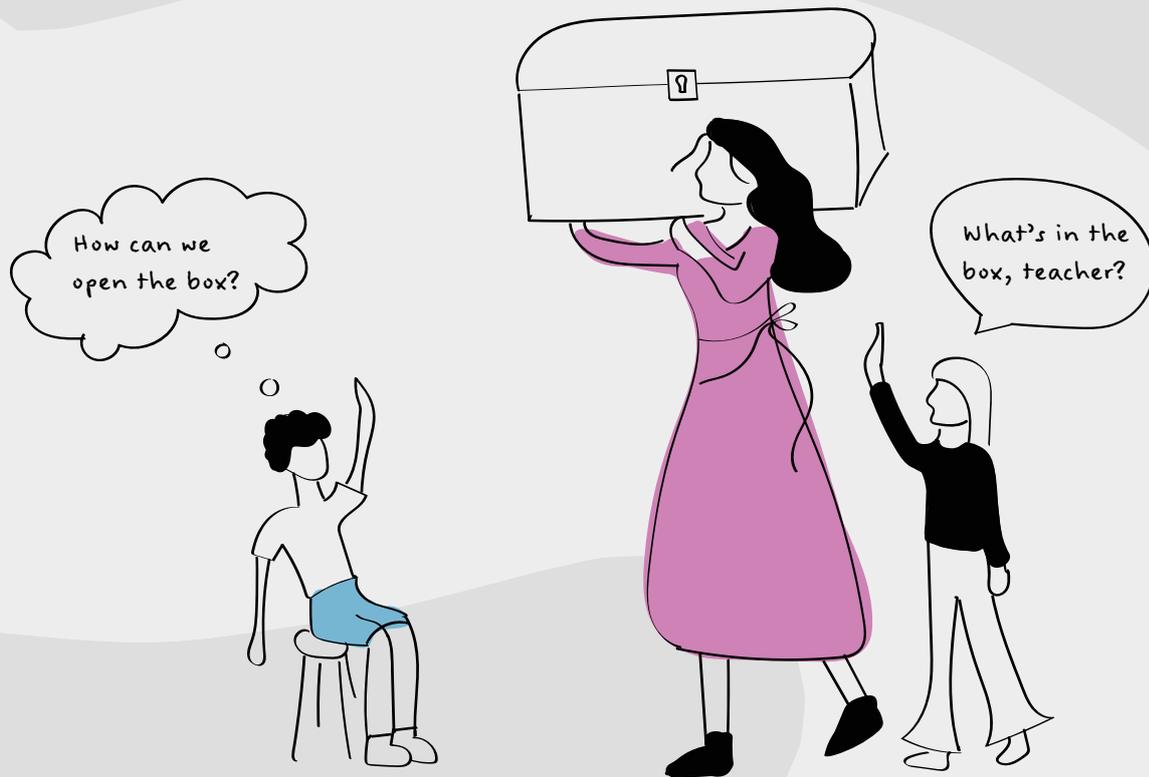


DESIGNING FOR KINDERFACULTEIT PENDRECHT

A roadmap to implement the stimulation of curiosity
and perseverance in the organization's
working method



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Strategic Product Design
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COLOPHON

Designing for Kinderfaculteit Pendrecht

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Master thesis
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PREFACE

Around a year ago, when looking for a suitable graduation project preferably in the field of social design, I reached out to Stichting de Verre Bergen, an organization executing social projects in Rotterdam. They presented an opportunity for me to work on a project related to the Kinderfaculteit Pendrecht. Throughout the past eight months, I have enthusiastically dedicated myself to this project. This graduation project has allowed me to experience the values that a design approach has and I had the opportunity to peek into an organization that is making a significant impact on Rotterdam, particularly through initiatives like the Kinderfaculteit. I am grateful for the valuable experience I gained from facilitating co-creation sessions and conducting interviews and observations. Since most of my master's program projects involved group work, I learned a lot from going through the design process on my own.

I would like to express my gratitude to Kim and Carlijn for making this graduation project possible and providing guidance during my time at Stichting de Verre Bergen. Additionally, I want to thank everyone at Stichting de Verre Bergen, the Kinderfaculteit, and Bouwkeet who supported me throughout my graduation project over the past months.

I would also like to thank my supervisors from TU Delft, Jo and Lise, for their support and coaching during the project. I appreciated their constructive feedback and willingness to offer guidance whenever needed.

Last but certainly not least, I want to express my gratitude to my family, friends and boyfriend for their support during my graduation project.

ABSTRACT

Kinderfaculteit Pendrecht, one of the programs of Stichting de Verre Bergen, offers children in Pendrecht the opportunity to spend their time in a useful way through after-school lessons. The Kinderfaculteit's vision is to stimulate curiosity and perseverance among the children. As this vision is not yet integrated into their working method, the research team of Stichting de Verre Bergen is researching techniques to stimulate curiosity and perseverance. The aim of this graduation project is to integrate the core concepts of curiosity and perseverance within the Kinderfaculteit, using a design approach.

The project utilizes the Double Diamond structure (Framework for Innovation: Design Council's Evolved Double Diamond, 2022). Since this graduation project is a social design project, various methods involving stakeholders are utilized, including semi-structured interviews, observations, and co-creation sessions.

In order to integrate curiosity and perseverance into the working method of the Kinderfaculteit, a roadmap is designed as a means to achieve this goal. Additionally, three concepts are designed to make each phase of the roadmap more tangible, while also serving as inspiration and potential starting points for the Kinderfaculteit. The roadmap and concepts are further explained in a booklet, which is delivered to the Kinderfaculteit as a final outcome. The resulting design is validated with one of the project managers of the Kinderfaculteit, yielding encouraging results since she is planning to incorporate the final design during the implementation of the core concepts. To enhance the feasibility of the design, suggestions are made to complement the roadmap and concepts.

This project demonstrates that taking a design approach to stimulate specific behaviours within an organization, like the Kinderfaculteit, provides insights into the various touchpoints that can influence the stimulation of curiosity and perseverance. Learning specific behaviours involve numerous different variables beyond an individual (such as these touchpoints), which can be difficult to determine using conventional, analytical research methods. Given the predominant focus on individual-level research on learning these behaviours, the importance of investigating the stimulation of behaviours like curiosity and perseverance on an organizational and/or group level is emphasized, rather than solely at the individual level.



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Chapter 1

INTRODUCTION

In this chapter, an introduction of the project assignment is given with a short description of the stakeholders that are involved. The chapter ends with the approach of this graduation project.

The chapter is structured as follows:

- 1.1. Project Context
- 1.2. Project Brief
- 1.3. Project Approach

1.1. PROJECT CONTEXT

In 2013, the residents of the Pendrecht neighbourhood in Rotterdam experienced a bad living situation preventing children to flourish (Stichting de Verre Bergen, 2013). Pendrecht was the least child-friendly neighbourhood to grow up in comparison to the other neighbourhoods in the Charlois sub-municipality, while Charlois itself was already in the top three of the least child-friendly neighbourhoods of Rotterdam in 2012 (Investeringsvoorstel, personal communication, May 2023). In recent years, more attention has been paid to the inequality of opportunity in the Dutch education system. This topic is therefore one of the points of attention of the national government (Inspectie van het Onderwijs, 2022).

Kinderfaculteit Pendrecht was initiated in 2013 as a program made to provide Pendrecht children with the opportunity to spend their time in a useful way by offering after-school activities with educational, cultural and sports lessons. It was a collaboration between Vitaal Pendrecht¹, the primary schools in Pendrecht, the municipality of Rotterdam, the Charlois sub-municipality, housing corporation Woonstad and Stichting de Verre Bergen (SDVB), a philanthropic foundation in Rotterdam that works on societal projects intending to make Rotterdam stronger and better (Over ons, 2021). The Kinderfaculteit aims for children in Pendrecht to do new things, both inside and outside school, to discover what they find interesting and how they can persevere if they want to learn something (Kinderfaculteit, 2022). It has a building in Pendrecht and organizes courses, such as creative drawing, playing basketball, English, cooking and a lot more.

The Kinderfaculteit has the vision to stimulate the broadening of a child's perspective, curiosity and perseverance. These core concepts, the broadening of a child's perspective, curiosity and perseverance, were introduced by the SDVB, together with the Kinderfaculteit. However, at the moment these core concepts are not yet integrated within their working method. The Kinderfaculteit is mostly busy with operational tasks, which makes it difficult to make time to improve the working method of the organization. SDVB – which funds and works on improving the quality of the Kinderfaculteit – is currently working on a literature review about stimulating curiosity and perseverance to form educational techniques that can be used within the Kinderfaculteit. SDVB and the Kinderfaculteit are curious about how to practically implement these techniques within the Kinderfaculteit in a way that is valuable for all involved stakeholders. This project has been initiated by the research team of SDVB.

1.2. PROJECT BRIEF

The project was set up together with the research team of SDVB. They are researching curiosity and perseverance to come up with educational techniques to implement in the lessons of the Kinderfaculteit. They also plan to incorporate these core concepts of curiosity and perseverance and the educational techniques into the quality instruments that the Kinderfaculteit uses to observe and assess the quality of the lessons. The SDVB research team and Kinderfaculteit aim for a better alignment between the Kinderfaculteit's vision and working method to improve the core of the program. So in this graduation project, I use a design process to integrate the core concepts of curiosity and perseverance into the working method of the Kinderfaculteit.

I have decided to exclude the core concept of broadening a child's perspective in this project and focus on the implementation of stimulating curiosity and perseverance within the working method of the Kinderfaculteit. This is because the Kinderfaculteit is a place where people from different schools, cultures and ages meet and where children have the opportunity to participate in activities that are normally not accessible; which is likely to broaden children's perspectives. The research team of SDVB and the Kinderfaculteit did not find a suitable definition in the literature to find educational techniques, which led to the exclusion of this core concept from the literature review.



10 ¹ Vitaal Pendrecht is a residents' organization that promotes and addresses problems in the neighbourhood and stands up for the needs of neighbourhood residents.

1.3. PROJECT APPROACH

Even though a design process is an iterative process, I intended to make a report that is understandable to the reader. To enhance the clarity of the report, an organized overview was created in Table 1, illustrating the goals assigned to each chapter of this report, along with the corresponding research and design questions and methods. For some of the chapters, similar research methods are presented since one research method could have impacted multiple chapters in this report.

In Table 1, the titles of the Double Diamond approach were included (Framework for Innovation: Design Council's Evolved Double Diamond, 2022). The Double Diamond approach provides me with a clear overview of my progress within the project. It also allows me to work in a more structured manner and helps me to present to other stakeholders in which stage I am in the project. The Double Diamond approach goes through four phases: discover, define, develop and deliver. The diamond structure allows for the alternation between diverging and converging; diverging can occur in the discover and develop phases, and converging can occur in the define and deliver phases. Figure 1 depicts this double diamond approach. In the discover phase of the double diamond approach, designers are invited to comprehend the issue or need at hand rather than making assumptions. The define phase involves setting the design requirements and converging to the definition of the scope of the project. The develop phase is the phase where ideation occurs. Different answers to the problem or need are explored. In the deliver phase of the double diamond approach, the concept(s) are tested and one or a combination of multiple concepts are chosen and/or improved. Prototyping the idea, whether digitally or practically, is also a part of this phase.

The double diamond structure was used in a non-linear way. For example, in the research phase, I already planned design activities while in the develop phase, I also researched literature at the same time. This iterative approach allowed me to get an increasingly better sense of what is needed to implement the vision of the Kinderfaculteit into the working method.

During moments of analysis within the process, I often reflected on what the insights gathered meant for the direction of the process. By scheduling reflection moments with my supervisors from Stichting de Verre Bergen, I was able to constantly iterate and immediately triangulate whether this iteration was valuable for the project.

Since this project is focused on designing for the "common good", I valued the involvement of different stakeholders during the design process. This approach to design is known as participatory design, co-design and co-creation². Designing for the common good can also be referred to as social design (Tromp & Vial, 2022). Even though this project could be referred to as a social design project, "conceptual clarity is lacking" when it comes to social design, according to Tromp & Vial (2022, p.1). Armstrong et al. (2014) decided to define social design broadly because they recognized that the term appeared in a variety of ways: "Social design highlights the concepts and activities enacted within participatory approaches to researching, generating and realizing new ways to make change happen towards collective and social ends, rather than predominantly commercial objectives" (as cited in Tromp & Vial, 2022). Involving external experts or stakeholders within the project makes the design process more ethical since these people may be affected by the solution, better solutions can be created by providing information to a designer and it also builds stakeholder support (Van Boeijen et al., 2020, p. 61). Therefore, in this design process, I have used methods to get to know the context of the project with the involved stakeholders as well as possible. This has been done through in-depth desk research, semi-structured interviews, observations and co-creation sessions.

Table 1. Overview of all research, define and design questions and illustrated methods and tools.

Double diamond phase	chapter	research, define and/or design questions	methods and tools
DISCOVER	CH2	RQ1 Who are the stakeholders and what is their relation with the KF?	
		RQ2 What role does the neighbourhood Pendrecht have in relation to the Kinderfaculteit?	
		RQ3 How does the Kinderfaculteit differentiate itself from similar initiatives?	
	CH3	RQ4 How does the Kinderfaculteit operate as an organization?	
		RQ5 What does a lesson look like within the Kinderfaculteit?	
		RQ6 How do teachers perceive the way the Kinderfaculteit operates and its vision of stimulating curiosity and perseverance?	
	CH4	RQ7 Which definition of curiosity and perseverance fits this graduation project?	
		RQ8 Which techniques stimulate curiosity and perseverance?	
DEFINE	CH5	DQ1 What is the problem definition based on the insights gathered from the discover phase?	
		DQ2 Which design direction fits this graduation project based on the insights gathered from the discover phase?	
		DQ3 Which design criteria provide valuable guidance for the final design, based on the insights gathered from the discover phase?	
DEVELOP	CH6	DQ4 At which moments and locations within the Kinderfaculteit can curiosity and perseverance be stimulated?	
		DQ5 Which moments and locations within the Kinderfaculteit do the project managers consider most important to focus on when it comes to stimulating curiosity and perseverance?	
	CH7	DQ8 Which phases should be incorporated within the roadmap?	
		DQ9 Which roadmap elements should be incorporated into the roadmap?	
		DQ10 Which concepts are valuable for the Kinderfaculteit that fit the phases of the roadmap?	
DELIVER	CH8	DQ11 What will the final design of the roadmap and concepts look like?	
		DQ12 How to integrate the designs into the Kinderfaculteit?	
		DQ13 Which iterations can I apply to the designs?	
		RQ6 What is the project manager's opinion of the designed roadmap and concepts?	

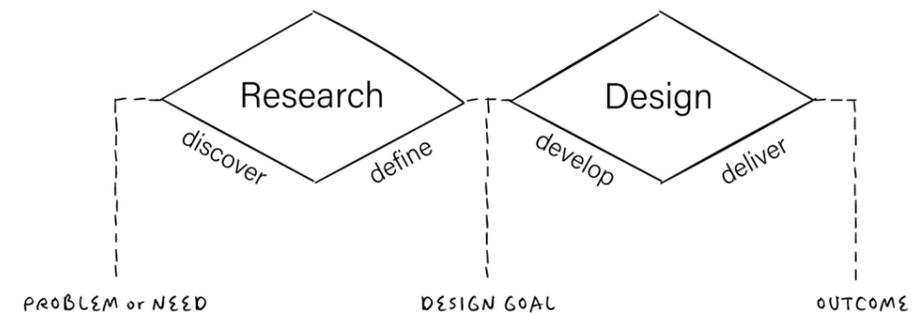


Figure 1. The Double Diamond approach.

12 ² Participatory design, co-design and co-creation are often confused and/or treated synonymously with one another. According to Sanders (2008), participatory design is the older terminology used for what is now often called co-design and co-creation. With co-creation, I mean a collaborative creative action or event. I see co-design as the overarching term to include external experts and/or stakeholders in the total span of a design project.

Chapter 2

DISCOVERING THE CONTEXT

In this chapter, the discovery of the context of the Kinderfaculteit is described. Understanding the background of the Kinderfaculteit helped me to establish a foundation for comprehending the organization, which contributes to the design process to create a suitable design solution.

The chapter is structured as follows:

- 2.1. Research Approach
- 2.2. The Stakeholders
- 2.3. The Neighbourhood Pendrecht
 - 2.3.1. History
 - 2.3.2. Demographics
 - 2.3.3. The Location of the Kinderfaculteit
- 2.4. Similar Initiatives
- 2.5. Key Insights

2.1. RESEARCH APPROACH

To be able to understand the context of the Kinderfaculteit, the following research questions were answered:

RQ1 Who are the stakeholders and what is their relation with the KF?

RQ2 What role does the neighbourhood Pendrecht have in relation to the Kinderfaculteit?

RQ3 How does the Kinderfaculteit differentiate itself from similar initiatives?

The following research methods were used to obtain insights:

 Extensive desk research was conducted to investigate the stakeholders, neighbourhood, and comparable initiatives.

 An interview was conducted with Marvin Pires, one of the program managers at SDVB, who plays a vital role in the Pendrecht initiatives. The interview guide can be found in Appendix C.

 On-site observations were carried out at the Kinderfaculteit to gain an understanding of the building's layout and appearance, important for later in the design process.

2.2. THE STAKEHOLDERS

To get a clear understanding of how the Kinderfaculteit is connected to its stakeholders, I explored the organizational structure of the Kinderfaculteit and the SDVB. As described in the introduction of this report, Vitaal Pendrecht was the initiator of the Kinderfaculteit and the primary schools of Pendrecht and Stichting de Verre Bergen were closely involved. Since 2019, the Kinderfaculteit has become part of the separate foundation Pendrecht Vooruit (initiated by SDVB). The board includes people from SDVB and Vitaal Pendrecht. This board is responsible for different initiatives and locations in Pendrecht. Figure 2 depicts the stakeholder map of the Kinderfaculteit, with the stakeholders that are relevant for this project highlighted. In this project, the Kinderfaculteit and SDVB are involved, the latter is discussed in the following section.

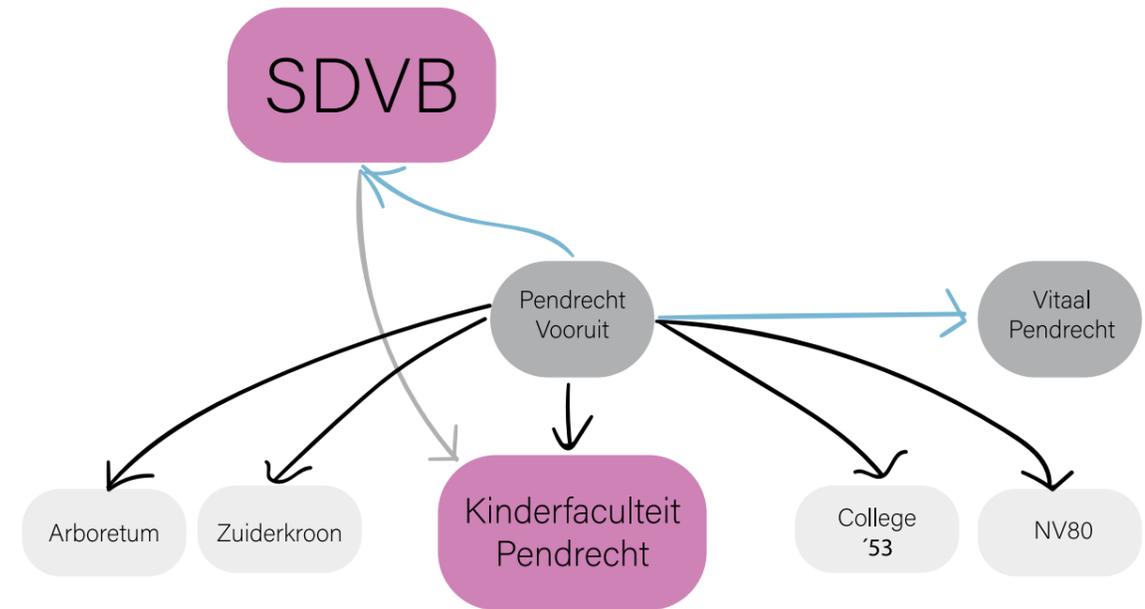


Figure 2. Stakeholder Map. Blue arrows: includes people from, black arrows: is responsible for, grey arrow: connection relevant for this project.

SDVB is a philanthropic foundation that develops “initiatives, activities and projects in the field of improving social and economic development and the well-being of the inhabitants of Rotterdam” and therefore mainly wants to make Rotterdam stronger and better (ANBI, 2022; Over ons, 2021). SDVB is founded by the family van der Vorm. The family has earned their money in Rotterdam and wants to give something back to the city through the fund. The programs of SDVB focus on helping vulnerable groups in society and improving mostly developmental and educational opportunities (ANBI, 2022). Next to financially supporting the programs, SDVB invests time to improve the quality of the programs and in this way, they hope to create a long-term impact in the city of Rotterdam (Over Stichting de Verre Bergen, n.d.). The organization consists of a team of around 50 people with diverse career and study backgrounds. The departments of SDVB overlap: for every program, there is a team involved, but there are also different teams for each expertise such as research, management and real estate. Next to that, the organization consists of a board. The board consists of four people, of which two of them are from the family van der Vorm. SDVB advises and gives proposals for the programs and the board then decides on the expenses of the foundation.

2.3. THE NEIGHBOURHOOD PENDRECHT

The establishment of the Kinderfaculteit was driven by a clear objective to positively impact the Pendrecht neighbourhood (Universiteit van Amsterdam, 2016). This objective is apparent through the involvement of Vitaal Pendrecht's involvement in the establishment of the Kinderfaculteit, the Kinderfaculteit's close partnerships with Pendrecht primary schools, and the location situated at the heart of Pendrecht. I made the decision to dive deeper into the context of the neighbourhood because the Kinderfaculteit continues to be an important location for Pendrecht. Pendrecht is one of the neighbourhoods of the district Charlois, located in the south of Rotterdam. It is a developing neighbourhood moving in the right direction (Wijkagenda 2019-2022, 2018). Due to the green character and spacious design of the neighbourhood, Pendrecht is called one of the Zuidelijke Tuinsteden (translated to southern garden cities). The residential areas of Pendrecht are located around Square 1953, which serves as the neighbourhood's centre. Four primary schools are located in Pendrecht. There are child-friendly paths in the neighbourhood thanks to recent investments (Wijkprofiel Pendrecht, 2022).

Pendrecht was initially a desirable neighbourhood for the middle class, but it began to decline in the late 1980s. Original residents, who were doing better than their parents, moved to surrounding municipalities as they had different housing needs. Consequently, the flats became occupied by mostly benefit-dependent individuals, leading to an increase in crime and a growing sense of unsafety. In 2009, Pendrecht was listed as the second-worst neighbourhood in the Netherlands by the Ministry of Housing, Spatial Planning and Environment. A tragic incident in 2003, where a 13-year-old schoolboy was shot and killed while playing with snowballs, highlighted the need for change in the neighbourhood (Kooyman, 2022).

2.3.1. History

To come up with a design that fits the stakeholders involved, I wanted to understand the identity of the neighbourhood better: what preceded the opening of the Kinderfaculteit?

Pendrecht was built because of the housing shortage after World War II. Since the start of the construction of Pendrecht was in 1953, all streets are named after villages affected by the flood of 1953 (Wijkprofiel Pendrecht, 2022).

Vitaal Pendrecht was founded in 2003 in reaction to the bad publicities of the neighbourhood (Over Vitaal Pendrecht, n.d.). They worked to improve the neighbourhood's social cohesion and image. To boost the image of Pendrecht, sub municipality Charlois and Woonstad Rotterdam launched the "Pendrecht is goed bezig" (translated to "Pendrecht is doing well") campaign in close cooperation with the residents (Boom, 2011). Every month for 25 months, huge billboards in the neighbourhood featured a resident who worked hard for the neighbourhood with a project that the person worked on ("Samen Naar Zuiderparkspelen," 2011). Another project in the neighbourhood is Pendrecht University, founded in 2006 as a result of the realization that professionals had all kinds of ideas about the neighbourhood, but that very little was being done with residents' knowledge and ideas (Pendrecht Universiteit, n.d.). Pendrecht University is a place where residents' knowledge is passed on to local professionals. Next to improving the social cohesion and image of the neighbourhood, Pendrecht also improved the housing and environment. In the last twenty years, Woonstad Rotterdam has demolished 1100 homes, built 630 new ones and renovated about 700 homes and most of them gas-free. Outdoor spaces also got renovated (Kooyman, 2022). Meanwhile, the Kinderfaculteit was founded in 2013 to support the children in Pendrecht. Even though there are now still areas for improvement, the neighbourhood is doing better and better (Goverde, as cited in Kooyman, 2022).

2.3.2. Demographics

Since the demographics of Pendrecht also help to understand its identity better, I dived deeper into the demographics of the neighbourhood.

In 2022, Pendrecht had a population of 12.395 people (Buurt Pendrecht in Cijfers en Grafieken, 2023). Pendrecht is notable for its young population: 2.600 people aged 0 to 15 years old make up 21% of the total population. Figure 3 depicts a comparison of Pendrecht and Rotterdam.

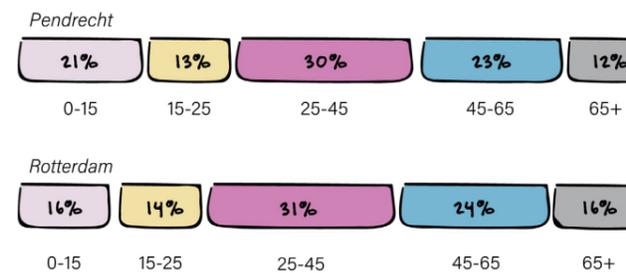


Figure 3. Percentage³ of ages of residents in Pendrecht compared to the total of Rotterdam.



Figure 4. Neighbourhood profile of Pendrecht (left) compared to the total of Rotterdam (right).

As readable in the neighbourhood profile⁴ of Pendrecht, depicted in Figure 4, Pendrecht scores well on the objective data (Wijkprofiel Pendrecht, 2022; Wijkprofiel Rotterdam, 2022). Especially while looking at the safety index, Pendrecht has positive scores in the objective and subjective data (except for nuisance). However, the general data of all three indexes show negative outcomes: the overall feeling of safety, the living experience and quality of life judgment score poorly. During the interview with Marvin Pires, he also expressed the opinion that Pendrecht's ongoing feeling of unsafety is an issue (personal communication, February 14, 2023). In addition, the subjective data in the physical and social index also leave room for improvement. It is remarkable that there is also a big difference in the objective and subjective data here. Within the social index, it is also noteworthy that the connection that people have with the neighbourhood scores positively; both objectively and subjectively.

Since Figure 4 depicts neighbourhood profiles translated to English, the original Dutch versions can be found in Appendix B.

When it comes to education, Pendrecht has relatively a large amount of uneducated people. 43% of Pendrecht's residents are uneducated, compared to a total of 31% in Rotterdam (Buurt Pendrecht in Cijfers en Grafieken, 2023; Gemeente Rotterdam in Cijfers en Grafieken, 2023).

Pendrecht's students' risk of educational disadvantage scores negatively according to the high school weighting of Pendrecht's primary schools (Onderwijs van Inspectie, 2022). Commissioned by the Ministry of Education, Culture and Science (OCW), Statistics Netherlands (CBS) investigated which characteristics best predict students' risk of educational disadvantage. The school weighting is calculated based on these characteristics. The characteristics include the parents' educational level, the average educational level of all mothers at school, the parents' country of origin, the mother's length of stay in the Netherlands, and whether or not the parents are in the process of restructuring their debt. The lower the school weighting, the less complex the pupil population and the higher the results CBS expects from the school. Figure 5 depicts the frequency distribution of the average school weighting of all schools in the Netherlands, with three primary schools in Pendrecht highlighted.

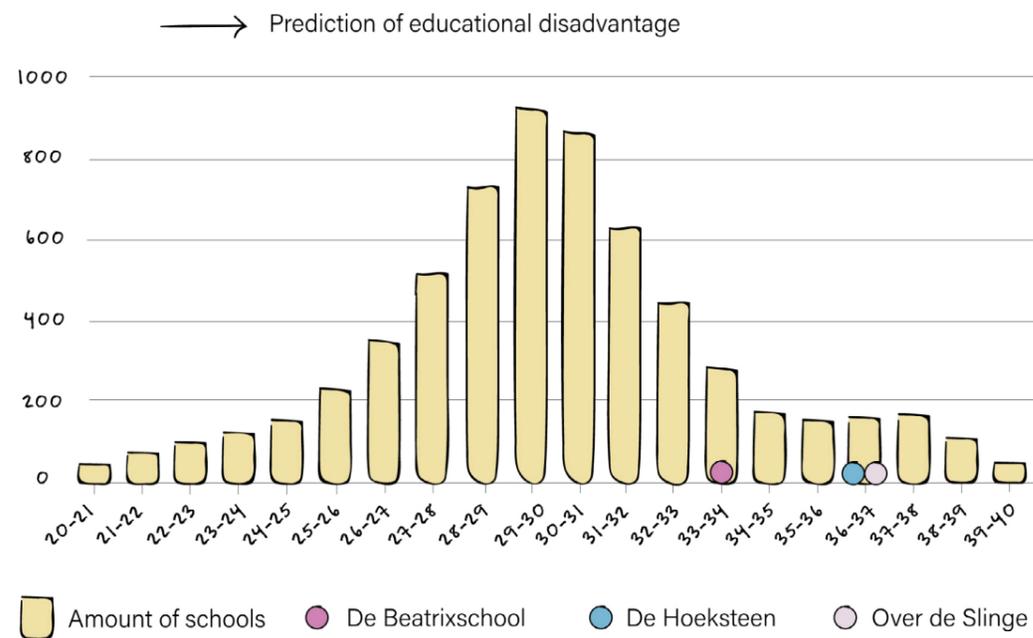


Figure 5. School weighting in the Netherlands, with three primary schools in Pendrecht highlighted. Yellow: De Beatrixschool, Orange: De Hoeksteen, Green: Over de Slinge.

2.3.3. The Location of the Kinderfaculteit

The Kinderfaculteit is located in the heart of Pendrecht: at Plein 1953. It is next to the location of Vitaal Pendrecht. Figure 6 depicts the location of the Kinderfaculteit on the map of Pendrecht.

When the Kinderfaculteit was initiated, classrooms had to be constructed because the area used to be one large space. The Kinderfaculteit currently consists of a big hall surrounded by seven classrooms. Three of the classrooms border the garden of the Kinderfaculteit. The walls between the hall and the classrooms are composed of glass. A picture of the Kinderfaculteit building can be found in Figure 7. While many of the Kinderfaculteit lessons are given at this location, some lessons take place at other locations. The cooking lessons are given at Arboretum Pendrecht, in a small building with a kitchen with all the needed equipment. The sports lessons are mostly given in various gymnasiums in Pendrecht.

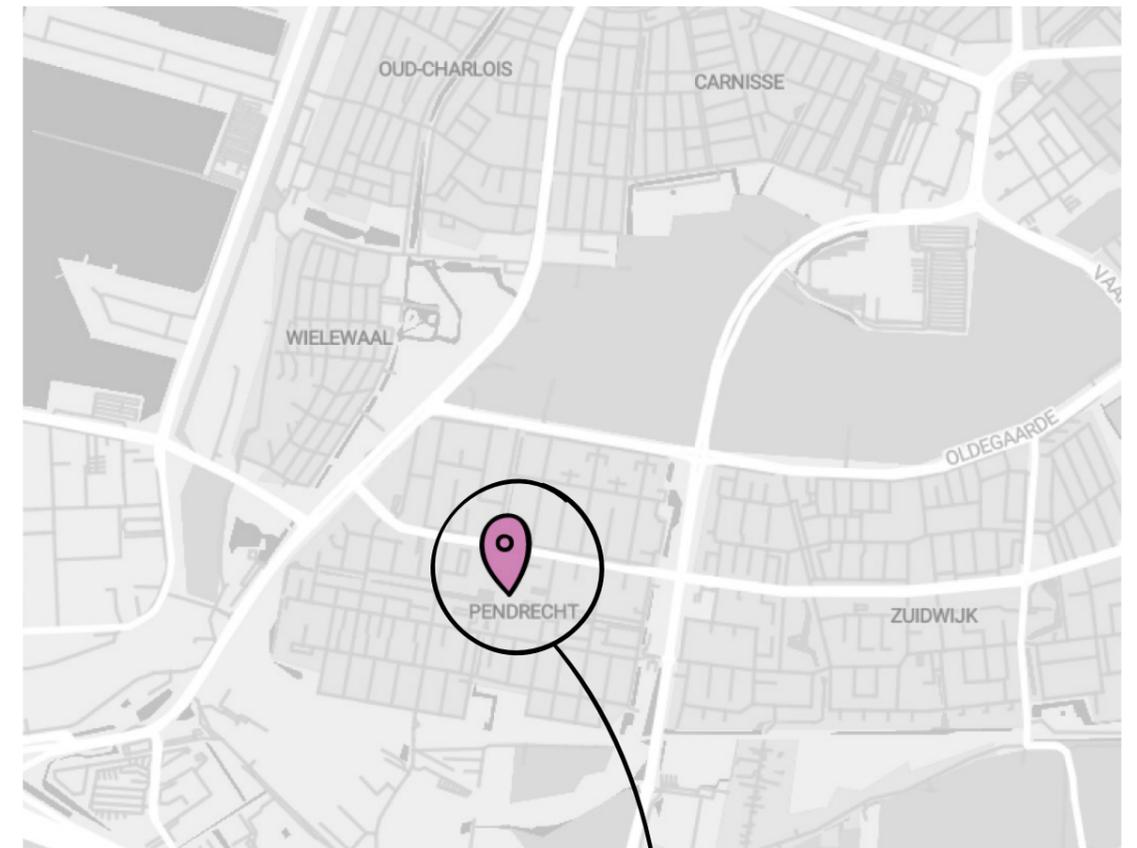


Figure 6. The location of the Kinderfaculteit.



Figure 7. The building of the Kinderfaculteit.

2.4. SIMILAR INITIATIVES

An analysis of initiatives in Rotterdam and surroundings that are comparable to the Kinderfaculteit was done to gain a sense of the context of the Kinderfaculteit. Figure 8 shows an overview of the initiatives found. Some of the similar initiatives are focused on exploring different professions; Petje Af Rotterdam and IMC Weekendschool Rotterdam Zuid are examples where children are invited to get to know different professions and to go visit various companies (Petje Af Rotterdam, n.d.; IMC Weekendschool Rotterdam Zuid, 2021). Kinderacademie Delft, Brede School Gouda and Brede School Academie Schiedam are examples that are more similar to the Kinderfaculteit regarding getting to choose a series of classes (Kinder Academie Delft, n.d.; Doel & Visie, n.d., Werkwijze BSA Schiedam, n.d.). Nearly every program found also aims to encourage kids to discover their talents. Some of the projects are more concerned with the children's academic success, while others are more focused on them having fun after school. The Kinderfaculteit appears unique in that it also serves the Pendrecht neighbourhood; the local primary schools are closely involved, and it is a place where children from all schools gather. In addition, the Kinderfaculteit is open to all children in the neighbourhood and membership is free. The children are free to take part in as many lessons as they like.

One of SDVB's programs, Bouwkeet, has similarities to the Kinderfaculteit. Children between the ages of 8 and 15 who live in the neighbourhood or attend a nearby school are offered free crafting programs at Bouwkeet. To get inspired by this initiative, I have visited the location of Bouwkeet (more about this visit can be found in Chapter 7). Bouwkeet is a maker space in the Rotterdam neighbourhood of Bospolder-Tussendijken (Over Bouwkeet, n.d.).

Bouwkeet strives to provide local residents with the chance to develop empowerment, broadening of perspectives, and soft skills, particularly the target group of young people. Soft skills include creativity, cooperation, problem-solving skills and entrepreneurship. Similar to the Kinderfaculteit, they focus on stimulating curiosity and perseverance to encourage creativity and problem-solving skills.

Tech is used as a tool to achieve their goals. In their five workplaces —metal, wood, ceramics, textile, or Fablab— Bouwkeet participants investigate step-by-step making processes with instruction and in small groups. To increase the chances of Bouwkeet having a positive impact, the organization wants children to have fun, which is similar to the way the Kinderfaculteit operates.

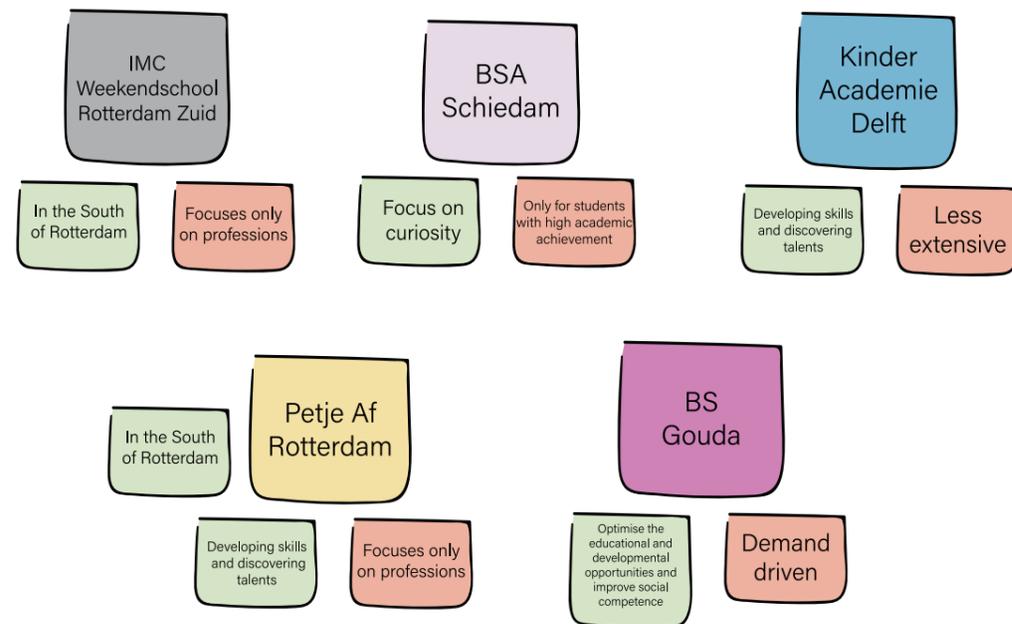


Figure 8. Overview of similar initiatives. Green Post-its: similarities, red Post-its: differences.

2.5. KEY INSIGHTS

Key insights are formulated based on the findings from this chapter. These insights serve as answers to the research questions which can be found at the beginning of this chapter.

1. The Kinderfaculteit is one of SDVB's initiatives in Pendrecht. SDVB and Kinderfaculteit Pendrecht are the important stakeholders for this project, with the employees, teachers and children from the Kinderfaculteit included;
2. The establishment of the Kinderfaculteit was driven by the need to support the significant number of children in Pendrecht, a developing neighbourhood that is doing better and better in areas such as the physical environment, social factors and safety. However, there is still room for improvement;
3. The lessons of the Kinderfaculteit take place at the location of the Kinderfaculteit in the centre of Pendrecht and also in gymnasiums and the arboretum in Pendrecht;
4. The Kinderfaculteit is unique in its characteristic that it is a contribution to the neighbourhood and is therefore closely connected to the neighbourhood. Other aspects in which the Kinderfaculteit is unique are the fact that the lessons are open for all children in the neighbourhood and it is free to participate;
5. Bouwkeet has similarities with the Kinderfaculteit, which made it interesting to plan a visit to the location.

Chapter 3

DISCOVERING KINDERFACULTEIT PENDRECHT

This chapter presents the findings regarding the organization Kinderfaculteit Pendrecht. The chapter begins with a section that outlines the operational aspects of the organization and is followed by an overview of the subjective insights gathered through interviews with the teachers, project and program manager, and observations during the lessons.

The chapter is structured as follows:

- 3.1. Research Approach
- 3.2. The Operational Structure
 - 3.2.1. The Organization
 - 3.2.2. The Teachers
 - 3.2.3. The Children
- 3.3. Understanding the People
- 3.4. Key Insights

3.1. RESEARCH APPROACH

To be able to gather valuable insights about the Kinderfaculteit Pendrecht, the following research questions were answered:

RQ4 How does the Kinderfaculteit operate as an organization?

RQ5 What does a lesson look like within the Kinderfaculteit?

RQ6 How do teachers perceive the way the Kinderfaculteit operates and its vision of stimulating curiosity and perseverance?

The following research methods were used to obtain insights:

 Desk research was conducted to gain insights into the Kinderfaculteit as an organization and the involved individuals. Understanding the organization's identity helps me to design a solution that aligns with the Kinderfaculteit.

 An interview with one of the Kinderfaculteit project managers was conducted to get a deeper understanding of the current working method of the organization and the extent to which curiosity and perseverance are already being implemented within the organization.

 I conducted interviews with four diverse teachers at the Kinderfaculteit to gain insights into their teaching methods and experiences. These teachers were chosen to represent different teaching styles, with input from the project manager. The interviews aimed to gather insights into their teaching approaches and their perspectives on the Kinderfaculteit's operations and vision for stimulating curiosity and perseverance. The teachers were asked to describe how they foster curiosity and perseverance in their lessons, providing an overview of the extent to which these qualities are already incorporated into their teaching methods.

 I conducted seven observations during various Kinderfaculteit lessons, including kickboxing, English, debate club, ICT and media, yoga, creative drawing, and cooking. Both teachers and children were informed about the observations to ensure transparency (also known as overt observations). The observations were semi-structured, allowing for an open-minded approach. The main question driving the observations was, "What does a Kinderfaculteit lesson look like?" with sub-questions: "How do the children respond to the teacher's teaching style?" and "To what extent is the stimulation of curiosity and perseverance already integrated into the lesson?"

 The interview with Marvin Pires, program manager at SDVB, also contributed to the insights discussed in this chapter about the evolution of the Kinderfaculteit throughout the years.

All interviews were transcribed and I have selected the quotes and observation notes that were most relevant and/or repetitive. All quotes were analyzed with statement cards (Sanders & Stappers, 2013). Additionally, the statement cards and the insights from the observations were grouped into categories. In Appendix D, the complete analysis of the interviews and observations with interview guides can be found.

3.2. THE OPERATIONAL STRUCTURE

The subsequent paragraph provides a comprehensive overview of the organizational details obtained regarding the Kinderfaculteit, including the evolution of the Kinderfaculteit and the way the organization operates.

3.2.1. The Organization

As mentioned earlier in this report, Kinderfaculteit Pendrecht is a place where all children from Pendrecht can participate in free courses such as piano lessons, ICT and ballet. According to the teachers at the Kinderfaculteit, activities that are typically challenging for children in Pendrecht to access, are made available to children at the Kinderfaculteit (personal communication, June 18, 2022).

When Vitaal Pendrecht found that extra effort was needed for the children from the deprived area in 2013, the organization planned a meeting with the residents of Pendrecht. The children of Pendrecht were the subject of most concern (Marvin Pires, personal communication, February 14, 2023). To provide better opportunities for the children and to spend their time useful outside school hours, the Kinderfaculteit was initiated. At the time, the Kinderfaculteit had three objectives: the program had to contribute to the neighbourhood, support social-emotional development and support cognitive growth. The Kinderfaculteit team discovered over time that these objectives did not align with the content of their program, so since a few years, they have begun exploring other objectives to focus on. Since 2021, the Kinderfaculteit has shifted its focus. The three core concepts were introduced, and there is a strong emphasis on a positive pedagogical approach through the educational training program called "The Four Insights," which additionally provides attention to the core concepts. Furthermore, the scope and quality of the program are monitored using Key Indicators and the quality monitoring pays special attention to the implementation of the core concepts (Verlengingsvoorstel, personal communication, June 2021).

"The Four Insights" is an existing training widely used by sports teachers (Sportplezier, 2017). The four insights are structuring, stimulating, giving individual attention, and handing over control. The plan is to supplement this training with a focus on curiosity, as it is an important aspect within the Kinderfaculteit. The training also teaches teachers to provide growth-oriented feedback, emphasizing the learning process and perseverance of children (Verlengingsvoorstel, personal communication, June 2021). An overview of these four insights can be found in Figure 9.

The Four Insights

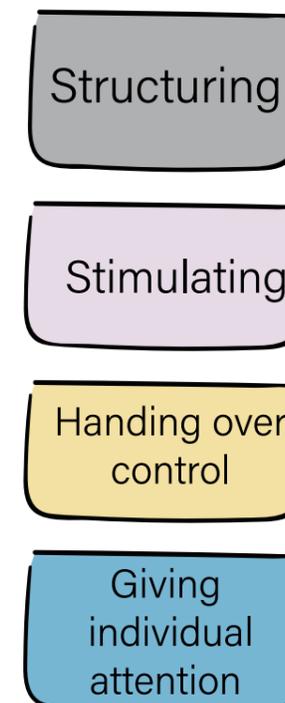


Figure 9. The Four Insights.

The Kinderfaculteit has a small vast team with project managers, project employees and a coordinator. Around 50 teachers are giving lessons at the Kinderfaculteit. Most of them are freelancers or hired from external organizations, such as SKVR. According to Luca Suijker, program developer at SDVB who has been involved with the Kinderfaculteit, next to the vast team of the Kinderfaculteit and the teachers, the Kinderfaculteit often hires interns and working students to work on the projects that are not part of the operational tasks of the Kinderfaculteit (personal communication, May 24, 2023; Over Ons - Kinderfaculteit Pendrecht, n.d.).

3.2.2. The Teachers

The Kinderfaculteit includes a variety of teachers. There are teachers for the cultural lessons, the educational lessons and the sports lessons. The project managers of the Kinderfaculteit give a training each year, that now focuses on the four insights. All teachers are invited to join the training voluntarily. One of the project managers (personal communication, December 13, 2022) mentioned that the training is created in a way that it becomes valuable also outside of the Kinderfaculteit. This way, the training is more inviting for the teachers to join.

The Kinderfaculteit project managers explained that the Kinderfaculteit executes observations during the lesson series based on an observation form that includes the four insights (personal communication, December 8, 2022). In this way, the Kinderfaculteit can see how well the lessons are being taught. The teachers are also advised based on the observations on how they can develop their skills in teaching at the Kinderfaculteit. These observations are, amongst others, conducted by external Kinderfaculteit coordinators. These are people who work at the primary schools in Pendrecht and take care of promotion and connection between the Kinderfaculteit and the primary schools in Pendrecht (Kinderfaculteit project manager, personal communication, December 8, 2022). The core concepts are planned to be integrated into the observation forms as well (Kwartaalrapportage, personal communication, February 23, 2023).

3.2.3. The Children

Children in groups 3 to 8 have the opportunity to attend after-school lessons at the Kinderfaculteit. Additionally, during regular school hours, the Kinderfaculteit arranges classes for children in groups 1 and 2. This graduation project focuses on the Kinderfaculteit program for groups 3 to 8. In the academic year 2021/2022, a total of 533 children participated in the Kinderfaculteit group 3 to 8 lessons series, which accounts for 62% of all primary school children in Pendrecht.

The decision of which lesson a child participates in depends on various factors. To begin with, children receive a folder with all available lesson series from which they can choose. They also receive advice from their school teacher in consultation with their parents. Additionally, in combination with an open house, children also participate in workshops so that they get a feeling of what a Kinderfaculteit lesson looks like (Kinderfaculteit project manager, personal communication, December 8, 2022).

According to an associate from SDVB who is closely involved with the Kinderfaculteit (personal communication, January 19, 2023), the children mostly go to the Kinderfaculteit directly from school, or they go home for a little while if there is some time between the end of a school day and the beginning of the Kinderfaculteit lessons. Older children usually travel to the Kinderfaculteit independently, while younger children are accompanied by parents or older siblings, or walk in groups with other children.

At the end of every lesson series, the Kinderfaculteit asks the participating children to fill in a questionnaire about the Kinderfaculteit and the specific course that they joined in order to improve the quality of the Kinderfaculteit.



3.3. UNDERSTANDING THE PEOPLE

To get an in-depth understanding of the Kinderfaculteit, the insights gathered from the interviews and observations are described in this paragraph.

Kinderfaculteit mostly focuses on the lessons

While talking to the project manager and teachers of the Kinderfaculteit about implementing curiosity and perseverance within the Kinderfaculteit, the lessons were the most discussed topic. The ideas that the project manager already has mostly revolved around the lessons of the Kinderfaculteit.

Involved and enthusiastic teachers

To begin with, all teachers shared positive experiences when talking about their work at the Kinderfaculteit. They mentioned that they experience good collaboration with the project management, they are positive about the trainings and appreciate the feedback based on the observations that are done by the Kinderfaculteit.

Valuable trainings

The teachers shared that they perceive the trainings that they can follow as valuable and it is useful for them that the trainings are designed in a way that the content is applicable to their lessons at other locations as well. Examples of what they shared are: "In other schools, you can use this as well, this way of working" and "I think it's nice that this training also gives you the feeling that you belong to the Kinderfaculteit."

Preparing lessons can be complicated

The teachers create their own lesson series or in collaboration with the project managers of the Kinderfaculteit. Most teachers that were interviewed shared that they take time to prepare their lessons. At the same time, the teachers experienced that their lessons often turn out differently than how it is prepared. Sometimes prepared plans did not work, but one teacher mentioned that this insight can be used to iterate on it for the next lesson. She also mentioned

that it can be especially difficult to include soft skills in the preparation of a lesson; it can be difficult to define this in a lesson brief.

A similar structure of the lessons

The overall set-up of the lessons seems similar. All teachers described the start of their lessons as an interactive, flexible start; for example with a game, letting the children tell stories they want to share, etc. Often, the teachers take time to evaluate the end of their lessons with an evaluation together with the children.

The variety of teachers, lessons and children can be a challenge

The Kinderfaculteit project manager shared that the fact that there is a variety of teachers and lessons, it can be difficult to implement something that works for all of the teachers and lessons. Similar insights surfaced throughout the teacher interviews. They experienced that the variety of ages, levels and school backgrounds of the children can make it difficult to organize a "one-size-fits-all" lesson.

Trying out new things with enthusiastic teachers

The project manager mentioned an example that she discussed and evaluated with the teachers when there was a new implementation that the project managers wanted to introduce to the Kinderfaculteit. Also, it is important to her to have a small permanent group of enthusiastic teachers in order to try out new ideas to make changes within the Kinderfaculteit. This is why the Kinderfaculteit is working on having a permanent team of teachers. According to Luca Suijker, the teachers are not often in contact with each other, possibly because of their freelance function (personal communication, May 24, 2023).

The core concepts are not well-known by the teachers yet

During the interviews, it became clear that most teachers did not know about the fact that the vision of the Kinderfaculteit is to stimulate curiosity and perseverance. None of them was consciously applying it in their lessons, but they did mention their ways of teaching that they thought might stimulate curiosity or perseverance. For curiosity, examples were including variety within the lessons to keep the lesson exciting for the children, bringing children to places outside of the Kinderfaculteit where they can experience instead of only hearing about topics and giving the children the opportunity to explore alternatives within a given task. Examples that the teachers assumed to stimulate perseverance were using "growth language," which is already part of the four insights, and having something to look forward to within the lesson series (e.g. a tournament).

Even though most teachers did not know about the core concepts, they did show interest in applying them to their lessons. One teacher mentioned "I think it's a strong vision, and I believe it will provide guidance for the teachers and the project team as well," and another teacher "It is valuable to be aware of what is important and what is considered important by the Kinderfaculteit. These are aspects that, in my opinion, every teacher should regard as important."

The stimulation of curiosity and perseverance might already happen subtly

Based on the lesson observations that I did, I did recognize techniques to stimulate curiosity and perseverance from the literature (these techniques are explained in Chapter 4). The Kinderfaculteit project manager shared the same observation that a lot is probably already happening in the lessons when it comes to stimulating curiosity and perseverance, but that awareness is necessary.

Teachers want to learn the children more than only the subject of the lesson

Next to learning the children about the subject of the lesson, most teachers also shared other values that they implement in their lessons. It became clear that most teachers also have other goals like giving a lesson in which children have a good time, teaching the children soft skills or letting the children feel seen by the teacher. Another example is that during one of the lessons that I observed, the teacher did exercises to teach the children about setting boundaries.

Even though the Kinderfaculteit project manager already had some ideas for stimulating curiosity and perseverance within the Kinderfaculteit, she shared that she is still very open to new ideas.

Teachers' definitions of curiosity and perseverance

The teachers were also asked how they would define curiosity and perseverance and how they recognize curious and perseverant children in their lessons. One teacher explained curiosity as "seeing that something does something and you don't know why which makes you want to actually continue working from there." Another teacher explained curiosity as "when you want to know exactly what something means." When I asked them about their definitions of perseverance, all teachers' answers were about pursuing something even though it is difficult to do.

According to the teachers, examples of how curious and perseverant children behave are asking questions about what they are going to do in the lesson, when they ask themselves questions about a certain topic, or when they try to silence the other children. When it comes to perseverance, several examples followed. One teacher mentioned that when a child listens well, asks for feedback and asks questions to reach their goals, they show perseverant behaviour. Other examples were when a child gets absorbed in their work, and when they try to solve something on their own first.



3.4. KEY INSIGHTS

These insights serve as answers to the research questions which can be found at the beginning of this chapter.

1. The Kinderfaculteit was initiated to provide better opportunities for the children and to spend their time useful outside school hours. As a positive pedagogical approach, they use the educational training "The Four Insights". These four insights are planned to be combined with the core concepts of curiosity and perseverance;

2. The Kinderfaculteit executes observations during the lesson series, on which the teachers receive feedback. The core concepts are planned to be integrated into their observation forms;

3. With the numerous locations and activities that the Kinderfaculteit provides and organizes, apart from the lessons curiosity and perseverance can be stimulated on various other fronts as well. Examples are the building, the way from home or school to the Kinderfaculteit and the open house;

4. The Kinderfaculteit teachers often also teach at other schools or organizations. Therefore, it is important that the tools and trainings the Kinderfaculteit offers are valuable to apply at other locations as well;

5. There are often interns and working students who are doing projects at the Kinderfaculteit. Next to that, the Kinderfaculteit is working on forming a permanent group of teachers who will be responsible for other tasks next to teaching. These teachers, interns and working students can help with the process to help implement the vision of the Kinderfaculteit;

6. The teachers are enthusiastic about the Kinderfaculteit and participate in the trainings organized by the project managers;

7. The teachers shared that preparing their lessons can be a difficult task since the outcome is often very different from what they had planned initially;

8. While the structure of the Kinderfaculteit lessons is similar, there is a large variety of teachers, lessons and children which can be a challenge for both the project managers and teachers when it comes to organizing the lesson series;

9. Since the teachers are working on a freelance basis, they are not often in contact with each other;

10. Although many teachers may not be fully aware of the Kinderfaculteit's vision to foster curiosity and perseverance, it seems like the teachers are already using some techniques subconsciously;

11. Based on the interviews, it became clear that teachers have the ambition to learn the children more than only the subject of the lesson.

Chapter 4

DISCOVERING WAYS TO STIMULATE CURIOSITY AND PERSEVERANCE

Since the Kinderfaculteit has the aim to stimulate curiosity and perseverance, these terms are being investigated. In this chapter, the definition and ways to stimulate are presented for both concepts.

The chapter is structured as follows:

- 4.1. Research Approach
- 4.2. Curiosity
 - 4.2.1. Definition of Curiosity
 - 4.2.2. Ways to Stimulate Curiosity
- 4.3. Perseverance
 - 4.3.1. Definition of Perseverance
 - 4.3.2. Ways to Stimulate Perseverance
- 4.4. Key Insights

4.1. RESEARCH APPROACH

To be able to gather useful insights about curiosity and perseverance, the following research questions were answered:

RQ7 Which definition of curiosity and perseverance fits this graduation project?

RQ8 Which techniques stimulate curiosity and perseverance?

The following research methods were used to obtain insights:



A literature review initiated by SDVB was conducted to find techniques to stimulate curiosity and perseverance within classrooms. The review consisted of different phases: formulating research question(s) (1), selecting relevant publications based on inclusion criteria (2), describing the characteristics of the found studies (3), assessing the quality and relevance of publications (4) and evidence synthesis (5). SDVB used the Kinderfaculteit's definition of curiosity⁵ and perseverance⁶, which are broader than the definitions that I have chosen for this project (discussed in the following paragraphs). During the literature review, I helped with the first stage of the selection of relevant publications. The rest of the phases were executed by the research team of SDVB. The research questions and inclusion criteria can be found in Appendix E.



I conducted a literature review to find definitions for curiosity and perseverance in the existing literature.



The interviews with the four teachers of the Kinderfaculteit also contributed to the insights presented in this chapter. They were asked what their definition of curiosity and perseverance was and how they try to stimulate curiosity and perseverance. This way, I could find an operational definition of curiosity and perseverance aligned with the perspectives of the Kinderfaculteit's teachers. The interview guide and analysis of the interviews can be found in Appendix C and D.



A combination of two focus groups and two co-creations sessions were conducted together with the SDVB. One session was conducted with the project managers of the Kinderfaculteit and one with the teachers of the Kinderfaculteit. The focus groups were conducted to triangulate the educational techniques to stimulate curiosity and perseverance found in literature since the quality of the techniques was disappointing in terms of the used definitions and measures. During this session I made notes and the SDVB prepared and executed the focus group and analysis. After SDVB transcribed and coded the recordings of the focus group, we themed the techniques together. We concluded that many techniques could be categorized as a sub-technique. The results can be found in the next paragraphs. The co-creation session was prepared, executed and analyzed by me. The approach and results of the co-creation sessions are discussed in Chapter 6.

4.2. CURIOSITY

This section delves into the core concept of curiosity. Its importance is discussed in various research findings; it has the potential to enhance growth-oriented behaviours (Schutte & Malouff, 2022; Kashdan & Steger, 2007). Studies have indicated that curiosity is associated with asking questions (Peters, 1978, as cited in Grossnickle, 2014) and improved memory for both related and unrelated information (Gruber et al., 2014). The following subsections delve into the diverse definitions of curiosity found in literature and techniques to stimulate curiosity.

4.2.1. Definition of Curiosity

The literature describes a wide range of theoretical and operational definitions of curiosity. Despite being a crucial component of education, there is no agreed definition of a child's curiosity. Definitions are often about the will to resolve the uncertain and understand the unknown (Grossnickle, 2014). Jirout et al. (2012) point out that even though many of the definitions are ambiguous or lack important details, Loewenstein (1994) does present his own theory of curiosity, the information gap theory, which incorporates elements from all the theories he reviews. According to the theory, curiosity develops when there is a lack of information. A person is motivated to look for more information because of the feeling of deprivation this gap creates. The "ideal" information gap varies, however, per person; if it is too tiny or too big, someone will not be motivated to seek information. In this graduation project, I use the information gap theory to describe curiosity, because it resonates with the definitions given by teachers⁷ in the interviews conducted next to the fact that it is also a term often used in the literature.

Furthermore, different types of curiosity are theorized within the literature. Grossnickle (2014) explains that one of the ways types of curiosity have been distinguished is by state curiosity and trait curiosity. State curiosity involves a temporary state of mind, while trait curiosity involves a more permanent character trait. For this project, I am mainly interested in state curiosity because the Kinderfaculteit aims to

stimulate children's curiosity in lessons. However, state and trait curiosity have been found to be significantly correlated (Grossnickle, 2014), so state curiosity may influence the trait curiosity of a child. Curiosity in educational contexts is often described as epistemic curiosity, "the desire for knowledge that motivates individuals to learn new ideas, eliminate information gaps, and solve intellectual problems" (Litman, 2008). Interest-type (i-type) and deprivation-type (d-type) are also two different types of curiosity. Litman (2008) explains that while d-type curiosity is focused on "removing uncertainty and unfavourable states of unknowing", i-type curiosity entails "the anticipated pleasure of new discoveries" (p. 1568).

Some researchers use the different types that exist within the literature, but often, researchers measure certain behaviour and label it as curiosity without clearly defining what they mean by curiosity. As discussed by Jirout et al. (2012), measures themselves vary as well. Curiosity has been measured with for example surveys of openness to experience, intellectual engagement, need for cognition, intrinsic motivation and the drive to experience and feel. Importantly, Jirout et al. (2012) argue that using observable behaviours as indicators of curiosity seems more valid to measure children's curiosity than using surveys to measure curiosity. This is not only because the reading skills of children differ per age group, children are also easily distracted and tired and a survey is not typically entertaining. Additionally, behavioural measures of curiosity do not call for the same levels of comprehension skills and they measure real exploration and knowledge seeking, which is a crucial manifestation of curiosity.

Because the way of defining and measuring is so different amongst the researchers, it is difficult to compare the different ways to stimulate curiosity. This is one of the reasons why the techniques that were found in the literature review were triangulated by doing focus groups.

36 ⁵The Kinderfaculteit's definition of curiosity is the positive need for children to constantly learn new things about themselves and the world around them.
⁶ The Kinderfaculteit's definition of perseverance is the children's ability to finish what they have started and not to drop out (prematurely) if it seems too difficult or does not stimulate immediate motivation.

⁷ "Seeing that something does something and you don't know why which makes you want to actually continue working from there" is an example of the answers of the teachers during the interview.

4.2.2. Ways to Stimulate Curiosity

Based on the literature review done with SDVB and the focus group with the project managers and teachers, several educational techniques were found in the literature and focus group that stimulates curiosity. An overview of the distilled techniques can be found in Figure 10. These techniques are translated from the Dutch formulation of techniques, since the Kinderfaculteit is a Dutch organization. In Appendix E, the techniques formulated in Dutch can be found.

Alaimi et al. (2020) argue that “the repeated practice of asking questions led children to be more comfortable with generating questions, as well as questions that require curiosity and a greater amount of information seeking.” The teachers mentioned this same technique during the conducted focus group. As a sub-technique, they shared that when teachers show their own unknowing and curiosity, children feel that there is space to ask questions and in that way stimulates curiosity.

Encouraging student discussion was another technique found in the literature. Lowry (1981) argues that controversy leads to more epistemic curiosity. A study by Sinha et al. (2017) also indicates that discussion amongst children maximizes curiosity. Debating and discussing were also mentioned by the project managers and teachers to stimulate the students’ curiosity.

- **Stimulate children to ask questions;**
 - Show your own unknowing and curiosity as a teacher;
- **Encourage student discussion;**
- **Give autonomy to students;**
- **Simulate and surprise the children;**
 - Ask challenging questions;
 - Create excitement;
 - Use multimedia resources;
 - Create variation;
- **Create recognition;**
 - Connect to the childrens’ world of experience;
 - Make subjects tangible or visible.

Two other studies suggested that allowing teachers to partially give up control over the lesson material in order to let students’ questions and comments influence the class’s content can stimulate children’s curiosity (Capraro et al., 2010; Guthrie et al., 2000). This technique was also mentioned by both the project managers and the teachers during the focus groups. Examples to give students autonomy are giving freedom of choice in activities, or by transferring control to the learner by responding to questions he or she asks.

Stimulating and surprising the children was a technique that emerged from the focus group with the teachers. This method is particularly effective at evoking initial (or “i-type”) curiosity, but it may be a challenge to keep the childrens’ curiosity alive. Sub-techniques that resulted from the the focus groups are asking challenging questions and creating excitement and variation. An example of creating excitement that one of the teachers mentioned is for example starting to tell a story and not telling the end of it. Creating variation in a lesson can be done by doing different activities in one lesson, which was mentioned by one of the teachers during the interviews that I conducted in this project. As a final sub-technique of stimulating and surprising the children, multimedia resources can also help in fostering a child’s curiosity about a subject (Barak & Dori, 2011; Ciampa, 2016).

Creating recognition was another technique suggested by the teachers. A sub-techniques that was mentioned was connecting to the childrens’ world of experience, for example by using TikTok during the lesson or discussing actualities with the children. Another sub-technique is making subjects tangible or visible, for example by illustrating a concept like gravity through cars that you slide down a car track.

4.3. PERSEVERANCE

While curiosity for students has a positive association with academic persistence⁸ (Smalls et al., 2006, as cited in Grossnickle, 2014), the two terms are not the same. Duckworth et al. (2007) mention that “perseverance in difficult or impossible tasks has served as the dependent variable in studies of optimistic attribution style, self-efficacy, goal orientation, and depletion of self-control resources”. The definition of perseverance and ways to stimulate this core concept can be found in the next paragraphs.

4.3.1. Definition of Perseverance

Just as for the definition of curiosity, a report from SRI International (2018) describes that many papers use different definitions of perseverance. In this graduation project, I use the operational definition “voluntary continuation of a goal-directed action in spite of obstacles, difficulties, or discouragement” (Peterson & Seligman, 2004, p. 229-230, as cited in SRI International, 2018). I choose this definition because, during the interviews, teachers similarly defined perseverance. Examples of definitions mentioned by the teachers were “perseverance is when you keep trying even though it gets a bit difficult” and “perseverance is about not giving up, even though it does not workout”. Perseverance is in this case not just sticking to a task, but experiencing an obstacle, difficulty or discouragement that may arise and then still voluntarily engaging in the action (DiNapoli, 2023). Additionally, perseverance involves a goal-direction action, which means that the learner decides to change the plan in order to continue working toward the goal rather than carrying on in the same way that they had been (Middleton et al., 2015).

Just as with curiosity, perseverance has trait and state aspects (Merriman, 2017). In this project, I look at the state aspects of perseverance, with the understanding that long-term pursuits can evolve from a persistent tendency to persevere through time (DiNapoli, 2023).

Since the Kinderfaculteit uses the Kinderfaculteit’s definitions for curiosity and perseverance, SDVB has included distilled articles that measure grit and task persistence. However, the articles often use a definition for grit or task persistence that is similar to the definition of perseverance. For example, in the paper of Alan et al. (2016), grit is defined as perseverance in a productive task. In the paper of Hamilton and Gordon (1978), task persistence is defined as the time spent trying to solve a difficult problem.

Measuring perseverance can be done in various ways. Many of the included articles used the behavioural observation method of tracking the time children were willing to spend on a task with difficulties. In some of the studies, surveys were used, such as the Behavioural Strategy Rating Scale, which assesses various aspects of task-avoidant vs. task-oriented achievement strategies such as persistence (Kikas, E. & Magi, K., 2017; Kikas, E. & Tang, X., 2018). Because the way of defining and measuring also varied amongst the researchers (which made it difficult to compare the techniques), the distilled techniques of perseverance were also triangulated.

Figure 10. The techniques to stimulate curiosity.

4.3.2. Ways to stimulate Perseverance

Based on the literature review and focus groups with the project managers and teachers, several techniques were found to stimulate perseverance. An overview can be found in Figure 11. The techniques that are formulated in Dutch can be found in Appendix E.

One of the techniques to stimulate perseverance is making students aware that they are part of a group. A study by Master et al. (2017) indicated that preschoolers exhibited significantly greater perseverance for a task when they were part of a group than when they acted as an individual. Butler & Walton (2013) suggest that even the idea that children work on a task together with another child can make them spend more time working on the task and makes it more fun to do the task. During the focus group with the teachers, similar techniques came up. "Thinking together", "matching students to each other" and "doing things together in pairs" were examples of techniques that the teachers mentioned to stimulate perseverance.

Moreover, creating a positive social learning environment has positive effects on the perseverance of children (Dan et al., 2009). Examples include amiable tones, smiling faces, tender eyes and gentle body movements. The teachers also mentioned techniques to approach children positively such as encouraging the children and giving children a pat on the back. This led to the formulation of the technique creating a positive social learning environment with the sub-technique to use positive communication.

Another technique to stimulate perseverance is giving feedback on the process rather than giving feedback on the person (De Meester et al., 2022). This technique was also mentioned by the teachers and "growth language" – which is already implemented in the Kinderfaculteit's four insights training – is connected to this technique.

Giving autonomy to students is not only a technique to stimulate curiosity but is also a technique that is indicated to stimulate perseverance (Mabbe et al., 2018). Hence, this technique is included in the list of techniques that stimulate curiosity as well as the list of techniques that stimulate perseverance.

The technique of making the end goal achievable was based on the input from the teachers during the focus group. Sub-techniques that emerged from the focus groups are to offer clear helplines, cut up the assignment in different parts, remind the students of past success experiences and show that peers can also achieve the goal. Giving students suggestions on how to achieve a solution is another sub-technique that stimulates perseverance (Hamilton & Gordon, 1978).

If teachers want to stimulate perseverance, it may help to promote the intrinsic goal of an activity rather than the extrinsic goal, which is another technique to stimulate perseverance. For example, when a child is engaged in reading, an intrinsic goal can be to learn something from the material because they enjoy learning, while an extrinsic goal can be to receive their teacher's approval. A study by Vansteenkiste et al. (2008) indicated that extrinsic, relative to intrinsic, goal framing has negative effects on children's perseverance.

Based on the focus group, the last technique of adding an element of a game to a lesson was initiated. This can be done by, for example, including time limits or competing amongst children.

- **Make students aware that they are part of a group;**
- **Create a positive social learning environment;**
 - Use positive communication;
- **Give feedback on the process rather than giving feedback on the person;**
- **Give autonomy to students;**
- **Make the end goal achievable;**
 - Offer clear helplines;
 - Cut up the assignment in different parts;
 - Remind the students of past success experiences;
 - Show that peers can also achieve the goal;
 - Give students suggestions on how to achieve a solution;
- **Promote the intrinsic goal of an activity rather than the extrinsic goal;**
- **Add an element of a game to a lesson.**

Figure 11. The techniques to stimulate perseverance.

4.4. KEY INSIGHTS

Key insights are formulated based on the findings from this chapter. These insights serve as answers to the research questions which can be found at the beginning of this chapter.

1. The definition of curiosity that is used in this graduation project is "the desire to resolve uncertainty or fill a knowledge gap";
2. In this project, stimulating state curiosity is the objective rather than trait curiosity. The same applies to perseverance: the focus is on the state aspects of perseverance rather than the trait aspects of perseverance;
3. The definition of perseverance that is used in this graduation project is "voluntary continuation of a goal-directed action in spite of obstacles, difficulties, or discouragement";
4. Since different theoretical definitions and measures are used in the papers that are used for the literature review, the distilled techniques were triangulated by conducting a focus group with the Kinderfaculteit's project managers and the Kinderfaculteit's teachers;
5. The distilled techniques to stimulate curiosity are: stimulate children to ask questions, show your own unknowing and curiosity as a teacher, encourage student discussion, encourage the students' feeling of autonomy, stimulate and surprise the children, ask challenging questions, create excitement, use multimedia resources, create variation, create recognition, connect to the children's world of experience and make subjects tangible or visible.
6. The distilled techniques to stimulate perseverance are: give students the feeling that they are part of a group, create a positive social learning environment, use positive communication, give feedback on the process rather than giving feedback on the person, encourage the students' feeling of autonomy, make the outcome more doable, offer clear helplines, cut up the task in different phases or pieces, remind the children of past success experiences, show the children that other children are also able to reach the same goal, give the children suggestions about how to perform a task, promote the intrinsic goal of an activity rather than the extrinsic goal and add an element of the game to a lesson.

Chapter 5

DEFINING THE DESIGN BRIEF

The initial project assignment was quite broadly defined, intending to deliver a concept that would help integrate the Kinderfaculteit's core concepts into their working method. As a result, I have refined the design brief through iterations. In this chapter, I present the problem definition and design direction, which are derived from the insights gathered during the discovery phase, along with the design requirements. The design brief serves as a foundation for the subsequent design phase, providing clear direction and guidance for achieving the desired outcomes of the project.

The chapter is structured as follows:

- 5.1. Define Approach
- 5.2. Problem Definition
- 5.3. Design Direction
- 5.4. Design Criteria

5.1. DEFINE APPROACH

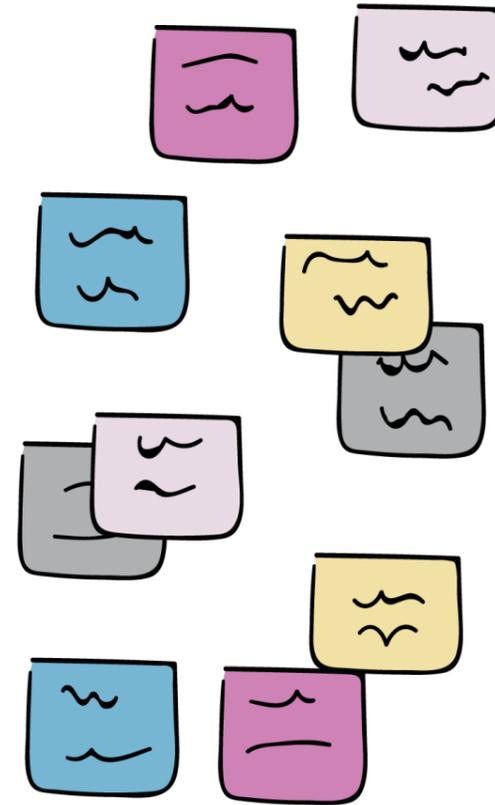
To make sure the right questions are answered in terms of defining the design brief, the following define questions were formulated:

DQ1 What is the problem definition based on the insights gathered from the discover phase?

DQ2 Which design direction fits this graduation project based on the insights gathered from the discover phase?

DQ3 Which design criteria provide valuable guidance for the final design, based on the insights gathered from the discover phase?

This was done by collecting all key insights which I translated into a problem definition, design direction and design criteria. In Appendix F are the details of this approach presented.



Key Insights



Design goal



The goal is to design a roadmap that creates structure for the project managers to integrate curiosity and perseverance holistically within the Kinderfaculteit. Alongside the roadmap, the goal is to develop a concept for each phase of the roadmap, aiming to inspire, make the roadmap more tangible and serve as potential starting points for implementation.

5.2. PROBLEM DEFINITION

The Kinderfaculteit is currently in the early stages of implementing its vision to actively nurture curiosity and perseverance. Although curiosity and perseverance are already subtly integrated into the lessons, most teachers are not yet aware of the explicit vision to stimulate these qualities. This way, it becomes challenging to consciously maximize the stimulation of curiosity and perseverance. Moreover, beyond the realm of lessons, the Kinderfaculteit offers numerous other touchpoints to foster curiosity and perseverance. The Kinderfaculteit organizes various activities that revolve around the lessons, including events like open house sessions and diploma ceremonies. In addition to the classrooms, the Kinderfaculteit provides different spaces where you can stimulate your curiosity and perseverance, such as the large hall at the location of the Kinderfaculteit, as well as places like the Arboretum or the garden of the Kinderfaculteit.

5.3. DESIGN DIRECTION

The Kinderfaculteit provides numerous locations where they operate, such as the Arboretum and their building in the centre of Pendrecht includes a large hall surrounded by several classrooms, next to a garden and kitchen. Apart from that, they organize several activities, such as open houses, diploma ceremonies and they provide healthy food for the children on Wednesdays before the lessons start. However, the Kinderfaculteit now mainly focuses on how to integrate the vision within the lessons of the Kinderfaculteit, while curiosity and perseverance can be stimulated on these various other fronts as well. Moreover, the initial project assignment was to integrate the core concepts in the Kinderfaculteit's working method, which can encompass the organization as a whole. Since most teachers are not aware of the vision yet, there are also different steps to take until curiosity and perseverance can be fully integrated into the working method. That is why I decided to take a broader perspective.

In light of the numerous touchpoints for fostering curiosity and perseverance within the Kinderfaculteit, I have decided to integrate the core concepts on an organizational level in which different touchpoints are taken into account. I have chosen to design a roadmap that outlines the phases for integrating curiosity and perseverance holistically within the Kinderfaculteit. Subsequently, I have ideated on concepts that align with each phase of the roadmap as inspiration and to make the phases more tangible and potentially serve as starting points.

5.4. DESIGN CRITERIA

As mentioned in the project approach paragraph of this chapter, I gathered all the key insights from which the problem definition, design direction, and design criteria emerged. For the design criteria, I have decided to separate the criteria for the roadmap from the criteria for the concepts. The criteria for the roadmap are based on the insights that there is limited awareness about the core concepts, that many touchpoints have the potential to stimulate curiosity and perseverance apart from the lessons and that it is, therefore, useful to focus on the organizational level rather than the level of one individual.

Since the concepts were designed based on the outcome of the roadmap, the criteria for the roadmap are mostly formulated as wishes ("It is valuable when ...") in order to allow for enough room for exploration in the ideation process. Several insights influenced these criteria. For example, the insight that most teachers are freelancers makes it difficult for teachers to inspire each other and it is also a challenge to design something that the teachers are going to use when they work at various other locations as well. After all, the teachers that were interviewed expressed enthusiasm for the trainings given by the Kinderfaculteit project managers, partly due to the fact that it can be applied to the other locations where they teach.

Furthermore, the fact that teachers encounter challenges during the preparation of the lessons is reflected in the concept criteria, as it is crucial to prepare before the start of a lesson when curiosity and perseverance should be actively integrated within them. The insight that Kinderfaculteit teachers have the ambition to teach children more than just the subject matter and that they already include certain techniques in their lessons subconsciously is also reflected in the concept criteria. These insights were important to strive for lessons at the Kinderfaculteit that align with the current way of teaching, while actively stimulating curiosity and perseverance at the same time.

Another important insight incorporated into the concept criteria is the challenge of having a diverse range of teachers, lessons, and children within the Kinderfaculteit. The insight that the Kinderfaculteit assigns tasks outside of teaching to teachers, interns, and working students was also valuable for enhancing the feasibility of the final design for this graduation project.

An overview of the collection of key insights with the problem statement, design direction and design criteria that emerged can be found in Appendix F.

Roadmap criteria

- 1 Creating awareness about the vision of the Kinderfaculteit among teachers should be integrated into the roadmap;
- 2 The roadmap should consist of distinct phases that lead to the integration of curiosity and perseverance within the practices of the Kinderfaculteit;
- 3 The various touchpoints where curiosity and perseverance can be stimulated should be integrated into the roadmap;
- 4 The roadmap should be designed for the project managers of the Kinderfaculteit.

Concept criteria

- 1 Each concept should fit one of the phases of the roadmap;
- 2 The design should be feasible to use or execute by a teacher, intern or working student;
- 3 It is valuable when the design offers support for the teachers to prepare their lessons;
 - a It is valuable when the design takes into account that the teachers also work at locations outside of the Kinderfaculteit;
 - b It is valuable when the design makes space to let the teachers use their own creativity to implement the techniques within their lessons;
 - c It is valuable when the design builds on what the teachers already do within their lessons when it comes to stimulating curiosity and perseverance;
- 4 It is valuable when the design takes into account the variety of teachers, lessons and children;
- 5 It is valuable when the teachers are actively engaged in the implementation of the core concepts. This approach aims to acknowledge and recognize the existing practices while harnessing the expertise of teachers, thereby fostering a collaborative environment conducive to the effective integration of the core concepts;
- 6 It is valuable when the design makes teachers interact more with each other.

Chapter 6

CO-CREATING

Through the input from the project managers and teachers, co-creation sessions helped to identify key touchpoints⁹ important for project managers and impactful according to the teachers. The sessions also inspired me for the ideation phase. Additionally, involving these stakeholders was crucial since they are at the core of the Kinderfaculteit. Because their goal is to stimulate children to be curious and perseverant, the sessions helped them to get inspired and to discover the numerous moments, places and ways how to stimulate curiosity and perseverance within the Kinderfaculteit (Kinderfaculteit teacher, personal communication, April 21, 2023; Kinderfaculteit project manager, personal communication, April 6, 2023).

Because the co-creation session was a crucial aspect of my graduation project, given my personal goal to organize such a session, I used a more detailed exploration of the approach and analysis of the sessions. The chapter is structured as follows:

6.1 Co-creating with the Project Managers

6.1.1. Approach of the Session

6.1.2. Results and Analysis of the Session

6.2 Co-creating with the Teachers

6.2.1. Approach of the Session

6.2.2. Results and Analysis of the Session

6.3. Key Insights

6.1. CO-CREATING WITH THE PROJECT MANAGERS

The goal of the first co-creation session was to formulate the touchpoints defining where and when curiosity and perseverance can be stimulated within the Kinderfaculteit. This co-creation session was done with the two project managers of the Kinderfaculteit. The outcome of this session was an overview of the potential touchpoints, which I used as a starting point for the follow-up co-creation session with the teachers.

6.1.1. Approach of the Session

Introduction of the setup of the session

The co-creation session was set up in a way that they would follow a full “design diamond” process. The set-up of the session can be found in Figure 12. The following design questions were formulated for this co-creation session:

DQ4 At which moments and locations within the Kinderfaculteit can curiosity and perseverance be stimulated?

DQ5 Which moments and locations within the Kinderfaculteit do the project managers consider most important to focus on when it comes to stimulating curiosity and perseverance?

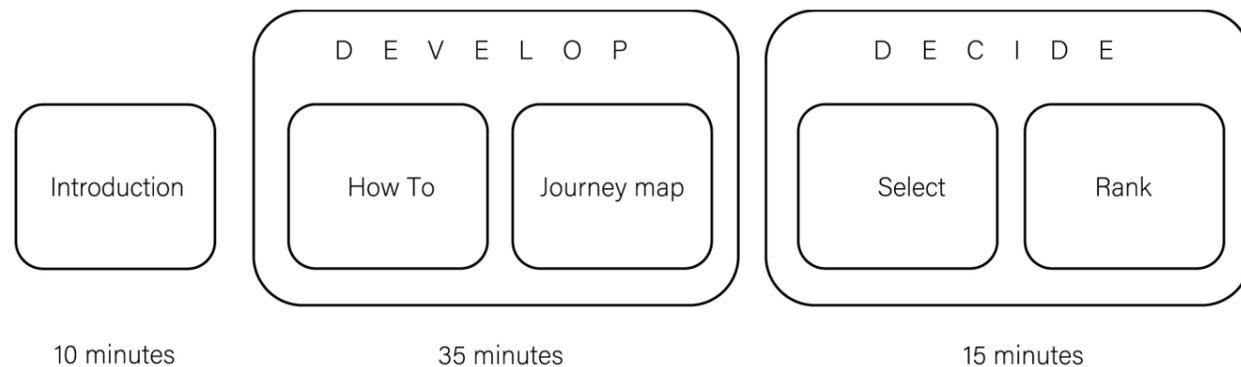


Figure 12. The set-up of the co-creation session.

Details of the co-creation session

Prior to the start of the focus group and co-creation session, the project managers were provided with informed consent forms to read and fill in. The co-creation session with the project managers began with an introductory phase aimed at sharing the session’s goal, agenda, and the design principles that would govern the session. Additionally, I presented the specific definitions of curiosity and perseverance that were selected for this graduation project. The design principles were communicated to encourage the project managers’ creativity throughout the session. The two communicated design principles were: (1) the belief that everyone possesses creativity, and (2) the belief that there are no false answers. These principles were inspired by the book “Convivial Toolbox” by Sanders & Stappers (2013). I shared the chosen definitions of curiosity and perseverance with the project managers in order to prompt and inspire them to consider and incorporate these definitions throughout the rest of the co-creation session. Prior to sharing my chosen definitions, I initiated a short interactive ice-breaker activity, asking the project managers to briefly reflect on their own interpretations of curiosity and perseverance.

After the introduction, I started with the “How To” method¹⁰ (Van Boeijen et al., 2020). This method allowed the project managers to generate a wide range of ideas regarding the moments and places where curiosity and perseverance could be stimulated. I intentionally did not specify the context of the Kinderfaculteit in these questions. Instead, I aimed to encourage the project managers to explore as many ideas as possible beyond the boundaries of the Kinderfaculteit. This approach was intended to foster a divergent mindset. The answers to these questions would also serve as input for the subsequent step in the co-creation session: creating a journey map for a child participating in the Kinderfaculteit.

Figure 13 depicts the template of the journey map that I shared with the project managers. I asked the project managers to start filling in all activities that a child of the Kinderfaculteit goes through from the moment they start orientating to join a lesson series to the last moment of interaction with the Kinderfaculteit. The timeline was structured in three phases: before the lesson series, during the lesson series and after the lesson. The intention behind this structure was to encourage the project managers to consider moments and locations beyond the scope of the Kinderfaculteit lessons alone. Subsequently, the project managers were asked to identify the potential locations visited by a child during each phase. Unfortunately, I had to decide to skip the final step of evaluating the level of stimulation since one of the project managers had to leave earlier than planned.

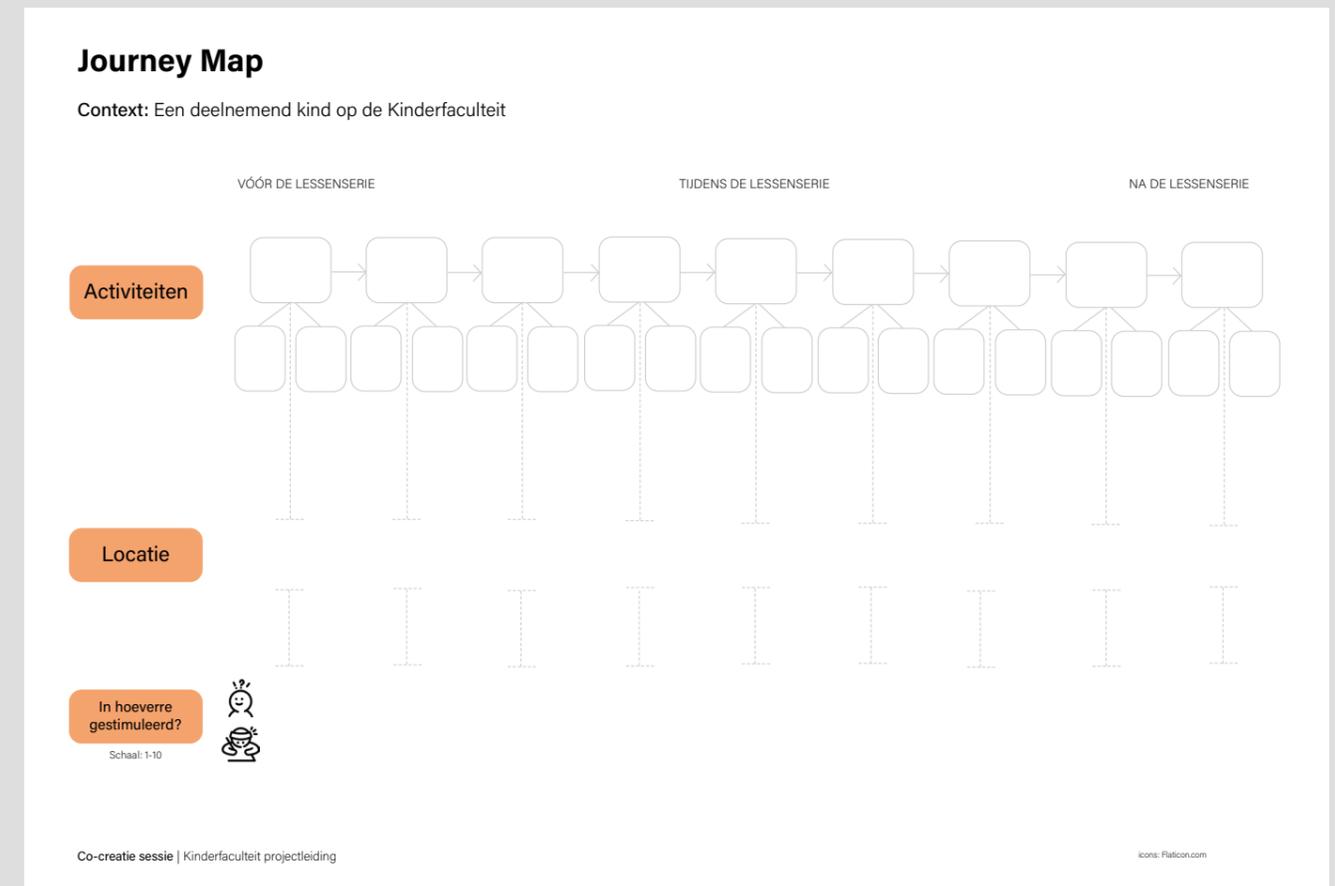


Figure 13. The template of the journey map.

After completing the activities and locations on the journey map, we transitioned into the converging phase of the session. During this step, I asked the project manager who was still present to select and rank the touchpoints that she considered important for the Kinderfaculteit to stimulate curiosity and perseverance.

Throughout the session, the project managers engaged in the design activities using printed A2 and A3 templates. To ensure flexibility during the co-creation session, I introduced additional materials. These included extra slides, such as a filled-in example of the journey map to assist the project managers who might have had difficulty understanding how to complete it, and a slide featuring the SCAMPER method to encourage creativity in case the project managers would get stuck. However, these slides were ultimately unnecessary as the session progressed smoothly. In addition, I prepared an A4 sheet containing stimulating questions and backup ideas that I could refer to if needed. I also had an A4 sheet with the session's agenda and a list of stimulation materials. The slides and documents used during the session can be found in Appendix G.

Pilot session

Before conducting the co-creation session with the project managers, I conducted a pilot session with two individuals who were unrelated to the Kinderfaculteit. Based on the feedback and insights gained from this pilot session, I made some small adjustments to the setup of the co-creation session.



For instance, I decided to leave out the comment that the answers written on the post-its during the "How To" session could be used when they would fill in the activities and locations in the journey map. During the pilot session, the participants found this comment to be somewhat confusing. Instead, I planned to use this suggestion only if the project managers encountered difficulties while filling in activities and locations on the journey map, with the intention to facilitate the connection between external locations and activities and those within the Kinderfaculteit. For example, when "dinner time" was written down as a way to stimulate curiosity during the "How To" session, they could apply that idea to the Kinderfaculteit by stimulating curiosity during the children's fruit break. In the end, during the co-creation session with the project managers, there was no need for this suggestion as they independently made connections between the post-its from the "How To" activity and the journey map activity.

Additionally, I improved the journey map template based on feedback from the pilot session. I added extra space to allow for the inclusion of more activities since the initial version did not provide sufficient room to capture all the activities a child goes through.



Figure 14. The journey map, completed by the project managers.

6.1.2. Results and Analysis of the Session

During the session, photographs were taken of the templates completed by the project managers. I subsequently digitized these pictures to analyze the results and utilize them for planning the next co-creation session with the teachers. In Figure 14, the final journey map can be found that was filled in by the project managers. As can be observed, there are numerous activities and locations that the children go through. As one of the project managers noted, "It is certainly evident that curiosity and perseverance can be consciously incorporated throughout every aspect of the journey." The co-creation session reaffirmed the insight that stimulates curiosity and perseverance within the Kinderfaculteit extends beyond the lessons alone.

When one of the project managers was asked to prioritize touchpoints for stimulating curiosity and perseverance at the Kinderfaculteit, the project manager offered a broader perspective. She emphasized the significance of incorporating curiosity and perseverance throughout the entire trajectory of the child, encompassing home, school, and the Kinderfaculteit. She specifically noted that curiosity can be effectively stimulated before and during the beginning of the lesson series, while perseverance can be mostly stimulated towards the end of the series and after the lesson series. This perspective highlighted the importance of taking into account the wider context and various stages of the Kinderfaculteit experience when introducing initiatives to stimulate curiosity and perseverance.

In Appendix G, all completed templates from the project managers can be found.

6.2. CO-CREATING WITH THE TEACHERS

During the co-creation with three Kinderfaculteit teachers, I wanted them to create design concepts within the touchpoints that are most impactful for the Kinderfaculteit according to the project managers and teachers.

6.2.1. Approach of the Session

Introduction of the setup of the session The co-creation session was set up in a way that they would follow a full “design diamond”, just like the co-creation session with the project manager. The set-up of the session can be found in Figure 15. The following design questions were formulated for this co-creation session:

DQ6 Which touchpoints do the teachers believe have the greatest impact when it comes to stimulating curiosity and perseverance within the Kinderfaculteit?

DQ7 Which ideas do the teachers have to stimulate curiosity and perseverance within the Kinderfaculteit?

Details of the co-creation session

In contrast to the co-creation session with the project managers, the focus group and co-creation session with the teachers shared more common goals and objectives. As a result, the co-creation session was designed based on the insights gained from the focus group, which included the presentation of the selected definitions of curiosity and perseverance for this graduation project.

At the beginning of the focus group, Carlijn, a junior researcher at SDVB, presented the chosen definitions of curiosity and perseverance to the teachers. During the focus group, the teachers were asked to share the techniques to stimulate curiosity and perseverance. They wrote down their responses on Post-it notes. During the break between the focus group and the co-creation session, Carlijn and I collaborated to categorize the Post-it notes from the focus group together with the techniques identified in the literature review. This overview of techniques was subsequently incorporated into one of the activities during the co-creation session.

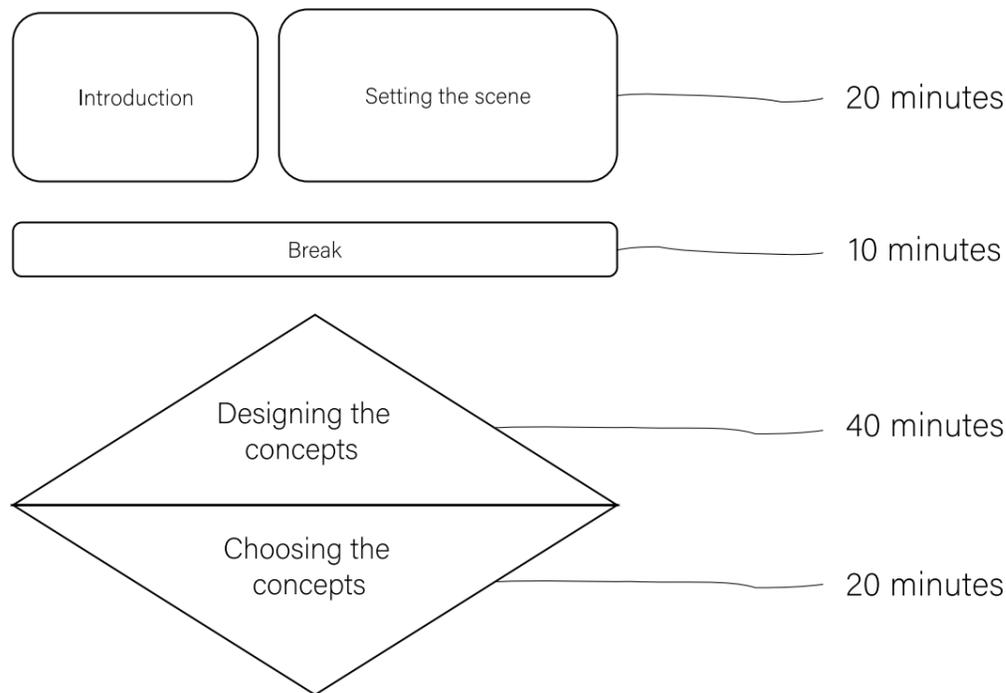


Figure 15. The set-up of the co-creation session.

The co-creation session began similarly to the session with the project managers. I shared the planning and goal of the session, the design principles and reminded them again of the definitions of curiosity and perseverance that I have chosen for this graduation project. I iterated on the design principles for this session; I added the principle of many ideas bring good ideas, based on the perspective of Osborn (1949).

Following the introduction, the session proceeded to the “setting the scene” activity. During this activity, the teachers were individually tasked with selecting two techniques (one for curiosity and one for perseverance) that they believed were most suitable for the Kinderfaculteit, based on the overview of techniques that Carlijn and I categorized. To make their selections, the teachers were given stickers to indicate their chosen techniques. Once they had individually selected two techniques, they were asked to further narrow down their choices and collaboratively choose four techniques to focus on for the rest of the session.

Subsequently, the teachers were asked to select three touchpoints that were presented to them. The presented touchpoints were based on the touchpoints formulated by the project managers. However, due to the large number of touchpoints available, not all touchpoints formulated by the project managers were included in the selection. I decided to exclude touchpoints that the Kinderfaculteit has limited impact on or touchpoints that overlapped with each other.

After the selection of techniques and touchpoints, a break was provided. During this break, I rephrased the techniques into “How To” questions. When the break ended, I asked the teachers to generate as many answers as possible to these questions, while I reminded them that there were no wrong answers in this activity.

Once they completed the activity, each teacher received a Post-it note containing one of the three touchpoints they had chosen. Their task was to develop ideas that would stimulate curiosity and perseverance, aligned with their assigned touchpoint. They were encouraged to draw inspiration from their answers formulated in the previous “How To” activity. Figure 16 depicts one of the “How To” session templates and one of the ideation templates, filled in by one of the teachers. Subsequently, the teachers were asked to present some of their ideas to the group. Originally, I had planned for them to select one idea per touchpoint that they would like to see within the Kinderfaculteit, but during the session, I decided to exclude this activity. The teachers were already engaged in discussing their ideas with one another, and I wanted to ensure that no ideas were perceived as “better” or “worse” for implementation at the Kinderfaculteit.

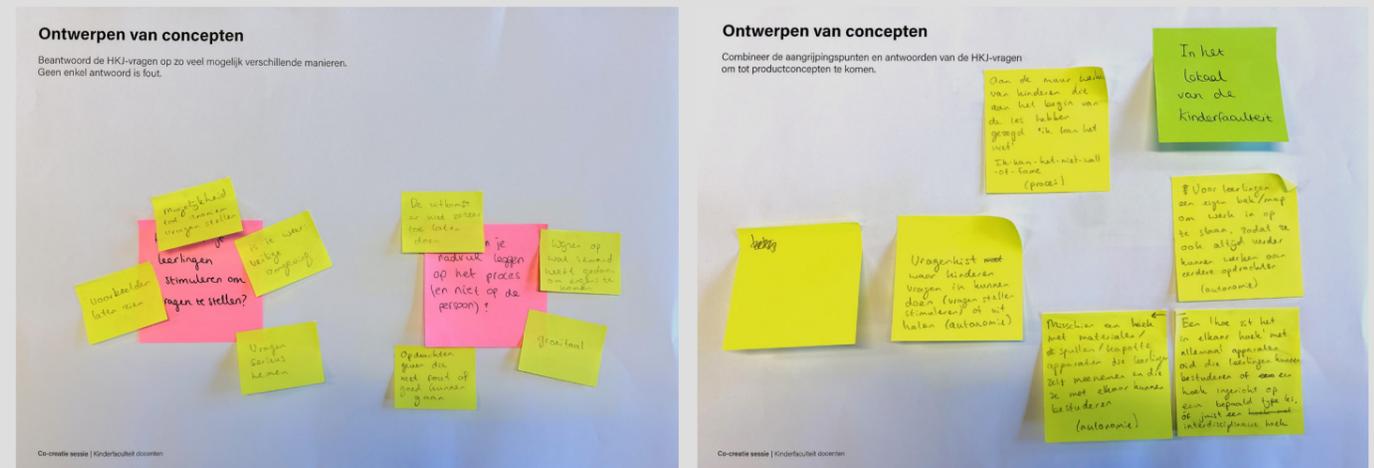


Figure 16. Templates of the “How To” session and ideation session, answered by one of the teachers.



Pilot session

Before conducting the co-creation session with the teachers, I conducted a pilot session with two individuals who were not associated with the Kinderfaculteit. Based on the feedback and insights gathered from this pilot session, I made some minor adjustments to the setup of the co-creation session.

During the pilot session, I did not differentiate between the touchpoints when presenting them to the participants. I had presented all the moments and locations together for them to choose from. After the pilot session, it became clear that it is more effective to present them separately since the participants found it chaotic to see the moments and locations mixed with each other.

Furthermore, I had initially instructed the participants to immediately engage in the "How to" session based on the touchpoint they were assigned, instead of first completing the "How to" and then connecting it to the touchpoint. This approach proved to be more conducive to generating creative ideas.

6.2.2. Results and Analysis of the Session

The teachers generated numerous innovative ideas for the Kinderfaculteit during the session. I also noticed that the teachers were inclined towards engaging in discussions about the techniques and ideas for the Kinderfaculteit. According to one of the associates from SDVB, one of the participating teachers expressed that they found the co-creation session to be a success and would like to have more sessions like this in the future (personal communication, May 10, 2023). The teachers also highlighted the effectiveness of the "How To" activity in providing valuable prompts for idea generation.

According to the teachers, several touchpoints have a significant impact on stimulating curiosity and perseverance at the Kinderfaculteit. Firstly, the entrance of the facility was highlighted as an impactful touchpoint as it serves as the initial point of contact for children. Additionally, the classrooms were identified as an impactful touchpoint due to the significant amount of time children spent in them during their participation in the Kinderfaculteit. Lastly, the application of the knowledge acquired at the Kinderfaculteit beyond participation in the program was recognized as another impactful touchpoint, where children have the opportunity to put their learning into practice in various settings such as their homes or schools.

out to me. One of them was the "I-Can't-Do-It Wall of Fame," which celebrates the works of students who initially believed they were incapable of accomplishing certain tasks. This approach emphasizes providing feedback on the process rather than focusing on the person. Another idea that caught my attention was the use of a tuk-tuk to transport students to the Kinderfaculteit, fostering students' curiosity. Other noteworthy ideas included organizing excursions outside the Kinderfaculteit, such as visits to museums or libraries, to stimulate children's curiosity and broaden a child's perspective as well. Additionally, the concept of a question box, where students can submit or retrieve their questions, promotes curiosity by using the technique to stimulate students to ask questions. Lastly, the "how things work corner," equipped with diverse devices and materials related to various Kinderfaculteit lessons, offers students an opportunity for exploration.

Throughout the session, it became apparent that the teachers at the Kinderfaculteit were able to generate various creative ideas that stimulate curiosity and perseverance. The activities incorporated in the co-creation session played a role in fostering these outcomes, enabling the teachers at the Kinderfaculteit to generate diverse and imaginative ideas, based on the techniques to stimulate curiosity and perseverance.





6.3. KEY INSIGHTS

Key insights are formulated in this chapter that serve as answers to the design questions which can be found at the beginning of this chapter.

1. During the co-creation session with the project managers, it became clear that there are numerous activities and locations that the children go through. It can be concluded that stimulating curiosity and perseverance within the Kinderfaculteit extends beyond the lessons alone;
2. One project manager highlighted the need to stimulate curiosity and perseverance throughout the child's entire journey at the Kinderfaculteit, including home, school, and the program itself. She emphasized stimulating curiosity before and at the beginning of the lesson series and stimulating perseverance towards the end and beyond. This perspective highlighted the importance of taking into account the wider context and various stages of the Kinderfaculteit experience when introducing initiatives to stimulate curiosity and perseverance;
3. The entrance of the Kinderfaculteit building, the classrooms and the application of the knowledge acquired at the Kinderfaculteit beyond participation in the program were touchpoints considered to have an important impact when it comes to stimulating curiosity and perseverance according to the teachers;
4. The co-creation session with Kinderfaculteit teachers revealed their ability to come up with creative ideas that stimulate curiosity and perseverance. The co-creation session activities facilitated the generation of diverse and actionable ideas, based on the techniques for stimulating curiosity and perseverance.
5. Examples of ideas that the teachers had for the stimulation of curiosity and perseverance at the Kinderfaculteit were the "I-Can't-Do-It Wall of Fame," the use of a tuk-tuk to transport students to the Kinderfaculteit, organizing excursions outside the Kinderfaculteit, such as visits to museums or libraries, a question box where students can submit or retrieve their questions and a "how things work corner" equipped with diverse devices and materials related to various Kinderfaculteit lessons.

Chapter 7

DEVELOPING THE ROADMAP AND CONCEPTS

This chapter presents the develop phase of the double diamond structure, where ideation was done.

The chapter is structured as follows:

- 7.1. Design Approach
- 7.2. Developing the Roadmap
- 7.3. Developing the Concepts
- 7.4. Key Insights

7.1. DESIGN APPROACH

To be able to design a roadmap with concepts that is valuable for the Kinderfaculteit project managers, the following design questions were formulated:

DQ8 Which phases should be incorporated within the roadmap?

DQ9 Which roadmap elements should be incorporated into the roadmap?

DQ10 Which concepts are valuable for the Kinderfaculteit that fit the phases of the roadmap?

To come up with a useful and valuable design, different tools were used during the phase of ideation:

 I conducted desk research into the "Design Roadmapping" book by Lianne Simonse and the AIDA model. These sources guided the design of the roadmap structure for the Kinderfaculteit;

 To explore different variations for the roadmap, sketching helped to visualize the ideas I had in mind. This process helped in selecting the most suitable structure for the roadmap;

 I sought feedback from fellow students and colleagues at SDVB to evaluate the roadmap and make informed decisions regarding its design and the concepts to be included;

 I visited Bouwkeet for inspiration and to take a break from working on my laptop;

 I conducted a "How To" session to generate innovative ideas for the concepts of the Kinderfaculteit. During this session, I utilized the "Combine" tool from the "SCAMPER" method¹¹ to stimulate creative thinking;

 The co-creation sessions discussed in the previous chapter also helped me during the ideation of the roadmap and concepts.

7.2. DEVELOPING THE ROADMAP

To structure the process of integrating curiosity and perseverance, I wanted to create a roadmap before coming up with design concepts for the Kinderfaculteit. The project managers were the target group of the roadmap since they are responsible for the integration of curiosity and perseverance within the Kinderfaculteit. This was also one of the formulated requirements for the roadmap design as described in Chapter 5.

Designing the horizontal part of the roadmap

For the horizontal aspects of the roadmap, I took inspiration from the book "Design Roadmapping" by Simonse (2018) to divide the roadmap into three distinct "horizons" (or phases). This way of designing the roadmap also takes into account the requirement to separate the roadmap into distinct phases. Given the requirement to create awareness about the Kinderfaculteit's vision, I explored the AIDA model. Although originally applied to buying processes, I adapted this model to the roadmap as both changing an organization's vision and buying behaviours involve behavioural change. As stated by Strong (1925), "If the prospect experiences attention, interest, desire, he will be more likely to act."

These insights led to the initial sketch of the roadmap, depicted in Figure 17. The first phase aimed to create awareness and generate interest and desire among the Kinderfaculteit's employees and teachers. The second phase focused on action: implementing the core concepts within the Kinderfaculteit's working method. In the third phase, I included the step of applying the acquired knowledge outside of the Kinderfaculteit, drawing from the fact that the project managers and teachers shared that applying the knowledge at home or school would be impactful to stimulate curiosity and perseverance for children at the Kinderfaculteit.

However, after discussing with Carlijn (personal communication, May 10, 2023), I realized that integrating this third step into the Kinderfaculteit would be challenging, as the organization is still in the early stages of incorporating the vision into its working method. Moreover, my project assignment is specifically focused on integrating the vision within the Kinderfaculteit, not outside of it. Given the broad nature of phase two in the initial roadmap design, it was also beneficial to divide the implementation phase into two distinct parts: one for the teachers and one for the children. This led to the third sketch of the horizontal part of the roadmap, comprising three phases: creating awareness, supporting teachers in implementing core concepts into their lessons and applying the techniques to the Kinderfaculteit for both teachers during their lessons and project managers to stimulate curiosity and perseverance throughout various stages of the Kinderfaculteit experience.

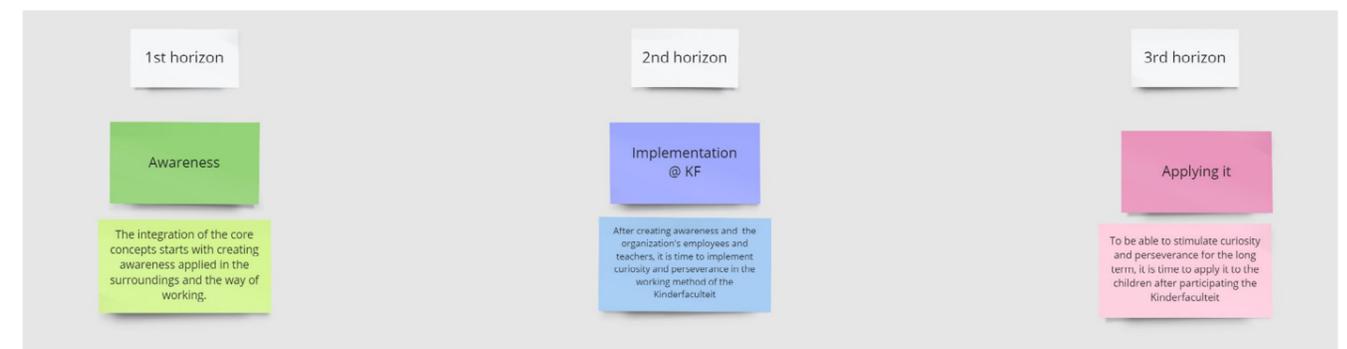


Figure 17. One of the first sketches of the roadmap.

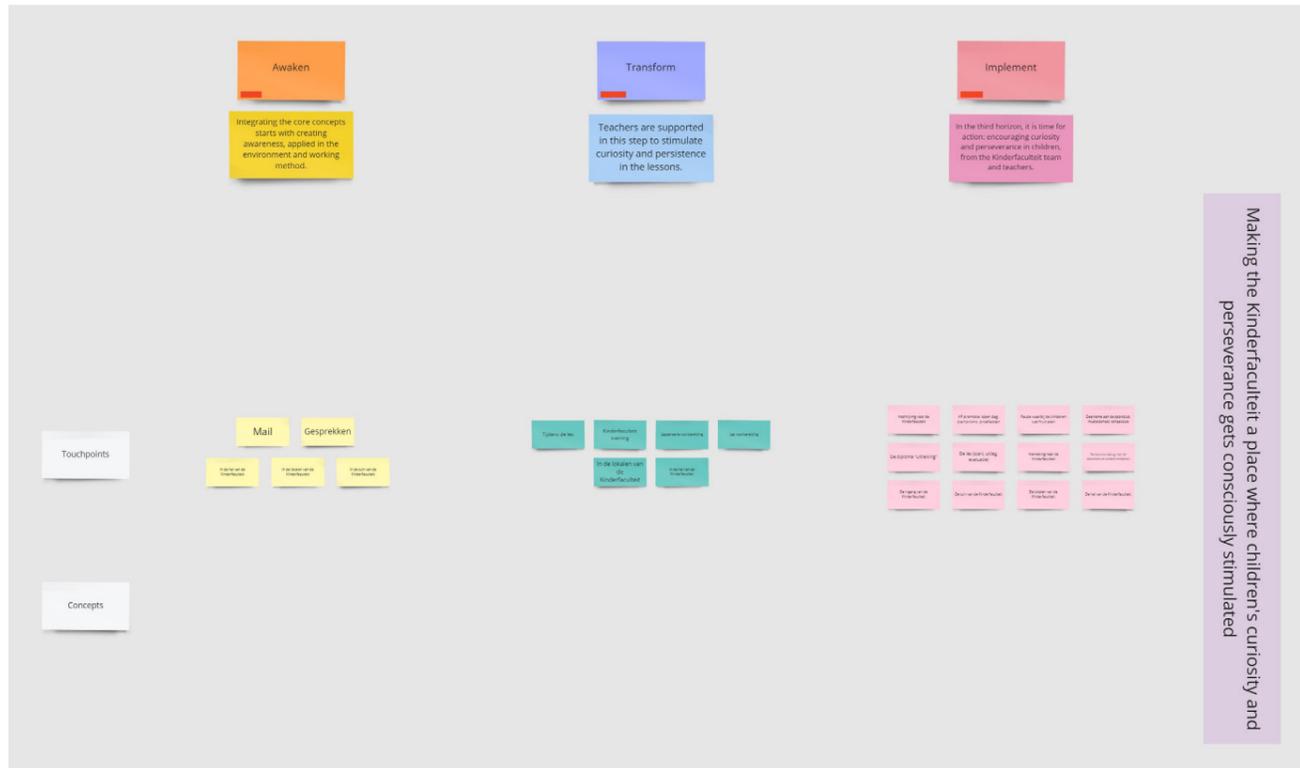


Figure 18. Structure of the roadmap.

These three phases were designed to work towards the future vision of the Kinderfaculteit, which states, "The Kinderfaculteit will be a place where curiosity and perseverance in children are consciously stimulated." The inclusion of the word "consciously" in the vision was based on the insight that while curiosity and perseverance may already occur naturally within the Kinderfaculteit's lessons, many teachers were not yet aware of the Kinderfaculteit's vision to stimulate curiosity and perseverance. Therefore, by emphasizing the need for conscious stimulation, the future vision seeks to bring greater awareness and intentionality to stimulating curiosity and perseverance in children at the Kinderfaculteit.

Designing the vertical part of the roadmap

Many design roadmaps incorporate various vertical elements, such as user values, market segmentations, products, touchpoints, and technology applications. While these elements are suitable for organizations where, for instance, technology plays a significant role, I aimed to simplify the roadmap for the Kinderfaculteit to ensure it would be quick and easy for project managers to read and understand. Each phase in the roadmap includes the following vertical elements. Firstly, a short description is provided to outline the objective of the phase. Secondly, specific touchpoints are identified to encourage the project managers to consider different moments and locations where the ideas of that phase can be implemented, which was one of the requirements for the design of the roadmap. By including touchpoints, the goal was to broaden the project managers' perspectives and stimulate them to come up with new and valuable ideas. Lastly, a designed concept for each phase is included to inspire the people involved in the Kinderfaculteit, as a potential starting point and to explain the phase by translating it into a tangible concept. The structure of the roadmap can be found in Figure 18.

7.3. DEVELOPING THE CONCEPTS

To come up with inspiring concepts as potential starting points that explain the phase by translating it into a tangible concept, various activities helped to design three concepts to accompany the roadmap.

Visiting Bouwkeet

During my graduation project, I had the opportunity to visit Bouwkeet, a similar program also initiated by SDVB, for inspiration. The design of the building caught my attention; it was renovated through collaborations with a local architect and entrepreneurs, and stakeholders from the neighbourhood (Nr. 0059 | Bouwkeet | Stichting Wijkcollectie, n.d.). Figure 19 depicts a photo of the location.

During the visit, a staff member at Bouwkeet gave me a tour and shared information about the initiative. The following insights gathered during the visit to Bouwkeet provided inspiration for my project. At the beginning of a Bouwkeet ceramics lesson series, the teacher discussed with the children their tea-drinking habits at home, as they were going to make a tea set.

This discussion about tea drinking helped broaden the children's perspectives and stimulated curiosity about different cultures, as drinking tea is a habit in various cultures. This made me realize that certain educational techniques to stimulate curiosity and perseverance could be applied across various lessons at the Kinderfaculteit, regardless of the subject matter, teacher, or student diversity.

Another Bouwkeet staff member suggested ideas for the Kinderfaculteit, such as creating an exhibition space to stimulate curiosity. She mentioned how Bouwkeet uses a digital touchscreen display for children to sign up for lesson series, which may also stimulate curiosity. Another inspiring practice at Bouwkeet is the showcasing of participants' creations through organized events like catwalk shows, parties, or competitions at the end of the lesson series. The fact that they use variety in these showcases could be interesting for the Kinderfaculteit's diploma ceremonies as well, to stimulate curiosity among the children.



Figure 19. The building of Bouwkeet.

“How To” activity

As a result of the roadmap structure, I conducted a “How to” activity. I began by formulating “How to” questions based on the phases of the roadmap, writing them on an A3 sheet for each phase. I documented all the ideas I had gathered throughout the project or that had emerged from the co-creation sessions. On the back of the A3 sheet, I wrote a shorter version of each “How to” question, making it more general. For instance, “How to create awareness about curiosity and perseverance amongst the Kinderfaculteit employees and teachers?” became “How to create awareness?” I then provided answers to the shorter versions of the questions, which served as hooks to generate more innovative ideas. By using the “Combine” tool of the “SCAMPER” method, I was able to combine the shorter answers into new ideas that addressed the larger “How to” question for each specific phase. Figure 20 depicts the set-up of the “How to” session. For the third phase, I only documented the ideas I had gathered throughout the project or that had emerged from the co-creation sessions, since many ideas already emerged from the co-creation session with the teachers that could be applied to the third phase.

To ensure that the chosen ideas align with the insights gathered in this project, I took into account the wishes of the design criteria formulated in Chapter 5. Additionally, I sought input from Luca Suijker (personal communication, May 24, 2023), the program developer at SDVB involved with the Kinderfaculteit. Luca helped select ideas that he believed would be suitable for implementation at the Kinderfaculteit. This collaborative process helped narrow down the options.

The following ideas were chosen as concepts for the roadmap phases. For the first phase, the idea of interactive boards or posters displaying questions about curiosity and perseverance was selected. For the second phase, the concept of introducing a creation toolkit that connects techniques to the teachers’ lessons was combined with regular co-creation sessions to support and assist teachers in using the toolkit. Lastly, for the final phase of the roadmap, the “I-Can’t-Do-It Wall of Fame” idea was chosen as a result of a co-creation session with the teachers. Pictures of the A3 sheets with “How to” questions and ideas can be found in Appendix 70.



Figure 20. Creative session.

7.4. KEY INSIGHTS

Key insights are formulated in this chapter that serve as answers to the design questions which can be found at the beginning of this chapter.

1. The three phases of the roadmap are creating awareness (1), supporting teachers in implementing core concepts into their lessons (2) and applying the techniques to the Kinderfaculteit for both teachers during their lessons and project managers to stimulate curiosity and perseverance throughout various stages of the Kinderfaculteit experience (3);
2. The following roadmap elements are included in the roadmap: a short description to outline the objective of the phase, specific touchpoints to encourage the project managers to consider different moments and locations where the ideas of that phase can be implemented and a designed concept for each phase to inspire the people involved in the Kinderfaculteit, as a potential starting point and to explain the phase by translating it into a tangible concept;
3. For the first phase, interactive boards or posters with questions about curiosity and perseverance were chosen as an idea. For the second phase, the idea of introducing a creation toolkit to connect the techniques to the teacher’s lessons was combined with a regular co-creation session in which the teachers are supported and assisted to use the toolkit. For the last phase of the roadmap, one of the ideas from the co-creation session with the teachers was chosen; the “I-Can’t-Do-It Wall of Fame.”

Chapter 8

DELIVERING THE ROADMAP AND CONCEPTS

This chapter addresses the outcome of this graduation project: the roadmap with the concepts.

The chapter is structured as follows:

- 8.1. Design and Research Approach
- 8.2. The Roadmap
- 8.3. The Concepts
- 8.4. Integrating the Design
- 8.5. Validation
- 8.6. Key Insights

8.1. DESIGN AND RESEARCH APPROACH

To deliver a valuable final design for the Kinderfaculteit and to make iterations, I formulated the following design and research questions:

DQ11 What will the final design of the roadmap and concepts look like?

DQ12 How to integrate the designs into the Kinderfaculteit?

DQ13 Which iterations can I apply to the designs?

RQ6 What is the project manager's opinion of the designed roadmap and concepts?

The following tools were used to get answers to these design and research questions:



I made prototypes of the design in InDesign and Illustrator;



A validation session was conducted with one of the project managers in which I presented the prototypes of the design;

8.2. THE ROADMAP

The Design

The strategy for the Kinderfaculteit has been transformed into a roadmap for the project managers of the Kinderfaculteit, outlining the steps to achieve a future vision. The roadmap was designed in Dutch since the Kinderfaculteit is a Dutch organization and both of the project managers are Dutch speakers. The future vision is "De Kinderfaculteit zal een plek zijn waar nieuwsgierigheid en doorzettingsvermogen van kinderen bewust worden gestimuleerd," which translates to "The Kinderfaculteit will be a place where curiosity and perseverance in children are consciously stimulated." The three phases to achieve the future vision are "Bewustzijn creëren" ("Creating awareness"), "Vertaling naar de lessen" ("Translation to the lessons"), and "Tijd voor actie" ("Time for action"). The roadmap is depicted in Figure 22 on the next page.

Vertically, you can see the elements "Touchpoints" and "Concepten" (which translates to "Concepts"). To provide a clearer explanation of each phase, visuals were created to illustrate them.

The Kinderfaculteit recently changed its rebranding, photos of its new website can be found in Figure 21. For the roadmap, I used colours based on the brand identity of the Kinderfaculteit. However, to achieve a calmer and more mature look for the roadmap, I adjusted the shades to softer colours and used a finer font.

Iteration

Based on the evaluation session with one of the project managers, arrows were added to the roadmap. This is because roadmaps often include specific years or months, but the project manager indicated that she can use this roadmap both in the short- and long-term. In the short-term, she plans to start integrating curiosity and perseverance within the Kinderfaculteit with a permanent group of teachers. This time frame would be one lesson series which includes 10 weeks. In the long-term, it can be applied to all employees and teachers within the Kinderfaculteit.

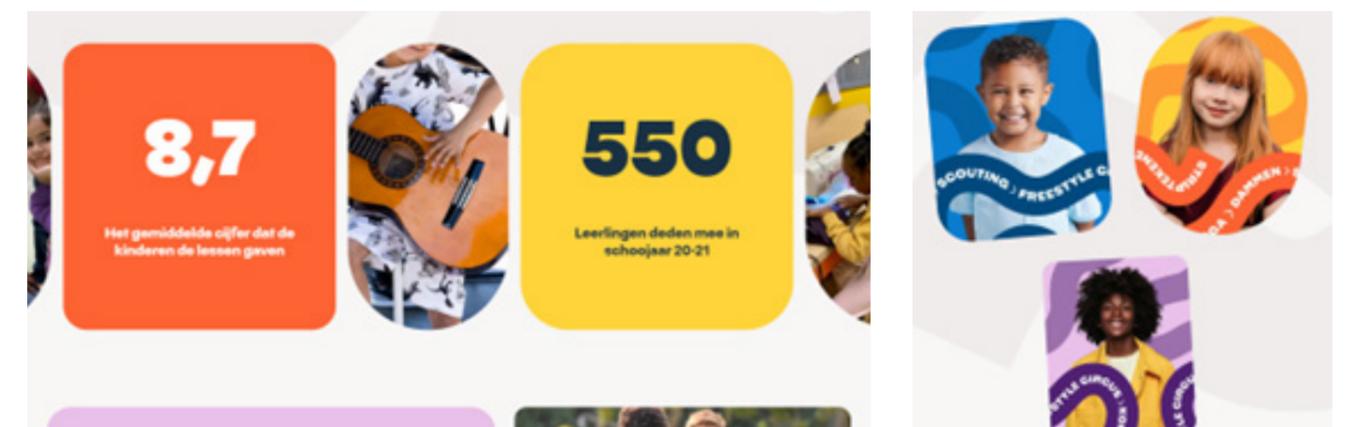


Figure 21. Elements of the Kinderfaculteit's branding.

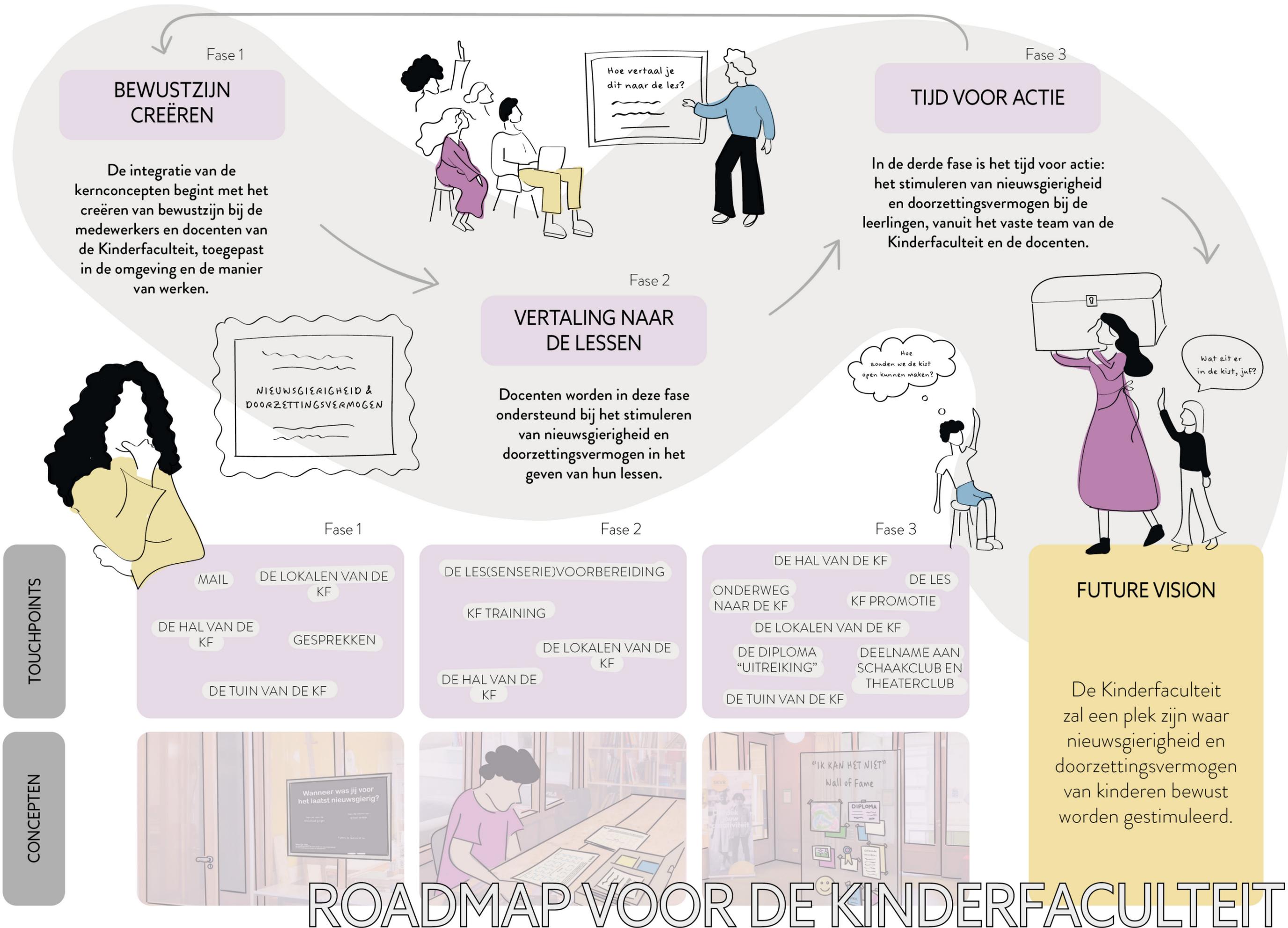


Figure 22. Roadmap for the Kinderfaculteit.

8.3. THE CONCEPTS

For each phase, a concept was designed. On the following pages, the concepts are presented chronologically.

Krijtgesprek

For the first phase to create awareness about the Kinderfaculteit's vision, the concept "Krijtgesprek" was designed, as depicted in Figure 23. The design incorporates multiple chalkboards, each featuring a question related to curiosity and perseverance. Additionally, at the bottom of the boards, there is a "Wist je dat ..." (which translates to "Did you know ...") section presenting the vision of the Kinderfaculteit.

The staff, teachers, students, or other visitors can share their answers on the boards. This way, everyone who visits the Kinderfaculteit is prompted to think about the core concepts of curiosity and perseverance. By engaging the teachers in the implementation of these core concepts, the design fulfils one of the desired criteria, allowing them to actively participate rather than only being presented with the Kinderfaculteit's vision.



Figure 23. Illustrations of the concept "Krijtgesprek."



Figure 24. Four different variations of the chalkboard design.



The overarching touchpoints that play a role in this design are the hall of the Kinderfaculteit and during conversations. The chalkboards can be strategically placed in areas where teachers frequently gather, such as near the coffee machine, fostering increased interaction, which takes into account the desired design criteria of encouraging collaboration among teachers. It also addresses the technique of stimulating discussion but applied to all people involved in the Kinderfaculteit (compared to only the students which is one of the techniques from the literature review). Additionally, positioning a chalkboard near the exit ensures that everyone passing by will encounter it. The text on the boards can be regularly updated, providing new prompts to continually stimulate the awareness of Kinderfaculteit staff and teachers. Four different variations of the chalkboard design are depicted in Figure 24.

Toolkit and co-creation sessions

To facilitate the translation of techniques into the lessons taught at the Kinderfaculteit, a toolkit has been designed to support the teachers in this process, which was one of the wishes of the design criteria for the concepts, as illustrated in Figure 25. The toolkit is based on the co-creation session with the teachers, which yielded positive feedback and creative ideas. It consists of activities aimed at stimulating creativity, thereby aiming to make the techniques more tangible for each individual teacher. This way, it also takes into account one of the wishes of the design criteria for the concepts, which is to make space to let the teachers use their own creativity to implement the techniques within their lessons.

The toolkit includes worksheets, a marker, Post-its and a manual with an explanation of how to use it. The worksheets are depicted in Figure 26. The toolkit comprises a three-step process. In the first step, teachers familiarize themselves with the techniques and are asked to choose two techniques that stimulate curiosity and two techniques that stimulate perseverance. They then rephrase these techniques into "How to" questions using the four worksheets provided in step 2. The "How to" method encourages broader thinking rather than immediately coming up with final solutions, often leading to more creative ideas. Once the teacher completes step 2, they proceed to step 3. In step 3, the answers from step 2 can be applied to the teacher's own lesson.



Figure 25. Illustration of the toolkit in use.

For example, if one of the chosen techniques is "Encourage student discussion," the corresponding "How to" question would be "How to encourage student discussions?" A possible answer could be "By presenting a statement that elicits different perspectives among students." If a teacher uses this toolkit for a chess lesson, an idea for the lesson could be to present the statement "Starting with chess increases your chances of winning" to the children. This would stimulate a discussion among students, and their curiosity might even be activated to experiment if the statement is correct. It shows that the techniques can apply to a variety of teachers, lessons and children, which was one of the realizations during my visit to Bouwkeet that certain educational techniques to stimulate curiosity and perseverance could be applied across various lessons, regardless of the subject matter, teacher, or student diversity. Similarly, the toolkit design takes also into account one of the design criteria wishes for the concepts, namely that the design takes into account the variety of teachers, lessons and children.

The overarching touchpoints that play a role in this design are the preparation of the lessons, lesson series and the Kinderfaculteit trainings. The toolkit can be used for preparing an entire series of lessons or for individual lesson preparation. Since most teachers who were interviewed mentioned that they prepare their lessons beforehand (which can be read in Chapter 3), it is designed to use the toolkit individually, but it is recommended to periodically conduct co-creation sessions where teachers can discuss their ideas and inspire each other, for example during the Kinderfaculteit trainings. This is because, during the co-creation session that I conducted with the teachers, I observed that numerous ideas were exchanged and the other teachers were inspired (personal communication, April 21, 2023). It also encourages interaction between the teachers and includes active engagement in the implementation of the core concepts, which are two of the wishes of the design criteria for the concepts.

Stap 1 Kies 2 technieken die nieuwsgierigheid stimuleren en 2 technieken die doorzettingsvermogen stimuleren. Baseer je keuze op welke techniek je het meeste aanspreekt.

<p>Nieuwsgierigheid</p> <ul style="list-style-type: none"> <input type="checkbox"/> Stimuleer leerlingen om vragen te stellen <ul style="list-style-type: none"> <input type="checkbox"/> Laat als docent je eigen onwetendheid en nieuwsgierigheid zien <input type="checkbox"/> Bevorder discussie onder leerlingen <input type="checkbox"/> Bevorder het gevoel van autonomie bij leerlingen <input type="checkbox"/> Prikkel en verrau de leerlingen <ul style="list-style-type: none"> <input type="checkbox"/> Stel uitdagende vragen <input type="checkbox"/> Creëer spanning <input type="checkbox"/> Maak gebruik van multimedia materialen <input type="checkbox"/> Creëer variatie <input type="checkbox"/> Creëer herkenning <ul style="list-style-type: none"> <input type="checkbox"/> Sluit aan bij de beleveniswereld van de leerlingen <input type="checkbox"/> Maak onderwerpen concreet of zichtbaar 	<p>Doorzettingsvermogen</p> <ul style="list-style-type: none"> <input type="checkbox"/> Geef leerlingen het idee dat ze onderdeel zijn van een groep <input type="checkbox"/> Creëer een positief sociaal leerklimaat <ul style="list-style-type: none"> <input type="checkbox"/> Gebruik positieve communicatie <input type="checkbox"/> Geef feedback op het proces, niet op de persoon <input type="checkbox"/> Bevorder het gevoel van autonomie bij leerlingen <input type="checkbox"/> Maak het eindelijk behagbaar <ul style="list-style-type: none"> <input type="checkbox"/> Duidelijke hulplijnen bieden <input type="checkbox"/> Opknippen in verschillende onderdelen <input type="checkbox"/> Herinneren aan eerdere succeservaringen <input type="checkbox"/> Laat zien dat vergelijkbare kinderen ook het doel kunnen behalen <input type="checkbox"/> Geef kinderen suggesties over hoe ze tot een oplossing kunnen komen <input type="checkbox"/> Benadruk bij activiteiten de intrinsieke waarde i.p.v. de extrinsieke waarde <input type="checkbox"/> Voeg een spelelement toe
---	---

Toolkit | Kinderfaculteit

Stap 2 Herformuleer de gekozen techniek naar een "Hoe kun je" (HKJ) vraag (bijv. "Stimuleer leerlingen om vragen te stellen" wordt "Hoe kun je leerlingen stimuleren om vragen te stellen?"). Beantwoord de HKJ-vragen vervolgens op zo veel mogelijk verschillende manieren. De antwoorden hoeven nog niet te passen in de context van jouw les.

Hoe kun je _____?

Toolkit | Kinderfaculteit Tip: Gebruik de stiften en post-its uit de toolkit.

Stap 3 Bekijk de antwoorden die je hebt gegeven in stap 2. Pas de antwoorden toe op jouw les. Hoe zien de ideeën die je hebt bedacht eruit in een les die jij geeft op de Kinderfaculteit? Bedenk zo veel ideeën als je wilt en voer degene uit die bij jouw les passen!

Jouw les _____

Toolkit | Kinderfaculteit

Figure 26. The three worksheets of the toolkit.

I-Can't-Do-It Wall of Fame

The "I-Can't-Do-It Wall of Fame" was created by a teacher at the Kinderfaculteit during one of the co-creation sessions. Figure 27 depicts an illustration of the wall of fame within the hall of the Kinderfaculteit. The concept addresses one of the techniques identified in the literature research, namely "giving feedback on the process rather than giving feedback on the person" and "stimulate and surprise the children". When students doubt their abilities during a lesson, their final result can be displayed on the Wall of Fame. This way, children get to experience that the opposite can be true when they believe they are unable to accomplish an activity.

The main touchpoints that are involved in this design are the Kinderfaculteit's hall, the lessons, and the diploma ceremony.

By placing the board centrally in the Kinderfaculteit's hallway, all students will come into contact with it. A transparent material was chosen for the wall to maintain the open character of the space.

The works can be replaced periodically so that the students can take their creations home. The replacement of the works also aims to continue stimulating and surprising the students and show them the possibilities that exist despite their initial feelings of doubt.

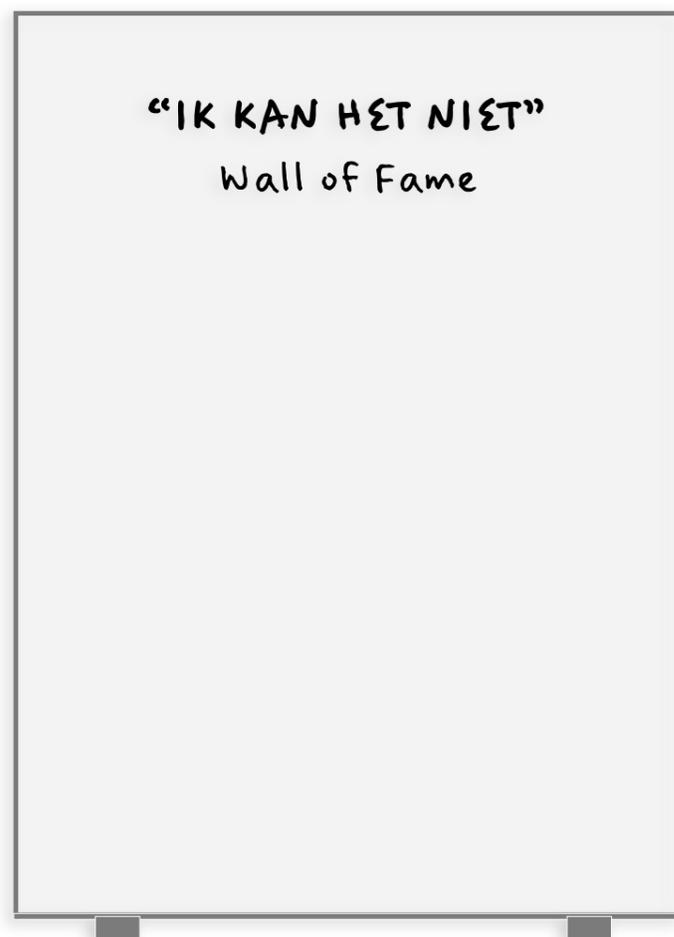


Figure 27. Illustration of the "I-Can't-Do-It Wall of Fame".

8.4. INTEGRATING THE DESIGN

To increase the feasibility of the roadmap and concepts, I have thought about how the designs can be integrated within the Kinderfaculteit. Even though the roadmap itself serves as a means to facilitate integration, there are more tools to ease the process of integration. The roadmap is designed to be printed as a poster, and a booklet has been created to provide an explanation of the roadmap, as a tactical roadmap. In this booklet, the concepts are described in detail. Figure 28 displays the cover of the booklet.

The booklet begins with an introduction and an overview of the roadmap's phases. Subsequently, the first phase of the roadmap is explained. The pages can be found in Figure 29. It starts with a brief description of the phase, followed by the touchpoints that correspond to that phase. The booklet also explains the essence of considering touchpoints when generating ideas for integrating the vision of the Kinderfaculteit. The concept is then explained, indicating where and when it will be applied. This demonstrates how the idea can be aligned with the touchpoints. The same structure is followed for phases two and three in the booklet. However, for phase two, I deemed it necessary to provide more explanation due to the concept's complexity compared to the other two concepts. Additionally, this concept focuses more on the touchpoints connected to the moment ("when") than the location ("where"), so the toolkit is further explained by discussing how to use it and when it can be used. The booklet ends with an overview of the educational techniques as a reminder and the back cover displays the roadmap. The design of the toolkit took into account the branding of the Kinderfaculteit, just like I did for the roadmap.

Furthermore, I recommend that the Kinderfaculteit assigns the implementation of the roadmap phases to an intern or a working student who can turn it into a project. This suggestion stems from one of the insights gathered during this graduation project, which revealed that interns and working students are often hired. It was also one of the design requirements for the concepts since it increases the feasibility of the design. Another idea could be that one or more teachers from the vast group of teachers of the Kinderfaculteit could be tasked with consciously integrating curiosity and perseverance within the organization.

The full booklet can be found in Appendix I.

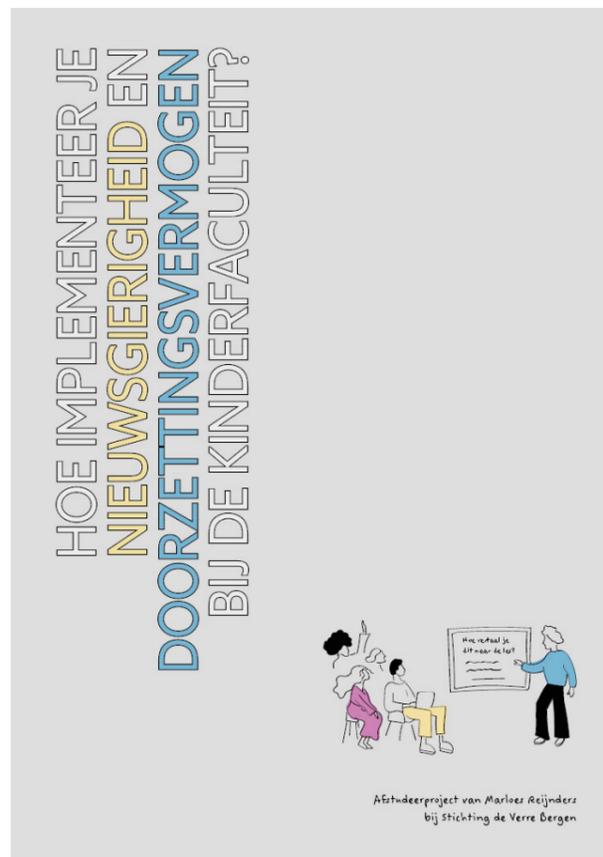


Figure 28. Cover of the booklet.

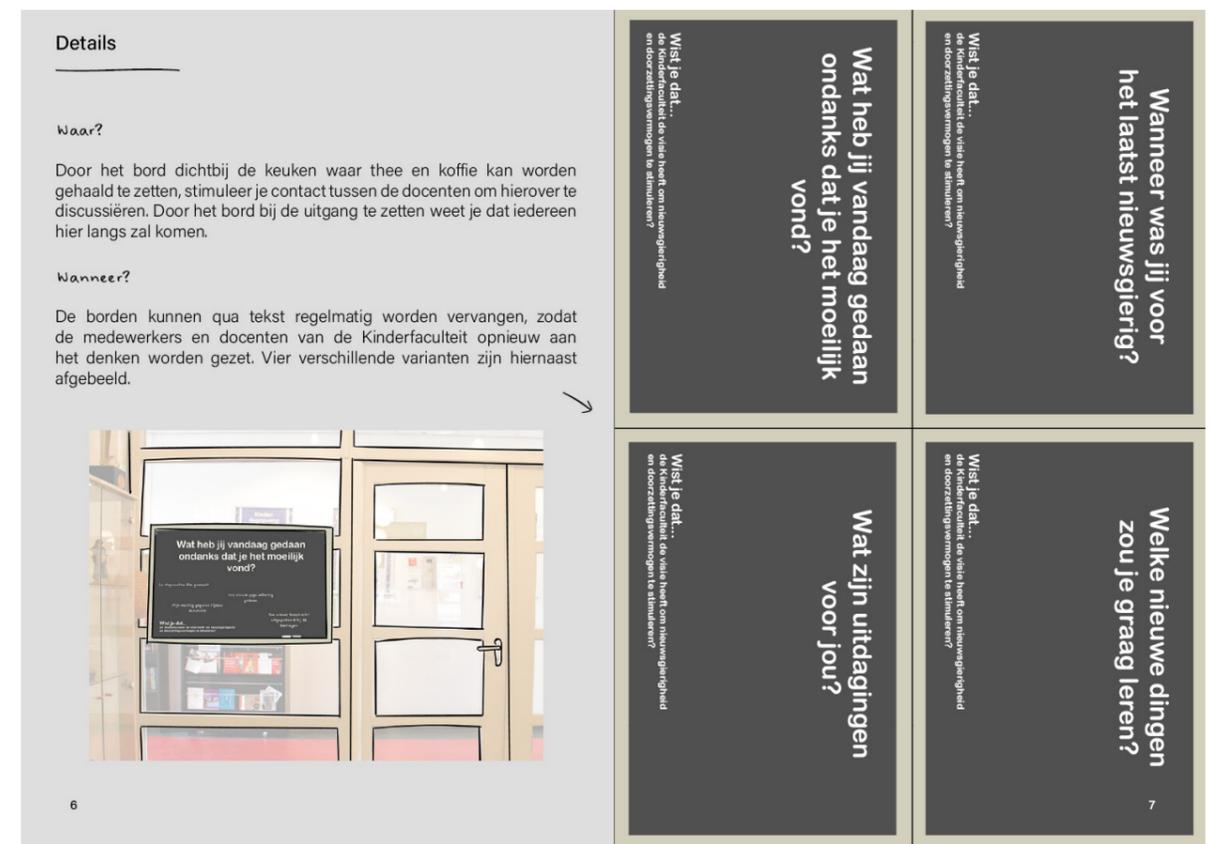
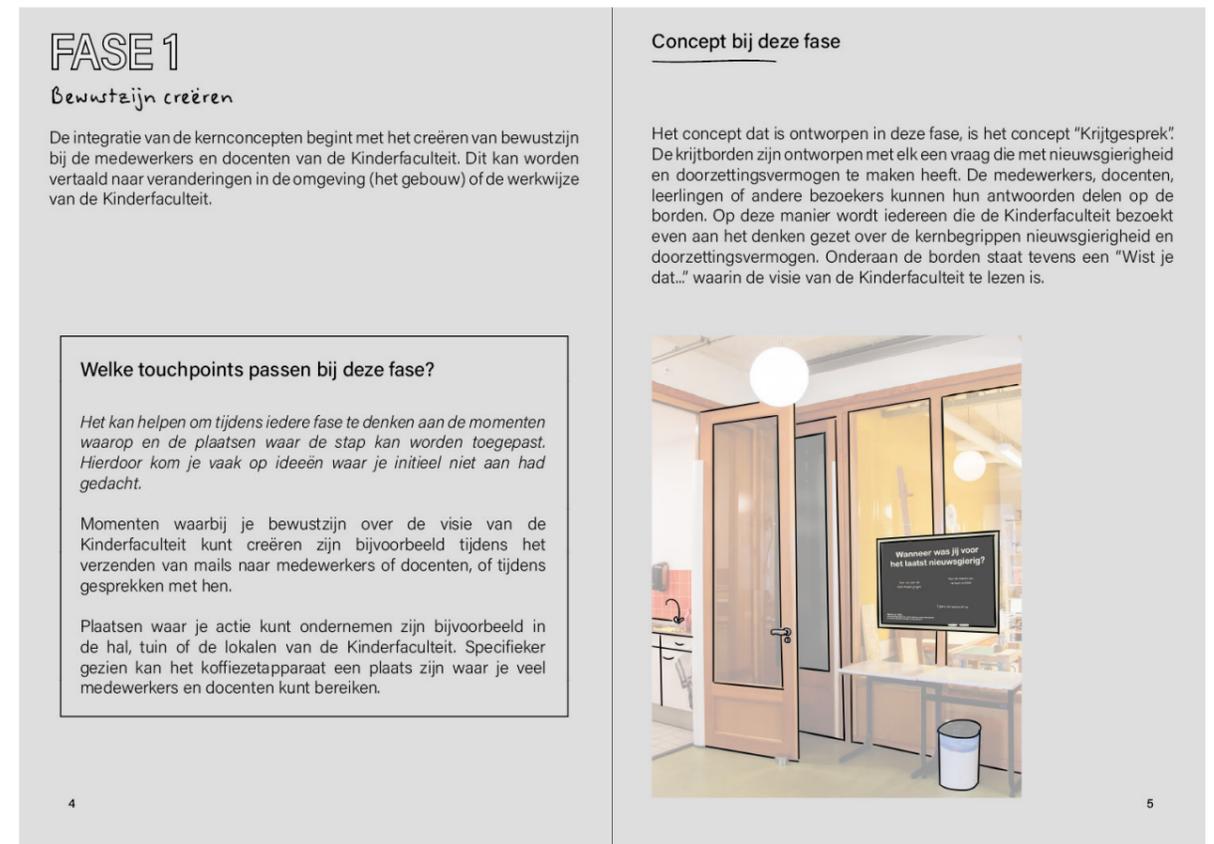


Figure 29. A few pages of the booklet.

8.5. VALIDATION

To validate the prototypes of the roadmap and concepts, I planned to validate the results with one of the project managers of the Kinderfaculteit. The project manager was positive about the designs. She was planning to use the roadmap and designs during the integration of the vision of the Kinderfaculteit.

“I think it would be really fun to actually start using this. Everything comes together quite nicely.”

“I find it particularly amusing that your process involves looking a little further, knowing where and how to make things visible, which doesn't come naturally to me. I think it is really nice.”

The project manager mentioned that she has numerous ideas for integrating the stimulation of curiosity and perseverance within the Kinderfaculteit. However, she expressed that the roadmap provides her with structure. She shared, “The roadmap has a clear beginning, middle, and end, and even though there are multiple possibilities to explore, it provides direction and aligns with what I had in mind already.” In addition, she confirmed that consciously integrating the core concepts into the Kinderfaculteit is essential as I shared the future vision with her.

When I showed the first concept “Krijtgesprek”, the project manager mentioned that she liked the idea and she found it valuable that the “Where?” and “When?” questions were added in the booklet. In her opinion, these added questions may sound simple but can make a difference when it comes to executing the idea.

When I presented the toolkit including the co-creation sessions, the project manager shared numerous ways in which the toolkit could be implemented within the Kinderfaculteit. She expressed the way that the toolkit can be used during a session with the permanent group of teachers together with the Kinderfaculteit coordinators. Additionally, she highlighted its value as an addition to the existing Kinderfaculteit trainings, particularly for introducing it to new teachers who

need to become acquainted with the Kinderfaculteit's working method or who may feel nervous about their teaching. She emphasized that the toolkit is particularly beneficial for teachers who are less inclined to change their lessons, as they may be more willing to integrate the techniques into their lessons when they use such a toolkit. In addition, she noted that this phase provides a solution to a challenge faced by the other project manager responsible for sports lessons. He had difficulties in seeing how the techniques could be applied to sports lessons. This second phase of the roadmap has the aim to translate the techniques into the variety of lessons given at the Kinderfaculteit.

“I can also imagine using it in an existing training. We once did a training on structuring a lesson ... This would fit very nicely in such a session because you're also focused on how to structure your lesson.”

“Of course, we can use numerous activities that are separate from the Kinderfaculteit, but this design is based on what we stand for.”

When I presented the final concept of the “I-Can't-Do-It Wall of Fame” and explained to her that it can serve as a connecting element where different lessons come together, she shared that it is a beautiful concept and agreed that it is a nice way to stimulate connections between the various lessons.

The project manager also shared that during their team meeting, one of the teachers expressed her enthusiasm about the co-creation session. The teacher found it highly interesting and expressed a desire for such sessions to occur more frequently. This is why the project managers are planning to do such sessions with the permanent group of teachers together with the Kinderfaculteit coordinators.

8.6. KEY INSIGHTS

Key insights are formulated in this chapter that serve as answers to the design questions which can be found at the beginning of this chapter.

1. The final design of this graduation project is a roadmap for the project managers of the Kinderfaculteit, outlining the steps to achieve a future vision. The future vision is “The Kinderfaculteit will be a place where curiosity and perseverance in children are consciously stimulated,” with the three phases “Creating awareness,” “Translation to the lessons,” and “Time for action.” Next to the roadmap, three concepts are designed: “Krijtgesprek,” a toolkit combined with co-creation sessions and the “I-Can't-Do-It Wall of Fame”;
2. To integrate the designs into the Kinderfaculteit, the roadmap is printed as a poster and a booklet is made to explain the roadmap and concepts. In addition, it is recommended that the Kinderfaculteit assigns the implementation of the roadmap phases to an intern, a working student or a teacher who can turn it into a project to execute the implementation;
3. Based on the validation session, arrows were added in the roadmap to show that the roadmap can be used for short-term and long-term plans for integrating the core concepts in the working method of the Kinderfaculteit;
4. The project manager showed enthusiasm for the final design of this graduation project and expressed that she is planning to use it during the integration of the core concepts within the Kinderfaculteit. She shared several ways in which she would implement aspects of the design within the Kinderfaculteit.

Chapter 9

DISCUSSION

This chapter includes the discussion section of the graduation project.

The chapter is structured as follows:

- 9.1. Contributions and Suggestions
- 9.2. Limitations

9.1. CONTRIBUTIONS AND SUGGESTIONS

Contributions

Stimulating curiosity and perseverance, which is about learning specific behaviours rather than unlearning these, is primarily explored through research conducted on the level of an individual, while studies addressing the group aspect often concentrate on interventions targeting the unlearning of specific behaviours, such as weight loss or smoking cessation. In this project, I discovered that taking a holistic (design) approach to fostering specific behaviours within an organization (such as the Kinderfaculteit) can help to understand the variety of touchpoints beyond the individual that can have an impact on learning these specific behaviours (in this case, these touchpoints were the moments and places that can have an influence on the stimulation of curiosity and perseverance).

As a result, my focus shifted towards exploring how the stimulation of curiosity and perseverance (and the techniques found in literature) can be implemented on an organizational and on a group level, rather than solely on the individual level. In Figure 30, the different levels on which children can be stimulated are illustrated. This perspective is reflected in the roadmap and concepts that have been created: the chalkboards are designed to be answered by the various people connected to the Kinderfaculteit (and therefore addresses the technique of encouraging student discussion but then applied to all people involved in the organization), the toolkit is centred around teachers who influence groups of children at the Kinderfaculteit, and the "I Can't Do It Wall of Fame" brings together the works of children in the centre of the building and was based on the techniques from literature.

By utilizing a design approach, it became clear that learning a specific behaviour involves numerous different variables beyond an individual (for example the different touchpoints), which can be difficult to determine using conventional, analytical research methods. Thus, I emphasize the importance of researching the stimulation of certain behaviours

(rather than unlearning these), such as curiosity and perseverance, on an organizational and/or on a group level, which goes beyond studying these behaviours solely on the level of an individual.

Besides the theoretical contributions, I have also made a practical impact at the Kinderfaculteit by shifting the focus from an individual child level to the organizational level. As mentioned earlier, the roadmap has provided structure to the project management during the implementation of stimulating curiosity and perseverance. It has helped identify various touchpoints where and when the Kinderfaculteit can stimulate these core concepts, encouraging the project management to think creatively when it comes to ideas to implement. The design process has helped to come up with practical recommendations that have been gathered into a booklet, providing the Kinderfaculteit with a roadmap and tangible concepts to help implement the Kinderfaculteit's vision into their working method. To finish, the co-creation sessions led to enthusiastic teachers and the Kinderfaculteit is now planning to do more co-creation sessions for the implementation phase of stimulating curiosity and perseverance within the Kinderfaculteit.

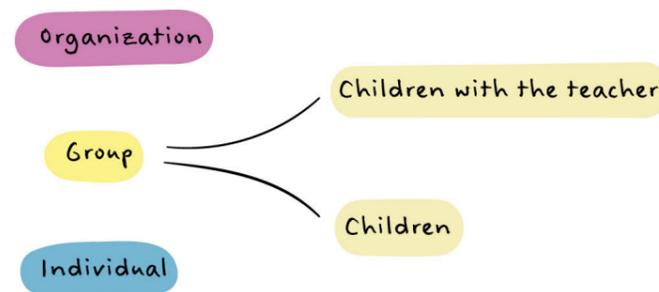


Figure 30. The four observation levels.

Suggestions

From September on, the Kinderfaculteit will begin implementing curiosity and perseverance within its working method. I have formulated some suggestions that complement the designed roadmap and concepts.

My first suggestion is to have the techniques tested by teachers once they have become aware of the core concepts and have found ways to apply the techniques for stimulating curiosity and perseverance in their own lessons. I advise the Kinderfaculteit to request teachers to keep a logbook, allowing them to reflect on which techniques work or do not work, and how the effect of the techniques may vary for different students. Additionally, the Kinderfaculteit is already planning to conduct observations to discover which techniques are effective or not within the lessons. I suggest the Kinderfaculteit to review and analyse these outcomes from the logbook and observations, leading to potential iterations on the techniques.

During a validation session with the project manager, it was mentioned that there may always be teachers who will not use the toolkit. Therefore, she came up with the idea to utilize ideas generated by teachers who do use the toolkit as ready-made suggestions to inspire those who do not make use of the toolkit. I suggest incorporating these ready-made suggestions in the toolkit, using cards with those ideas placed in a separate compartment within the toolkit box. This way, teachers can choose between (co-)creating their own ideas specifically designed for their own lessons or opting for time-saving ready-made suggestions. As the Kinderfaculteit plans to start the implementation of the stimulation of curiosity and perseverance with the permanent teaching team, the first ready-made suggestions will likely be created by these teachers.

The final suggestion for the Kinderfaculteit is a long-term recommendation. Since one of the project managers emphasized the importance of stimulating curiosity and perseverance before, during, and after the series of lessons, I suggest considering this as part of the future planning after the implementation within the Kinderfaculteit itself. I deliberately chose not to include this in the roadmap as the Kinderfaculteit is still in the initial stages of implementation. I propose applying the roadmap in a similar manner to, for example, schools and home environments, to continue stimulating curiosity and perseverance before and after the lesson series. This involves starting with discovering how to generate awareness about curiosity and perseverance in for example one of the schools in Pendrecht, then introducing the techniques to the teachers of the school, and finally implementing them in the entire context of the school.

At the time of writing this report, I am in contact with one of the project leaders to assist during the Kinderfaculteit's first co-creation session planned for September. This allows me to share my suggestions with the project managers and enhance the feasibility of my design of the roadmap and concepts for the Kinderfaculteit.

9.2. LIMITATIONS

Since this report was written in English, but the design was for a Dutch organization, this had an impact on the validity of language. All interviews were spoken in Dutch but analysed in English to align with the content of the report. Since I designed the roadmap and booklet for a Dutch organization, these deliverables are written in Dutch.

Since the literature review was conducted collaboratively with SDVB, the definitions that I had chosen for curiosity and perseverance were slightly different from the definitions that SDVB used. SDVB chose the broader definitions that the Kinderfaculteit used, while I chose definitions rooted in the scientific literature to substantiate the project. At the same time, the literature itself presented a diverse range of definitions for curiosity and perseverance as well. I chose two definitions based on the literature while taking into account the definitions that the Kinderfaculteit utilized and the answers that I got from the teachers that I interviewed. This way, I strived to uphold one definition for both core concepts throughout the co-creation sessions.

Due to the various iterations involved in this project, there is a difference between the final list of techniques and the overview of techniques that was created during the co-creation session with the teachers. However, the techniques that emerged from the co-creation session were taken into consideration when the final list of techniques was created. The co-creation session was also facilitated for inspiration, which means that the final design was still based on the techniques that were ultimately chosen. Thus, the slight difference in techniques that was incorporated did not have a major impact on the validity of this project.

The focus groups were executed to triangulate the techniques that resulted from the literature review. Additionally, some other techniques were formed based on the input from the focus group participants. Since the first focus group was with two participants and the second focus group was with three participants, which is not a big group of people, this may affect the quality of the techniques. Therefore, it is suggested to test which techniques work and which ones do not (which is described in 9.1. Contributions and Suggestions).

All conducted interviews were recorded for transcription purposes. The transcriptions are not included in this report since I ensured anonymity and this could not be ensured when I would include the transcriptions since the Kinderfaculteit is a relatively small organization. I wanted to ensure anonymity to create space for open and honest responses. Therefore, during the analysis of the interviews, I made use of statement cards to maintain the interviewees' openness and, at the same time, to substantiate my insights.

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