem delen (maar nog steeds de kans dat niet iedereen hiervoor open staat.		
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Vragen over de opdrachten database	Energizer: divergent thinking	Ice breaker: creative handshakes	Sparking imagination: guided fantasy	Improvisation: Client perspectives
<i>"Is de opdracht duidelijk en geschikt voor jullie leerlingen?"</i>	Ja, goed vormgegeven en duidelijk stappenplan	Ja dit kan je makkelijk toevoegen aan je les	Ja, dit zou wel kunnen, maar hangt wel af van de groepsdynamiek – leerlingen moeten wel vertrouwen met elkaar hebben om hun ogen dicht te houden & mee te doen	Ja, zeker een geschikte opdracht die je ook in veel vakgebieden kunt toepassen. Wilde zelf al zoiets gaan uitproberen
<i>"Hoe zou je deze opdracht gebruiken in je lessen?"</i>	Leuke opdracht	Leuk, ook leuk voor start van het jaar om leerlingen bekender met elkaar te maken. En geeft wat energie in de les, bijvoorbeeld tijdens een blokkur	Zou deze opdracht wel spannend vinden om uit te proberen met leerlingen, maar denk na een paar keer dat t wel goed gaat. Zou er wel voor open staan om een keer uit te proberen	
<i>"Zou je deze opdracht aanraden aan je collega's? Waarom (niet)?"</i>	Ja, kan hier met ieder vak wel iets mee en aanpassen aan specifieke onderwerpen.			
Vragen algemeen <i>"Denk je dat deze module je helpt met kennis en ondersteuning over het opzetten van de juiste creatieve houding in de klas? Op welke manier?"</i>	Ja, zeker. Zowel docent als leerling krijgt inzicht in zichzelf, met vragen zoals; wat doe ik nu? Wat zou ik kunnen doen? En wat kan er allemaal? Ik vind het vooral echt mooi dat er opdrachten in zitten die echt zorgen voor die creativiteit, want dat maakt het voor docenten heel tastbaar om mee te werken.			

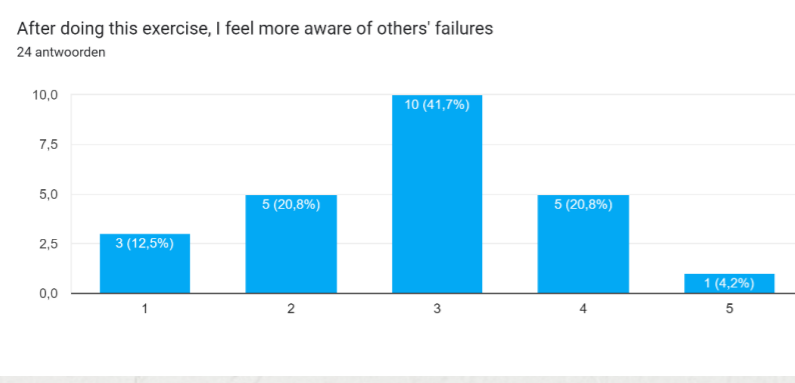
<i>"Zie je jezelf een module zoals deze gebruiken? Op welke manier?"</i>	Weet nog niet per sé hoe – maar dit ligt meer aan mijn eigen voorbereiding. Wat wordt er verwacht bij GoFuture van ons, en hoe kan ik dit in mijn lessen passen. Ik zou het wel leuk vinden om hier mee aan de slag te gaan.
<i>"Ontbreken er onderdelen die vanuit jou perspectief ook belangrijk zouden zijn?"</i>	Vanuit mijn kant lijkt die volledig. Je kijkt naar de leerling, je kijkt naar de docent en men kan overleggen. Ja en er zitten opdrachten in, dat werkt altijd heel goed.
<i>"Zou je deze module aanraden aan je collega's? Waarom (niet)?"</i>	Is een aanname, maar wij zijn nog niet zo vastgeroest. Docenten die al jaren in het vak zitten hebben hier misschien wel wat meer moeite mee of zouden hier minder snel mee aan de slag gaan, maar dat zou je moeten testen. Er zit wel veel kennis in wat je bij andere vakken ook kunt toepassen, dus denk dat het voor iedere docent nuttig kan zijn.


Interview expert – education strategist

Concept – creative teaching module	
<i>Denk je dat docenten hier behoefte aan hebben?</i>	Sowieso denk ik dat docenten er zeker tools voor nodig hebben om creativiteit over te brengen. Als je je dagelijkse leven je steeds tegen allerlei regels aanloopt om het regels In het systeem boven de mens, dan word je daar vanzelf al niet zo geïnspireerd om creatief te zijn.
<i>Hoe krijg je docenten zo ver om hier gebruik van te maken?</i>	Er moet urgentie gevoeld worden door docenten om hiermee aan de slag te gaan. En in principe heeft een docent geen tijd in zijn rooster om hiermee zelf aan de slag te gaan. Dus dat moet er wel op een manier komen. Je moet wel een einddoel hebben, dus Waarom zetten docent creativiteit in In de klas? Nou ja, Misschien Omdat er een bepaald project is of iets waar ze aan het werken zijn. Waar dat Handig kan zijn om creatief te zijn. Dus Misschien moet dat wel nog een stap zijn voor de docent van. Hé, wat is nou eigenlijk de uitdaging of het project of het einddoel wat Ik wil bereiken met creativiteit? Waarom wil ik creatief zijn? Waarom moeten mijn studenten creatief zijn? In welk soort project? Hoe je dat project eruit of die.
<i>Denk je dat deze module bijdraagt aan het opzetten van de juiste creatieve houding in de klas? Op welke manier?</i>	Ja, Maar ik denk voor zoiets, Ik weet, Ik weet niet hoe dit geïmplementeerd gaat worden, Maar ik stel me wel voor dat dit een. Dat de directeur of een opleidingsmanager moet zeggen, hè, We willen meer Ik weet eigenlijk niet meer wie die inhoud ligt als een nieuw onderwijsprogramma ontwikkelen. Ik heb er twijfels mee of studie docenten dit uit zichzelf gaan doen, laat ik het zo zeggen. We nodigen Mensen die in sessie komen altijd uit om In de bomen te stappen, dus bij check in stel je even voor en ik klop aan bij de boomhut en stap daar naar binnen en de boomhut? Nou ja, Dat is als kind kan je er eenmaal vrij zijn. Geen volwassene zeg je wat Je moet doen, je kan fantaseren, alles is mogelijk. Ik kan me voorstellen dat zoiets. Zo'n metafoor, ook wel lekker kan werken om zo een Safe Space Brave Space creëren.

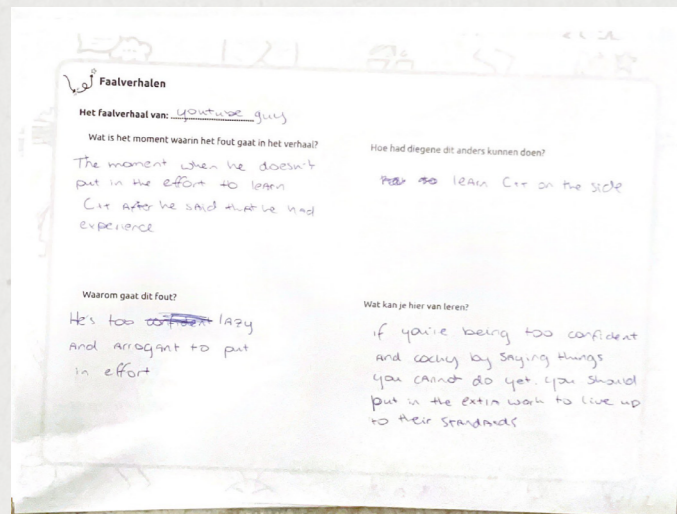
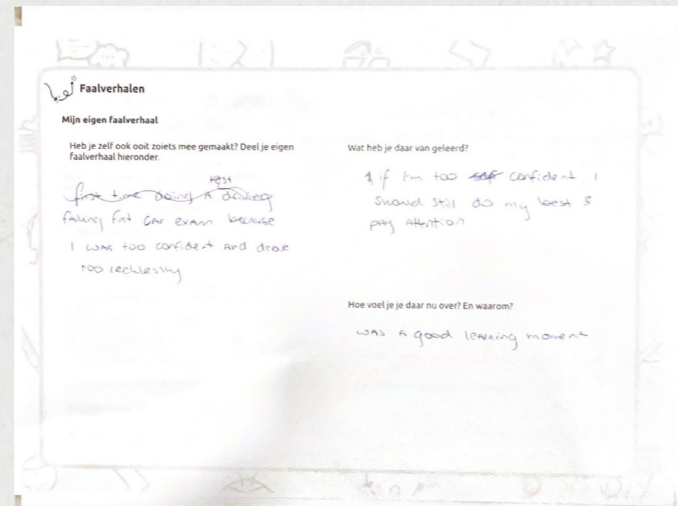
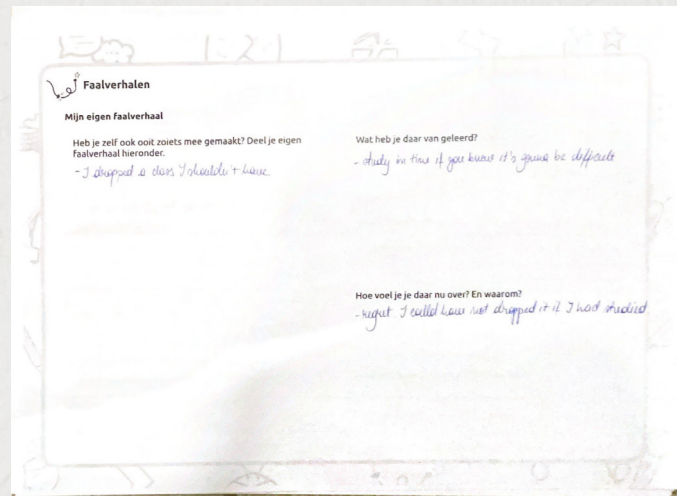
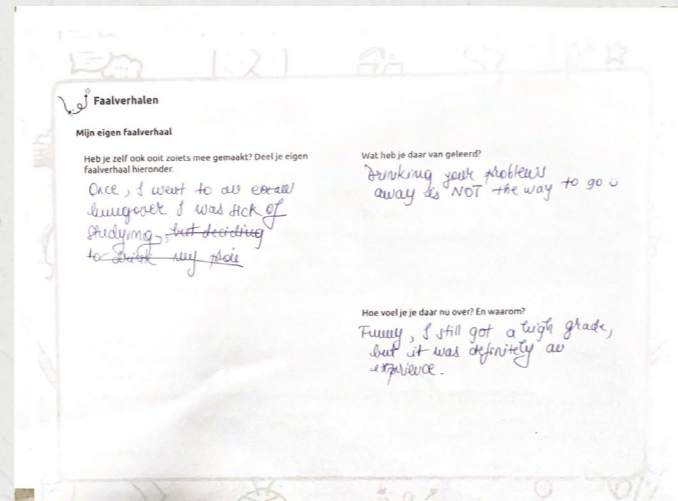
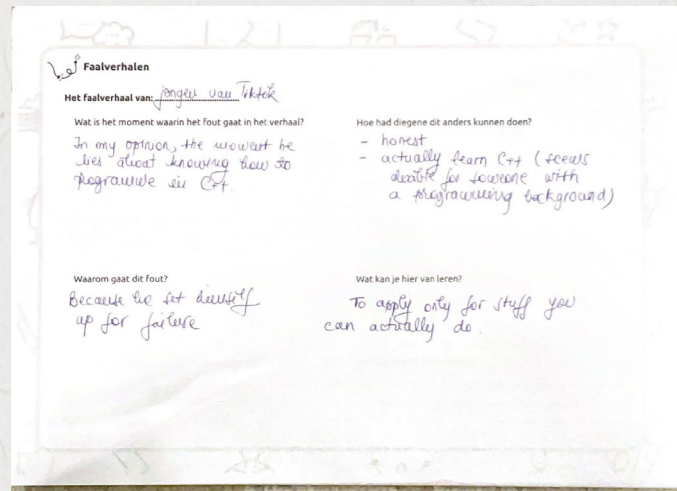
<i>Hoe kan je een 'tip' onderdeel goed overbrengen?</i>	Dit zijn er 10, is wel veel hoor. We hebben de meestal echt maar 5 Als we dit soort doemen aan het begin van de sessie zeggen wij. Dat we een soort van de regels van de sessie, onze manier van werken, dus wees constitutie, wees eerlijk, vraagt als iets onduidelijk is, je bent gewoon deel, iedereen doet echt mee het plezier, dat soort dingen. Oh, dit kan je wel, denk ik heel lekker doen. Met soort van ironische videootjes.
<i>Overige opmerkingen</i>	- Er zijn Natuurlijk ook inderdaad heel veel oefeningen, dus ik weet niet hoe al die oefeningen werken die je zelf kunt doen om je eigen creativiteit weg te halen, want Het gaat eigenlijk Alleen maar over het filter wat je hiervoor hebt en wat je tegenhoudt om iets te benoemen dat langzaam afbouwen. En, daar kan je gewoon in trainen. Dat kan iedereen - Dus, eigenlijk zou ik zeggen, de manier om dit te testen is eigenlijk dit meegeven aan iemand van go future die je op een sales gesprek gaat en dit even kan Laten zien van hé, We hebben ook dit en dat. Nee of jij meegaat of dat je gewoon vanuit zijn of haar ervaring hoort van hoe Dat was en hoe de klant erop reageerde toen dit toen hij dit voor zijn neus kreeg.
Roadmap	
<i>Implementatie – hoe zorgen jullie bij elementar ervoor dat je werk goed geïmplementeerd wordt?</i>	Soort van naar Horizon 1 2 3 dat werkt altijd lekker van. Het is gewoon fase een twee en 3. Tuurlijk in je werk toe naar een doel, maar alles. Daaronder. Moet vooral werkbaar zijn en begrijpbaar voor degene die ermee aan de slag gaan.
<i>Wat vind je hier van op het eerste gezicht dat je dit ziet?</i>	Het kan heel goed zijn dat dat je wel voor hun heel fijn is om die Horizons even zo groot uitgelegd te hebben, Maar dat wat hieronder staat dat dat gewoon een to do lijstje per fase bij is. En een en een check vraag, hebben we deze stakeholders betrokken en zitten we nog op de goede weg? Wat kan ook een vorm van een roadmap zijn?

Appendix Q Assignment testing minor

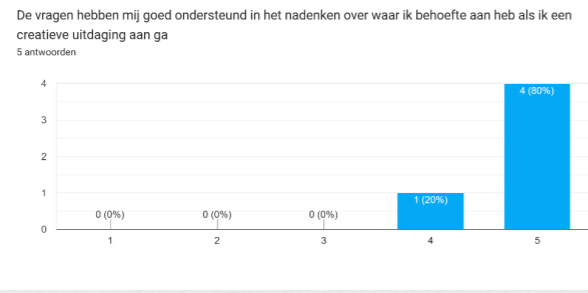
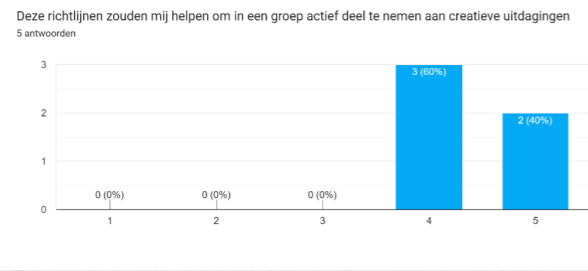
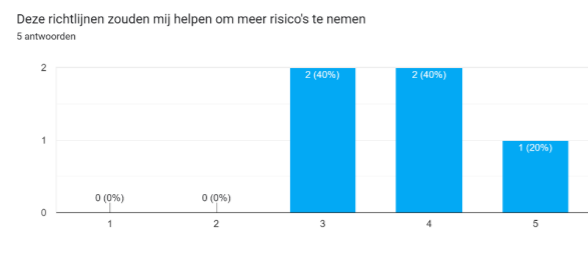
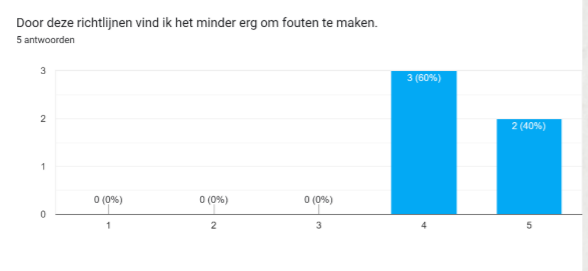
<p>Questionnaire Was the exercise clear for you?</p>	<ul style="list-style-type: none"> - yes (n=12) - yes, after using google translate (n=4) - no / some parts unclear (n=8)
<p>What did you learn from the exercise?</p>	<p>That you learn from failure in a more explicit way It's okay to fail? You can learn from mistakes. failure is success in progress Breaking down of failure stories It was more about remembering stuff I have already known Learning from others' failures can help you not make them in your own journey Niet zo veel eigenlijk, falen doen we allemaal en daar leer je van Failing is Okay, but be honest. Not that much do not be afraid of failure Falen is niet erg My braincells dont work Not much, I think. I think the given example was a bit poor. He didn't try, then failed. Cool. There were no stakes. To be more mindful of failure and changing the mindset toward: productive failure. Although I wasn't really convinced by the video since i did not really saw the productivity in this particular mistake How to reflect on failures There are many different types of failures possible That people feel excluded if you don't account for them Failure could lead to success Not very much, I have put a lot of effort into being aware of faillure. I think maybe because of that, this smaller exercise didn't do that much for me Reflecting on failure Ehh that i have some issue that i need to work on. but i knew that already</p>
<p>After doing this exercise, I feel more aware of others' failures</p>	 <p>Average score: 2,83</p>

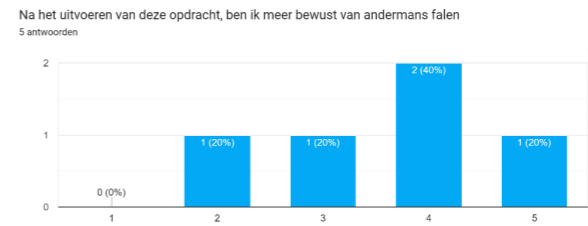
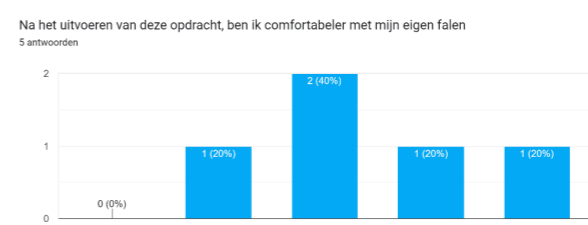

<p>After doing this exercise, I feel more comfortable with my own failures</p>	 <p>Average score: 2.69</p>
<p>After doing this exercise, I feel more confident to talk about my failures</p>	 <p>Average score: 2.61</p>
<p>After doing this exercise, would you like to discuss your failure stories and learnings with others?</p>	
<p>Do you have any other comments?</p>	<p>The example of the failure story was a bit simple maybe, a more complicated failure would have been more interesting The last answer was not because of the workshop have a nice day :) Ik vond het wat kort om er nu heel veel lering uit te halen. Heb niet per se het idee dat ik heel veel nieuwe inzichten heb gekregen Voor deze groep, die al vaker onderwerpen gerelateerd aan creativiteit en falen bespreekt, voelt de opdracht een beetje oppervlakkig. Ik denk dat een fout die je hebt gemaakt herkennen en erkennen natuurlijk stap 1 is, maar een dieper gedachteproces of analyse is er niet echt. Maar de vragen open en simpel houden helpt wel met begrijpelijkheid en geeft ruimte voor veel verschillende antwoorden I voted disagree because I am not MORE confident to talk about it. I was already quite confident. This didn't change that. The way it was presented to us, this exercise was not really useful. But I like the concept. More time. Explanation why we need to visualise in six steps specifically</p>
<p>Observations / personal insights during session</p>	<ul style="list-style-type: none"> - Add page numbers / assignment numbers - Page has to look good if printed in black & white - Clash between depth of the assignment and what students can handle - Assignment quite simple for minor students – but they are also already actively involved with creativity & failure - It is hard to find a good & short failure story online - Assignment is sometimes unclear – take time to read over text and make it easier to understand

Appendix R Assignment validation



<p>Questionnaire Opdracht: "Mijn creatieve doelen" Vond je deze opdracht duidelijk?</p>	<p>n=4 (1 participant was not able to answer this part of the questionnaire because of late arrival) - Ja (n=3) (75%) - Niet helemaal (n=1) (25%)</p>												
<p>Als je niet helemaal of nee hebt geantwoord: wat was er niet duidelijk aan de opdracht? Wat neem je mee nadat je deze opdracht hebt uitgevoerd?</p>	<p>Ik vond mijn creatieve zelfportret lastig uit te voeren omdat het best wel abstracte dingen zijn om te tekenen. Bij 4. Mijn creatieve route wist ik niet of ik een doel moest kiezen of mijn verschillende doelen op volgorde moest zetten</p>												
<p>Deze opdracht heeft mij aan het denken gezet over mijn eigen creativiteit</p>	<p>Duidelijke termen en doelen voor de ontwikkeling van mijn creativiteit Dat ik bewust ben van me creative tekortkomingen maar geen stappen plan maakt hoe dit te veranderen, de opdracht zet me hier over aan het denken Welke creatieve eigenschappen ik niet echt heb nu, maar wel meer zou willen hebben Het pad naar hoe ik mezelf kan verbeteren. En de kennis die ik nu over mezelf heb opgedaan, zodat ik mn sterke punten kan gebruiken</p>												
<p>Deze opdracht heeft mij geholpen in het opzetten van creatieve doelen</p>	<p>Deze opdracht heeft mij aan het denken gezet over mijn eigen creativiteit 4 antwoorden</p> <table border="1"> <tr><th>Score</th><th>Percentage</th></tr> <tr><td>1</td><td>0 (0%)</td></tr> <tr><td>2</td><td>0 (0%)</td></tr> <tr><td>3</td><td>0 (0%)</td></tr> <tr><td>4</td><td>2 (50%)</td></tr> <tr><td>5</td><td>2 (50%)</td></tr> </table> <p>Average score: 4.50</p>	Score	Percentage	1	0 (0%)	2	0 (0%)	3	0 (0%)	4	2 (50%)	5	2 (50%)
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<p>Deze opdracht heeft mij geholpen in het opzetten van een van mijn doelen</p>	<p>Deze opdracht heeft mij geholpen in het opzetten van creatieve doelen 4 antwoorden</p> <table border="1"> <tr><th>Score</th><th>Percentage</th></tr> <tr><td>1</td><td>0 (0%)</td></tr> <tr><td>2</td><td>0 (0%)</td></tr> <tr><td>3</td><td>1 (25%)</td></tr> <tr><td>4</td><td>2 (50%)</td></tr> <tr><td>5</td><td>1 (25%)</td></tr> </table> <p>Average score: 4.00</p>	Score	Percentage	1	0 (0%)	2	0 (0%)	3	1 (25%)	4	2 (50%)	5	1 (25%)
Score	Percentage												
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2	0 (0%)												
3	1 (25%)												
4	2 (50%)												
5	1 (25%)												
<p>Heb je nog vragen / opmerkingen over deze opdracht?</p>	<p>Deze opdracht heeft mij geholpen in het uitwerken van een van mijn doelen 4 antwoorden</p> <table border="1"> <tr><th>Score</th><th>Percentage</th></tr> <tr><td>1</td><td>0 (0%)</td></tr> <tr><td>2</td><td>0 (0%)</td></tr> <tr><td>3</td><td>2 (50%)</td></tr> <tr><td>4</td><td>0 (0%)</td></tr> <tr><td>5</td><td>2 (50%)</td></tr> </table> <p>Average score: 4,00</p>	Score	Percentage	1	0 (0%)	2	0 (0%)	3	2 (50%)	4	0 (0%)	5	2 (50%)
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<p>Opdracht: "De experimenteerzone"</p>	<p>Op papier is dit misschien een beetje lastig, maar visuele stimuli of voorbeelden die beide niet sturen en inspirerend zijn zouden misschien kunnen helpen om nog verder te reflecteren! Opdracht 2 was uitdagend omdat je abstracte begrippen moet visualiseren, maar helpt daarom ook met concreet worden Het is ook breder dan op creativiteit toepasselijk denk in. Soms was het moeilijk om het alleen op creativiteit gericht te houden n=5</p>												

Vond je deze opdracht duidelijk?	- Ja (n=2) (40%) - Nee (n=3) (60%)
Als je niet helemaal of nee hebt geantwoord: wat was er niet duidelijk aan de opdracht?	Alles was heel duidelijk, behalve de allereerste vraag 'wat zijn creatieve uitdagingen aan te gaan bij gofuture' Het eerste deel was lastig maar ook omdat ik niet bekend met GoFuture. De rest was duidelijk Ik vond creatieve uitdaging best wel breed, ik vond het lastig om te weten hoe specifiek ik hierin kon zijn (of meer algemeen houden). Toen je meer uitlegde over de context vond ik het wel duidelijker!
Wat neem je mee nadat je deze opdracht hebt uitgevoerd?	Dat het wel lastig is om de experimenteerzone te bepalen, maar deeloplossingen en bespreken helpt met reflecteren hierop Hoe je een veilige zweer in de klas krijgt, en het gevoel hebt dat je mag delen Wat ik belangrijk vind om te durven experimenteren, en hoe anderen daar invloed op hebben Voor mij persoonlijk misschien wat ik zoek in een team als ik een baan zoek. En in het algemeen is het goed om te weten hoe "de experimenteerzone" gefaciliteerd kan worden Fijn om te weten dat er ruimte is om te experimenteren. En fijn dat ik voor mezelf kon bedenken wat ik daarvoor nodig heb van mezelf, maar ook van anderen.
De vragen hebben mij goed ondersteund in het nadenken over waar ik behoefte aan heb als ik een creatieve uitdaging aan ga	De vragen hebben mij goed ondersteund in het nadenken over waar ik behoefte aan heb als ik een creatieve uitdaging aan ga 5 antwoorden  Average score: 4.80
Deze richtlijnen zouden mij helpen om in een groep actief deel te nemen aan creatieve uitdagingen	Deze richtlijnen zouden mij helpen om in een groep actief deel te nemen aan creatieve uitdagingen 5 antwoorden  Average score: 4.4
Deze richtlijnen zouden mij helpen om meer risico's te nemen	Deze richtlijnen zouden mij helpen om meer risico's te nemen 5 antwoorden  Average score: 3.8
Door deze richtlijnen vind ik het minder erg om fouten te maken.	Door deze richtlijnen vind ik het minder erg om fouten te maken. 5 antwoorden  Average score: 4,4

Heb je nog vragen / opmerkingen over deze opdracht?	Pas op dat richtlijnen niet negatief klinken in de zin van "dit mag niet". Want dan zou ik me zelf heel beperkt en niet creatief voelen. Bij 4. Richtlijnen zou het fijn zijn als het duidelijker is dat het anoniem blijft wat je op je post-its schrijft Je zou ik een klas eerst nog maar moeten zien of de richtlijnen worden nageleefd. Dat hangt ervan af hoe ermee wordt omgegaan. Als het meteen geïmplementeerd zou zijn dan helpt het heel goed maar in een klas vraag ik me dat af n=5
Opdracht: "Faalverhalen" Vond je deze opdracht duidelijk? Als je niet helemaal of nee hebt geantwoord: wat was er niet duidelijk aan de opdracht?	- Ja (n=5, 100%) n.v.t.
Wat neem je mee nadat je deze opdracht hebt uitgevoerd?	Dat iedereen wel eens faalt en dat heel normaal is. En het maakt soms de leukste verhalen! Falen is eigenlijk helemaal niet zo erg en leer je juist ook van maar blijf wel bij je zelf Dat iets op het moment heel vervelend kan zijn, maar je er later vaak helemaal geen last meer van hebt Weet ik eerlijk gezegd niet zo goed. Maar ik denk dat het wel goed is om te reflecteren op dit soort situaties Dat het menselijk is om faalmomenten te hebben.
Na het uitvoeren van deze opdracht, ben ik meer bewust van andermans falen	Na het uitvoeren van deze opdracht, ben ik meer bewust van andermans falen 5 antwoorden  Average score: 3,60
Na het uitvoeren van deze opdracht, ben ik comfortabeler met mijn eigen falen	Na het uitvoeren van deze opdracht, ben ik comfortabeler met mijn eigen falen 5 antwoorden  Average score: 3,40
Na het uitvoeren van deze opdracht, ben ik zekerder over het delen van mijn faalverhalen	Na het uitvoeren van deze opdracht, ben ik zekerder over het delen van mijn faalverhalen 5 antwoorden  Average score: 3,60

Vond je het faalverhaal waar je naar geluisterd hebt toepasselijk voor de opdracht? Kon je jezelf hieraan relateren? Waarom wel / niet? Als je deze opdracht in een les zou doen, zou je dan na deze opdracht graag je faalverhaal en inzichten delen met anderen? Heb je nog vragen / opmerkingen over deze opdracht?	Zeker. Lekker luchtig en voor iedereen te relativieren. Zeker, iedereen heeft zo iets wel meegemaakt. Ja het was wel een herkenbare situatie. Ik zou het alleen niet zo snel aan ondernemen koppelen Ja wel goed voor de opdracht. Ik heb het zelf nooit meegemaakt. Ik denk dat ik minder expliciet mijn negatieve mening over mensen deel Ja, zoiets kan mij ook makkelijk overkomen. - Ja, zeker! (n=1; 20%) - Ja, maar alleen in kleine groepjes / duo's (n=3; 60%) - Nee, ik zou dit liever voor mijzelf houden (n=1; 20%)
Nabespreking Overige opmerkingen	Doelen - Opdracht voor docenten het moeilijkst, wat daar op te schrijven - Stappen hielpen elkaar wel, was vooral dat begrip zoals creativiteit gewoon heel abstract is – wat is überhaupt een creatief doel - 5 vlaggen is goed, maar bij zetten dat je ze niet hoeft in te vullen. - Algemene doelen, maar kan wel creatief zijn. - Hoe je het kunt toepassen in de les - Brainstorm: hoe kan je creatief lesgeven, wat zou je kunnen doen, wat doe je al – wat past hiervan bij mij - Wanneer doe je dit in de les - Zodra je bezig was, was het wel prima - Woorden (attitudes) hielpen wel echt al heel erg
	Experimenteerzone - Begin lastig, omdat je niet weet wat Go Future is - Behoefte kan je wel goed aan jezelf relateren - Hoe specifiek / concreet je iets moet opschrijven – maar eigen interpretatie lijkt uiteindelijk ook prima - Handschrift herkenbaar – online wordcloud – maar kan je niet clusteren. – of miro, maar wel lastig programma. En digitaal misschien andere uitkomsten / tekenen of niet. - Richtlijnen zouden wel helpen, maar lastig om te weten of kinderen er echt iets mee gaan doen (ook afhankelijk van docent). - Goed dat je het met elkaar opstelt, dan heeft iedereen het gevoel dat ze er aan hebben bijgedragen en is het ook makkelijker voor de docent om er op terug te wijzen - Met 30 kinderen en veel post-its zal het wel veel langer duren en als je er een half uur mee bezig bent, weet ik niet of het studenten dan nog betrokken blijven - Voor docent is het misschien ook lastig om dit te lijden

Faalverhalen	<ul style="list-style-type: none"> - Is persoonlijk, maar verschilt per persoon en groep en je verhaal. In een klas met 30 kinderen, liever niet - Als ze van te voren weten dat ze het moeten delen, gaan ze misschien snel grappigere / makkelijkere verhalen bedenken. - Of je deelt alleen je inzichten, niet je verhaal - Ik word er wel nieuwsgierig van naar andere verhalen - Je kunt ze ook anoniem delen, of aangeven of je dit anoniem wilt delen. – maar kan ook dat vrienden er dan over gaan spreken na de les (slecht voor vertrouwen in elkaar) / blaadjes van elkaar stelen, anders wordt het zo geheimzinnig - Dit delen maakt het wel dat je meer beseft dat iedereen dit soort scenario's meemaakt. - Delen door middel van icoontjes / tekeningetjes – vaag omschrijven - Groepjes op basis van soortgelijke faalverhalen
Observaties / quotes / persoonlijke inzichten tijdens oefening 1 (creatieve doelen)	Tijd: 15 – 20 minuten “Veel abstracte informatie die ik er op moet zetten” “Je mag dit zelf invullen toch?” “Leuk die kleurtjes stiften” “Ik ben nu gelijk op mijn hele afstudeerproject aan het reflecteren.” “De opdracht forceert je wel om doelen op te stellen die echt waarde hebben, niet bijvoorbeeld alleen maar ‘beter leren tekenen’.” “Het zelfportret voelt als veel, maar dit valt mee als je eenmaal bezig bent.” Idee: iets toevoegen voor hoe je deze doelen kunt toepassen in de les Tijd: 30-40 minuten
Observaties / persoonlijke inzichten tijdens oefening 2 (experimenteerzone)	“Creatieve uitdagingen zijn lastig te bepalen buiten de context.” “Vakjes mogen groter, beetje klein om in te schrijven met stift” “Dit zijn wel moeilijke vragen” “Belangrijk om zelfde kleur stift & post-it te hebben om het anoniem te maken.” “Phoe, ik zou dit wel spannend vinden op de middelbare school” Idee: ipv post-its kan je het ook digitaal doen (bijvoorbeeld mentimeter etc.) Tijd: 15-20 minuten
Observaties / persoonlijke inzichten tijdens oefening 3 (faalverhalen)	“Toch wel lastig om zo’n faalverhaal te bedenken” “Ik wil nu toch wel heel graag de verhalen van anderen horen. Die van mezelf deel ik liever niet, maar zou ik opzich nog wel doen.” Idee: Je kunt docent groepjes laten vormen op basis van soortgelijke faalverhalen, dan zit je bij mensen die hetzelfde hebben meegemaakt en is het minder erg om te delen. Idee: Je kunt eerst een warming-up opdracht doen, zoals over de streep – waarbij je vraagt ‘wie heeft dat meegemaakt?’ over kleine dingetjes zoals bvb iets kwijtraken, en al ziet dat je niet de enige bent.

The experiment zone

De experimenteerzone
Klas activiteit

1. Creatieve uitdagingen
Binnen de les van GoFuture ga je aan de slag met creatieve uitdagingen. Die doe je niet alleen, maar samen met je docent en klasgenoten.
Wat zijn creatieve uitdagingen die je verwacht aan te gaan bij GoFuture? Noem er 3.
- mezelf anders positioneren dan de rest
- Doelgroep overtuigen

2. De experimenteerzone
Om deze creatieve uitdagingen aan te gaan, moet je lef tonen, risico's durven nemen en fouten durven maken. Je moet in de 'experimenteerzone' stappen.
Beschrijf of teken hoe deze experimenteerzone er voor jou uit ziet. Wat heb je allemaal nodig om actief aan de slag te gaan?
- veel prototypen
- Heel veel praten met doelgroep
- of experts / andere andersdenkenden

3. Mijn verwachtingen
Je stapt nooit alleen in de experimenteerzone, maar je hebt elkaars hulp nodig. Wat verwacht je van anderen, zodat jullie samen deze creatieve uitdagingen aan kunnen gaan? En hoe draag je hier zelf aan bij? Schrijf per vakje minimaal 3 dingen op. Schrijf of teken hierna in het wolkje wat het belangrijkste is wat jij nodig hebt om in de experimenteerzone te komen.
- Vrijheid! Niet beoordeeld worden op wat ik doe
- Materialen om mee te experimenteren
- Positieve aanmoediging
- Enthusiasme
- Bouwen op elkaars ideeën
- Naar elkaar luisteren
- Een gezellige luchtige sfeer in de klas
- Veel (gekke) ideeën
- Anderen motiveren / een team vormen
- Tekeningen
- dit had ik eerst niet goed gelezen
- maakt me gelijk beetje zenuwachtig

4. Richtlijnen
Schrijf hierna op post-its de belangrijkste dingen die je wilt delen op en geef deze aan je docent. Je gaat deze doorbespreken met je medestudenten, en samen richtlijnen opstellen zodat iedereen het lef krijgt om de creatieve uitdagingen aan te gaan.

DE EXPERIMENTEERZONE
NO JUDGEMENT

Vrijheid & Ruimte

① Naar elkaar luisteren met respect
 ② Ruimte om jezelf uit te spreken
 ③ Fouten maken mag!
 ④ Niet gelijke een oordeel geven
 ⑤ Bouw op elkaars ideeën
 ⑥ Moedig elkaar aan
 ⑦ Inzet tonen
 ⑧ Durf te delen
 ⑨ Docent rijkt tools aan

GOEDE STEER

Tools

- Spullen om mee te experimenteren
- VARIATIE

Sticky notes:

- Uitgeleend geven
- Ruimte
- Nis judgement niet elkaar afbreken of mensen tegengaan
- RUIMTE (EN VERTROUWEN)
- STORING EN NIET OPPEL
- GEEN DORP OORDEEL
- Naar elkaar luisteren met respect
- Volg je Samen Creatie
- Elkaar blijven aanmoedigen
- Goede Feedback (ook maar om te lachen)
- Lichte sfeer niet te ernstig met muziek

Failure stories

Faalverhalen

Individuele activiteit

1. Het faalverhaal
 Je hebt net geluisterd naar een stukje uit een gesprek tussen twee mensen die praten over een faalverhaal. Probeer te visualiseren wat er gebeurde door het storyboard in te vullen.

UP DEZE K VREUDE
 SCHTEL VAN DAAS
 VREUDE DAAS VERBAMT
 VREUDI PROBLEEM HIJNT TE GEVEN
 VREUDE VAN ELKAR
 SC HAAMTIE

My creative goals

2. Mijn creatieve zelfportret

Verwerk de eigenschappen die je gekozen hebt in dit creatieve zelfportret. Probeer te visualiseren wie jij bent als creatief docent.

Vragen die je jezelf kunt stellen tijdens het maken zijn:

- Wanneer ben ik creatief?
- Op welke manieren ben ik creatief?
- Wat zijn mijn creatieve vaardigheden?

3. Mijn creatieve doelen

Kijkend naar je zelfportret, zijn er dan dingen die je nog wilt verbeteren of leren? Stel creatieve doelen voor jezelf op die je aan het eind van het studiejaar verwezenlijkt wil hebben, en zet deze in de vlaggen. Voeg vlaggen toe als er meer doelen zijn die je wilt verwezenlijken.

4. Mijn creatieve route

Nu je je doelen hebt bepaald, is het belangrijk om de route naar je doelen uit te werken. Kies een doel uit waar jij je eerst op gaat richten. Welke stappen ga je zetten om dit doel te bereiken?

2. Het interview

Beantwoord de volgende vragen over dit verhaal. Waar is het misgegaan? En wat kan je hiervan leren?

Wat gaat er mis in dit verhaal? Waarom gaat dit mis?
 Hoofdpersoon wist niet dat wat anderen vrienden waren met de persoon waar hij over roddelde.

Wat kan je hier van leren?
 Eerst even peilen voordat je iets slechts over iemand zegt.

3. Je eigen faalverhaal

Probeer nu te bedenken of je zelf ook ooit een ongemakkelijk faalverhaal hebt meegemaakt. Bijvoorbeeld op school. Wat ging er mis? En wat heb je daarvan geleerd?

Heb je zelf ooit een faalverhaal mee gemaakt waarover jij je ongemakkelijk voelt? Deel je eigen verhaal hieronder. Je hoeft dit niet met anderen te delen.
 Ik was laatst met mijn collega aan het praten en ik deed een aanname over een andere persoon. Zij zei een beetje scherp 'nou dat hoeft helemaal niet', waarna ik vervolgens dacht, dat was een echt een stomme aanname.

3. Je eigen faalverhaal

Hoe voel je je hier nu over? En waarom?
 Nu wel oké, omdat er tijd verstreken is.

Als je nogmaals in zo'n situatie terecht zou komen, hoe zou je dit dan anders aanpakken?
 Proberen minder aannames te maken. Alhoewel ik ook wel denk dat het menselijk is, en dus oké.

Wat heb je hiervan geleerd?
 Dat hoe ik over situaties denk soms even twee keer nadenken. En dat het goed is om het los te laten.

Denk je dat anderen ooit ook zoiets hebben meegemaakt? Wat voor advies zou je ze mee willen geven?
 Niet teveel druk maken als zoiets gebeurt, het is toch al gebeurd.

Appendix S validation interviews

Teacher interview

Vragen per onderdeel	Creatieve studio	Laat je inspireren
“Wat is je eerste reactie als je dit ziet?”	Ja ja wel om even snel, want ik zou het Natuurlijk best wel wat beter willen bekijken om daar, Maar het ziet er wel heel mooi uit dat in ieder geval en Ik denk dat het een stukje creativiteit voor die leerlingen sowieso heel belangrijk is, want daar wordt wel wat meer van ze gevraagd, zeker bij ons nu. Ja, een Omdat dat allemaal veranderd qua het afnemen ook van ja, ze gaan geen examens bijna meer doen, meer met portfolio's werken waarin ze zich moeten gaan verantwoorden, dus daar wordt meer van een leerling gevraagd qua hè? Dat ze voor die Salon moet tussen Mensen gaan uitnodigen. Ze moeten flyers gaan maken, ze moeten van alles gaan organiseren, dus Dat is sowieso Natuurlijk wel een stukje creativiteit. Wat ze moeten gewoon gebruiken, dan dus daar sluit het wel echt heel mooi op aan.	
“Heb je hier behoefte aan?”		Ja vind ik ook wel fijn dat dat erin staat. Ja, Ik vind Ik vind dit leuk. Ja. Ik vond het enige waar ik op op triggerde, was dat faal verhaal. Voor de rest vind ik het erg leuk uitzien, ja.

Vragen per opdracht	“Mijn creatieve doelen”	“De experimenteerzone”	“Faalverhalen”
“Wat is je eerste reactie als je dit ziet?”	Ja, zou dit wel gebruiken.		Enige waar ik op triggerde, dan is Natuurlijk dat woordje faal verhaal. Dan denk ik, ja, Ik weet niet hoe een leerling dat ervaart het lijkt zo negatief Als je dat proeft. Zo ineens dan, want dan gaan we even bespreken wat we allemaal niet goed hebben gedaan. Zo komt het dan een beetje op mij over.

“Hoe zou je hier gebruik van maken?”	U kunt delen, want ja, Waarom niet? Want dan waarschijnlijk maak je de veiligheid In de klas dan ook wat groter, want Als de juffen durft, wat let je dan toch? Je mag tegen mij alles zeggen en Als ik dus ik probeer dat wel open te houden voor leerlingen, zodat ze het zich lekker voelen en ook dingen durft te doen. Denk dat het belangrijk is, Maar dat moet ieder voor zich weten.	Maar is dit iets wat Robert wat wat in Go Future geplaatst gaat worden? Of hoe moet ik dit zien? Robert: Nou dat, dat zou een volgende stap kunnen zijn, hè, dus afhankelijk van jouw jouw actie en van andere docenten, zeg maar, wordt dit nog wat aangepast en dan zouden dat ook als als opdracht erin kunnen zetten. Als je bijvoorbeeld een Salon mooi moet inrichten of zo hè? Zo'n opdracht, Maar dat je dan ook nog wil nadenken over creativiteit. Wat dat nou is hè? En hoe dat bij jou als als student werkt en hoe je dat kan verbeteren? Dat Dat is eigenlijk een een ander leerdoel, vandaar dat niet na of in dat in dat eerste stukje zien dat je creativiteit als leerdoel kan opnemen.	Maar dat zien ze zo in Nederland Natuurlijk niet, hè, want Ik heb een opdracht bij SB en dat heet trots en spijt. En dan moeten ze dus iets vertellen wat ze heel trots op zijn en iets waar ze spijt van hebben. Nou Dat is echt zo een issue al. Dat vertellen waar je spijt van hebt. Wel, Ik denk ja, die Ik denk dat het een opdracht zou moeten zijn dit wat ze niet hoeven te delen, dat moet echt wel bij jezelf blijven, maar ze vinden wel heel moeilijk.
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<p>“Is deze opdracht duidelijk en geschikt voor jou / jullie leerlingen?”</p>		<p>- Nee, Ik denk dat ze er wel wat mee kunnen, Maar ik denk wel dat de docent moet begeleiden in dat dat dat met dit soort opdrachten dat de groepjes die met elkaar gaan wat gaan doen, dat die in elkaar vertrouwen.</p> <p>- Ik ga een arrangement maken en ga nou eens nadenken over waar, wat zou je daar dan inzetten en waar ga je ga kom niet eens in ze op om in ergens te gaan kijken van wat doen ze dan bij een andere salon met een arrangement? Dat heb ik daar dan voor nodig, dus dat zijn wel de dingen die nu van hun gevraagd worden in leerjaar, een in Salon dienst om dat soort dingen te gaan ontwikkelen. Dus op zich past deze opdracht heel mooi bij ons in je één eigenlijk.</p> <p>Robert: Ja, Maar het het het betekent dat ze dus ook moeten nadenken op een hoger niveau over creativiteit. In de zin van een mooie inrichting maken, maar ook nadenken over, hoe is dat eigenlijk gegaan en wat zou ik nodig hebben om het nog beter te kunnen doen? Nee, Ik denk wel, eigenlijk in eerste instantie praktisch, maar Je moet het wel kunnen omzetten naar iets theoretisch Als je er wat mee wil met je bedrijf, want dan, dan moet je Natuurlijk bepaalde handelingen kunnen gaan doen om iets creatiefs te doen om iets te maken of om te kijken van wat doen mijn concurrenten? Hoe kan ik daar overheen? Hoe ga ik dat Laten zien aan mijn klanten? Want zij denken van ik zet iets op Facebook en dan komt het wel goed een beetje zelf.</p>	<p>Nou radar, ben ik een beetje bang voor Omdat ze eigenlijk Omdat we die hele omslag in leerjaar een nu aan het maken zijn, is ook Omdat er blijkbaar onderzoeken zijn geweest waarop leerlingen nu zeggen dat ze ja dat ze dus stress krijgen, nerveus worden van cijfers en dat soort dingen dus dan verwacht ik eigenlijk iemand kader daarvan dat het woord niet dat je niet mag falen. Dat is Natuurlijk onzin. Maar goed, blijkbaar moet het allemaal heel positief brengen om een leerling te stimuleren om gewoon.</p> <p>Weet je dan denk ik, moet er niet iets komen van wat ging goed wat en wat ging wat minder goed of zo weet je? Ja, dan snap ik wel dat je daar Natuurlijk een pakkende titel van hebben.</p> <p>Nou ja, Je moet je ook best wel kwetsbaar opstellen Natuurlijk. En Ik weet niet of dit iets is wat je In de klas moet delen, maar dan denk ik niet. Iedereen zal blij zijn om te Laten zien wat ze allemaal niet goed hebben gedaan.</p>
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<p>Vragen algemeen Module - docenten “Denk je dat deze module je helpt met kennis en ondersteuning over het opzetten van de juiste creatieve houding in de klas? Op welke manier?”</p>	<p>Dat denk ik wel. Ja, dat denk ik wel. Ik denk zelfs dat het helpt, want nu denk ik dat we best wel veel uit onszelf moeten halen om. Om zo een groep te maken en die groep die groepen moeten er wel komen en Ik denk ook Als je eenmaal in die flow zit dat je dat gewoon heel leuk vindt om te doen. Denk dat het Alleen maar versterkt in alles wat je doet.</p>
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<p>“Zie je jezelf een module zoals deze gebruiken? Op welke manier?”</p>	<p>Nee, ik zou het wel doen. Ik wel. Ik denk dat de Mensen die nu aan het coachen zijn beneden dat die het ook doen. De rest vind ik lastig. Ja, Sergio ziet op een ander pad, dus dat die die is Natuurlijk veel meer bezig met die cijfers. Alles wat moet voor het ondernemersplan, terwijl ik de eigenlijk de degene ben die zegt, Het is zo leuk ondernemen gaan, dus Ik ben meer van. Kijk eens hoe leuk Dit is.</p>
<p>“Ontbreken er onderdelen die vanuit jou perspectief ook belangrijk zouden zijn?”</p>	<p>Toen ik al om zo snel daar wel een antwoord op te geven, dat zou nu niet kunnen doen. Nee, ik, nee, ik zou het niet weten.</p>
<p>“Zou je deze module aanraden aan je collega's? Waarom (niet)?”</p>	<p>Maar ik denk wel dat dat ik dit ook nog met de coaches beneden zou kunnen gebruiken met die Salon diensten om te zeggen van kijk deze module, die zit hier nu in, zullen we dat Samen gaan gebruiken om om ook gewoon voor jullie, want zij gebruiken. Zij moeten daar gewoon dingen mee nu al mee doen. Zij zitten met zo een coach groep van 8 personen en die moeten Samen arrangementen gaan maken zo die moet toch van alles en Ik denk dat dat ik zeker twee collega's heb die dit ook leuk zou vinden.</p>

<p>Vragen roadmap - docenten</p>	
<p>“Denk je dat docenten bereid zijn om na kennismaking met creativiteit, experimentatie aan te gaan samen met GoFuture, om het platform verder te ontwikkelen?”</p>	<p>Ja, Ik denk het wel. Ik denk met die twee coaches die nu beneden zitten dat dat wel zou lukken. Ja, Ik denk niet dat ik Iedereen daarin mee krijgt. Maar goed, de Mensen die Natuurlijk toch ook wat mee moeten doen. Dat die lessen nou eenmaal een beetje zou moeten, dan denk ik dat ik daar wel Mensen van meekrijgt, ja. En dat verstandig is om met leer jaar 1 te beginnen, want dan trekt ze dat automatisch Natuurlijk wel lekker door. Dan kunnen we nog een beetje vormen en kneden enzo.</p>
<p>“Denk je dat scholen open staan voor de aanpak van GoFuture en bereid zijn om hier van te leren en geïnspireerd te raken, ook met betrekking tot andere lessen?”</p>	<p>Ik weet het niet, ik. Ik denk als een school enthousiast is om met Go future te werken, dat ze dit leuk vinden om daarmee aan de slag te gaan, want het past wel bij de overige. Ik vind wel een toevoeging aan de rest van lot dachten dus. Ja dat past eigenlijk heel goed bij, dus Als je vanuit die Achtergrond gaat denken, denk ik dat ze dat leuk vinden. Als iets dat enthousiast is, dan vind je dit ook gewoon leuk om te doen.</p>
<p>“Denk je dat scholen de ruimte en tijd kunnen bieden aan docenten om met creativiteit en experimentatie aan de slag te gaan?”</p>	<p>Ja, Dat is altijd een een hangijzer. Ik denk dat we iets meer euro moeten krijgen dan, want er valt zoveel uit. Maar Als ik bij ons kijk, maar goed, dat zal ook niet voor iedere school hetzelfde zijn. Het ligt er denk ik een beetje aan. Hoeveel ruimte krijg je om ja om om zo een les te geven voor opdracht te doen te eraf. Nou, Ik denk dat dit wel belangrijk is voor de ontwikkeling van een kind van een van een student, dus er zou gewoon een tijdvak gemaakt moeten worden in dat hele. Dan denk ik ja, dan kan je beter schuiven met bepaalde opdrachten die gewoon even Laten gaan of naar een ander leerjaar of zo.</p>

Overige opmerkingen	<p>Ja het samenwerken is ook echt wel moeilijk hoor, want ze zijn heel erg moeilijk met van met die wil ik wel met die willen niet en. Ja, Dat is Natuurlijk altijd wel altijd een issue geweest, denk ik, maar wordt wel steeds erger. Ze hebben ze zijn wat meer van. Ik ga achter de computer zitten en Ik ga zelf aan de slag en dan is het samenwerken toch wat meer gedraaid.</p> <p>Nou, Ik denk dat bij ons wel heel belangrijk is wat ik zelf merk is dat leerlingen zolang ik met dat Salon inrichten en zo bezig ben en ze kunnen knippen, plakken, kleuren, tekenen. Dat vinden ze fantastisch dat dat vind ik wel de meeste wel heel leuk zijn. Er zijn er eigenlijk maar nou.</p> <p>Twee per klas denk ik die die digitaal vaardig genoeg zijn om het op een floorplanner of wat dan ook te doen. En er wordt moment dat ik dan naar online ga, dan dan denk ik, hoe is het mogelijk dat jullie dit niet kunnen? Dat dat verbaast me echt met deze leeftijd.</p> <p>Ja, Ik denk dat het voor lia een nog een beetje teveel gevraagd is. Ik denk dat leerjaar een is Alleen maar aan het die willen gewoon die opdrachten afmaken, hè? Die denken daar niet heel veel over na van, hoe is het nou gegaan? Ik heb soms een leerling die zegt Van ja, Maar ik heb nou die Salon ingericht, maar nu heb ik dat moodboard gemaakt. Nou wil ik eigenlijk de kleuren anders dan willen ze dan. Dat zijn er nog wel eens een enkeling die zegt, van Ik wil eigenlijk dat veranderen daar. Daar is het dan geen tijd voor, dus dat Maar dat gebeurt bij mij dat echt een leerling al aan het nadenken is, Omdat ik dan kom met ja je buitenkant tekenen, hoe wil je je naam, waar ga je dat doen? En dan en dan komen er dingen bij elkaar en dan pas gaan ze een. Iets grotere plaatjes zien?</p> <p>Maar dat duurt wel even voordat dat gaat gebeuren en ik merk het met die een f die Ik heb die die zijn in periode 3 bezig met mijn bedrijfsidee ja, en dan zie ik antwoorden dat Ik denk van ja, je hebt gewoon echt helemaal geen idee waar je mee bezig bent.</p> <p>Om te zorgen dat het ondernemersplannen neer naar 3 af is, dus dat vind ik lastig om daar een uitspraak over te doen. Ik heb het gevoel dat ze heel veel moeten doen in een jaar twee en 3 om te zorgen, want ondernemersplannen zijn bijna nooit op tijd af en waar dat aan ligt, dat weet ik ook niet. Ik weet niet of het dan te moeilijk is of dat ze niet op zitten te letten. Dat is Natuurlijk ook wel denk ik een beetje aan de orde.</p> <p>Ja, wat er dan voor ons weer lastig, want dan denk ik, dan zit ik ineens met een bowlingbal. Dat is ook bijna niet meer te doen, want dat Dat was Natuurlijk niet niet de opzet van dit systeem. Ik weet je dus dat maar goed, dus het reflecteren op op. Wat heb ik nou gedaan? Hoe doe ik dat nou? Had het anders ontmoeten, dat gebeurt maar weinig.</p>
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Client interview

Vragen Algemeen - Robert Roadmap	
"Denk je dat deze stappen ervoor zorgen dat docenten en studenten creative confidence krijgen?"	<p>Ja, denk zeker dat dit er toe bijdraagt. Hun verder helpt en ook hun competenties verder helpt ontwikkelen en ze de stap laat zetten om het ook te gaan doen naar hun leerlingen en studenten toe en naar hun eigen gedrag. Dan denk ik wel, ja ja. Uitdaging is om het praktisch in te vullen. Als je docenten de stap kan laten zetten om hier mee aan de slag te gaan, dan denk ik het wel. Grootste punt is dat ze de motivatie hebben om hier mee aan de slag te gaan. Als je de eerste groep zo ver krijgt, is het makkelijker om anderen mee te krijgen. Ze hebben meer geloof in hun collega's dan in buitenstaanders. Maar de eerste stap om die trein rijden te krijgen, Dat is echt het moeilijkste.</p>

"Zorgen deze stappen ervoor dat de creatieve doelen die jullie binnen GoFuture gesteld hebben bereikt worden?"	<p>Ja, het past binnen de uitgangspunten. Er zijn conferenties / workshops nodig naast de digitale omgeving. Elementen zitten hier wel goed in, mooie balans.</p> <p>We moeten ook praktisch. Het platform verbeteren zowel Als het gaat om de om, de opdrachten. En de reflectie op de opdrachten als om het gedrag van de docenten zelf. Dus die elementen die die zitten hier allemaal wel goed in vind ik. En er zit toch wel mooie balans in omdat dat van tevoren wisten we nog niet helemaal hè? Van waar is de balans in jouw activiteiten ook? Zeg maar van waar ga je meer op focussen? En nou, Ik heb het idee dat dat ook wel goed uitgekomen is.</p>
"Is dit implementeerbaar / realiseerbaar?"	<p>Ja, er is nog wel een slag nodig, meer praktische invulling. Het is een mooi ontwerp, maar het moet nog wel praktisch ingevuld worden. Nee zeker ja, ja dus er ligt wel een basis. Maar dat was ook de reden dat ik aan jou vroeg. Van denk eens even over na over een vervolg, want er moet nog wel heel wat gebeuren.</p>
"Is de timing realistisch?"	<p>In zoverre realistisch, om pas in nieuwe schooljaar te beginnen. Dat lijkt me sowieso goed, want veel eerder meer is toch niet hè. Als je ziet wat er aan voorbereiding allemaal nog gedaan moet worden, lijkt me dat prima.</p> <p>Qua voorbereiding is de septembermaand lastig voor participatie. Tussen de herfstvakantie en kerstvakantie in is er meer tijd. Ipv. September, kan je het misschien 'najaar' noemen.</p>
"Zie je hier waarde in voor GoFuture?" / "Op welke manier denk je dat hiermee waarde toegevoegd wordt aan GoFuture?"	<p>Ja, nou ja, in die zin. We hebben natuurlijk uitgangspunten en doelen geformuleerd vanuit perspectief van Go Future. En nou ja, en dat was eigenlijk erop gebaseerd dat we zeiden het het platform moet verbeterd worden waar het gaat om opdrachten voor studenten. Er moet meer gestuurd worden op creativiteit, hè? Dat is de enige manier om het te laten functioneren en zorgen dat het echt geïmplementeerd wordt en ook In de competenties van docenten en hun motivatie voor wordt verwerkt, want alleen maar opnemen in het platform met kijk eens even, hè, we hebben hier een mooie opdrachten en we hebben een schatkist waar je gebruikt van gemaakt. Dat werkt gewoon niet. Ook omdat het te ver afstaat van het kwalificatiedossier, hè, de exameneisen.</p> <p>Die die roepen wel iets als je geluk hebt, staat er wel een keer het woord innovatievermogen in, Maar dat wordt helemaal niet gevuld. En of creativiteit? Het is iets waarvan wij vanuit Go Future zeg maar vinden dat dat veel meer aandacht zou moeten krijgen en waarvan we het idee hebben dat docenten daar wel voor open zouden kunnen gaan staan. Nou ja, daar is de beginsituatie en dan is het dus aardig wat nodig en Ik denk dat dit daar wel heel erg bij kan helpen, mits het wel een vervolg krijgt.</p>
Module "Denk je dat deze module docenten helpt met kennis en ondersteuning over het opzetten van de juiste creatieve houding in de klas? Op welke manier?"	<p>Ja, zeker goede basis, maar je moet ze wel zo ver krijgen.</p>
"Denk je dat docenten hier behoefte aan hebben en hier gebruik van gaan maken?"	<p>Mijn ervaring is wel dat ze het dan eerder doen (workshop ipv online module). Ze gaan eerder naar een workshop dan dat ze een docent handleiding goed bestuderen.</p>
"Zijn de opdrachten bruikbaar binnen de lessen van GoFuture?"	<p>Moeten nog wel wat aan de context en praktijk aangepast worden.</p>

<p>“Zijn de opdrachten geschikt voor de doelgroep (docenten / studenten vmbo – MBO)?”</p>	<p>Opdracht zelfreflectie creativiteit – kan ook activiteit voor de studenten zijn. De hier past ook mooi hoor in wat we hebben besproken, hè, dat dat die workshops zeg, maar die moeten ook wel heel prachtig zijn, zodat ze aan het eind van de dag of van de middag ook echt het gevoel hebben van nou hè? Ik kan hiermee verder in de klas, dus van vandaag de workshop morgen toepassen in de klas. Het zou zelfs een deel van de workshop kunnen zijn.</p> <p>Brave space: Ik denk wel dat dit voor HBO studenten en universitaire studenten goed werkt, maar voor mbo en vmbo enzo hè, zou het wel heel praktisch ingevuld moeten worden middels ze dit kunnen hoor, dus ja. Laten we zeggen, het zijn wel voor hun gevoel. Vrij open globale opdrachten. Die abstract over kunnen komen Omdat het begrip creativiteit is Natuurlijk al ik deze context een niet zo'n simpel iets. Maar goed dat, dat doet het niet hoe ik zeg niet dat het niet kan, integendeel, Maar ik weet wel dat de uitdaging al Dat is om het heel ja, praktisch. Te verwoorden te structureren? Ja?</p> <p>Faalverhalen: Was wel interessant perspectief, hè? Dat boekje in dat project en überhaupt het initiatief. Ja, Toen ik daarmee geconfronteerd werd, ik wel echt wel, hé, Dit is, Dit is nieuw. Je zou zelfs niet zo opgekomen zijn.</p>
<p>“Voldoet deze module aan je behoeftes?”</p>	<p>Ja, in mijn ogen heel passend en logisch.</p>
<p>“Hoe zie je dit verwerkt worden binnen GoFuture?”</p>	<p>Ik ben bezig met Sergio om een video lessen reeks te maken en Hij is toevallig heel creatief, vind ik daarin oog. En nou ja, dat gaat bijvoorbeeld over de marketing mix of over een saaie dingen als een balans en verlies en winstrekening. En dat vinden ze allemaal heel moedig en saai. En Waarom heb je dat nodig? En nou ja. Dus Ik ben met hem bezig, Maar dat zou ook heel goed dan passen, Omdat Natuurlijk te delen met andere docenten en daarmee hun stimuleren om ook zoiets te doen, hè met ons.</p>
<p>Overige opmerkingen</p>	<p>Overigens is ook prachtig vormgegeven, vind ik hoor jouw presentatie echt heel mooi? Ja.</p>