DEVELOPING LEADERSHIP QUALITIES FOR DESIGNERS

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Developing leadership qualities for designers.

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Abstract

This research and design project provides design leaders with a toolkit that aims to help them develop their leadership qualities. With the modern definition of a designer being in a transitional period where designers are transitioning on the spectrum of traditional designers and business executives (Muratovski, 2015), creativity is becoming a more desirable attribute with the increasing discourse around innovation (Rylander, 2009), it seemed like the right time to look at designers in leadership positions. This project was done through firstly developing strategies for managing the research-practice gap (Norman, 2010) in the project, after which these were combined with a grounded research approach (Martin & Turner, 1986). 22 interviews were done with practitioners. Temporarily shifting the perspective of design leaders on leadership styles was chosen as the design goal. A toolkit in the form of a card deck was developed and evaluated with the user-group. Recommendations to improve on the developed strategies are presented. The conducted research and developed strategies, regarding the research-practice gap, contributed to existing knowledge by showing how designers can manage the research-practice gap in their projects on a single project level. The conducted research, regarding design leadership, contributed to existing knowledge by assessing how designers experience, and fare in, leadership positions and providing a novel way for them to self-reflect and self-assess their leadership competencies. The project contributed to both in the way of bridging the gap by brokering leadership knowledge towards the design leadership practitioners through the designed toolkit. Further research should be conducted to evaluate the effectiveness of the strategies in practice, and to further explore what designers could learn from the field of leadership.

Contents

READING GUIDE

Reading guide

This is a graduation project report, related to the Design for Interaction master from the Delft University of Technology. The project "Developing leadership qualities for designers" was aimed at doing impactful research* on designers in leadership positions to determine what their perceived difficulties are and which skills would help them thrive in these positions. Impactful research was done through interviews with the usergroup and through analysis of the gathered and generated data from these interviews. Doing this research and synthesising the data was the focus of the project. An intervention was then designed with the goal of promoting the particular behavior of reflecting, in order to temporarily change the perspective of the users. Firstly, the project will be briefly explained. The significance of the project, the problem definition and the envisioned research approaches and methods are then elaborated upon. Secondly, the research-practice gap will be discussed. The chapter is concluded by laying out the proposed strategies for use during the duration of the research activities in this project and reflections on these strategies in use. Thirdly, a short literature review on leadership and designers in leadership positions, together with the research questions, will be discussed. Fourthly, the research activities performed for gathering and generating data are discussed, which consist of interviews and analysis. Fifthly, the results of the research activities are introduced and discussed. Sixthly, the synthesis of the gathered and generated data, which was then used to come to a design goal is introduced, explained and discussed. Seventhly, the ideation, the list of design requirements and concepting activities and their results are displayed and reviewed. Eightly, the final design and its elements and a storyboard with the envisioned interactions are reported and examined. Lastly, conclusions and reflections on the process are shared and deliberated upon.

*Impactful research is defined, for this project, as research that utilizes research strategies that take the research-practice gap (Norman, 2010) into account.
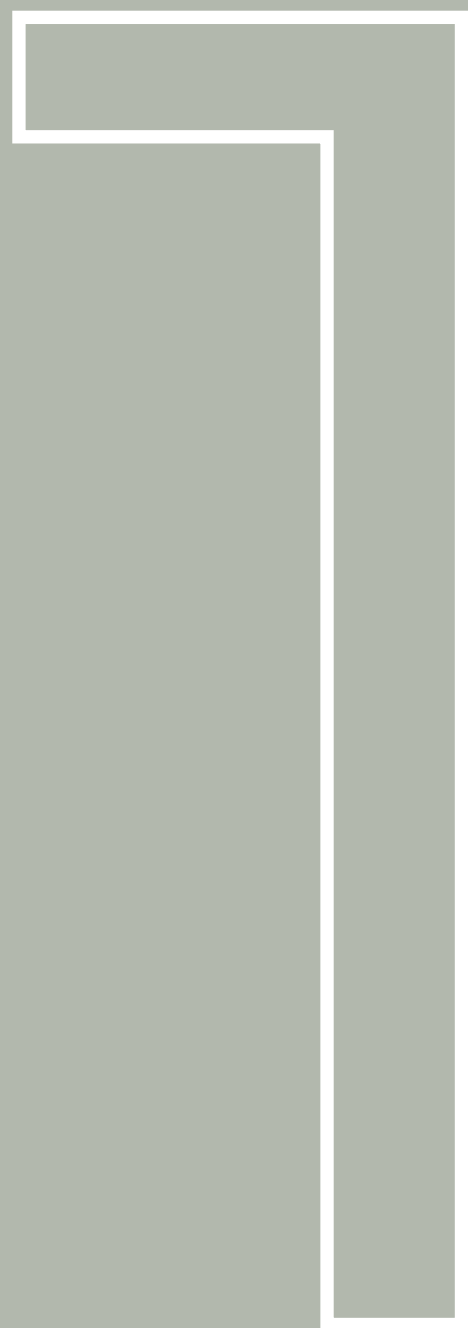
THE PROJECT: DEVELOPING LEADERSHIP QUALITIES FOR DESIGNERS

1.1 - Introduction : Leadership qualities for designers

This project was set up to investigate whether designers benefit from their designerly background and skills when placed in leadership positions and whether there is anything designers should learn from the field of leadership. Leaders often have to make intuitive rather than rational decisions when faced with incomplete information, as Maxwell (2207) illustrates well in his "Law of Intuition" (p.87). This will sound very familiar to any designer that has ever been under time-pressure, as this "necessitates the use of design intuition" (Badke-Schaub & Eris, 2014, p.366). Designers are guided by the "design professionals' primarily intuitive approach" (Calabretta et al., 2017; p.366), but have also been described as creative thinkers, communications experts and could even be described as managers (Fisher, 1997). Boland & Collopy (2004) introduced 'managing as designing' and as managing is often related to or even confused with leadership, this sparked the idea that there might have to be something such as 'leading as designing'? With the modern definition of a designer being in a transitional period where designers are transitioning on the spectrum of traditional designers and business executives (Muratovski, 2015), creativity is becoming a more desirable attribute with the increasing discourse around innovation (Rylander, 2009) and some even calling design leadership imperative for creating and sustaining a competitive advantage (Turner & Topalian, 2002), it seemed like the right time to look at designers in leadership positions.

The project was done whilst keeping the research-practice gap (Norman, 2010) in mind, by developing strategies for impactful research. This was done to explore how one can manage the research-practice gap in a research project and in this way do research that has an impact on the practitioning design professionals.

1.2 - Problem definition

Designers are not trained to be leaders or managers, but are in the unique position to transition into such roles due to the rising popularity and inclusion of design thinking into organizations (Muratovski, 2015). This led me to investigate how they were thriving in leadership positions and how we could begin to empower them in these positions.

Designers in leadership roles have some designer skills that would or would not benefit (Boland & Collopy, 2004; Michlewski, 2008; Gorb,

1986) them in a leadership role. When designers are currently placed in such leadership positions they could potentially lack some crucial leadership skills that would help them in these leadership roles. For example, Maxwell mentions that "Leadership ability is the lid that determines a person's level of effectiveness. The lower an individual's ability to lead, the lower the lid on his potential '' (2007; p.1), which works both ways, which means that developing leadership ability might actually increase one's potential. Rylander (2009) wrote that it has been suggested that designers may have problems reconciling the stereotype surrounding designers. On the other hand, it could also even positively translate back into a modern designer role. For example, Rylander (2009) mentions that when great business leaders or great designers enter some kind of constrained environment where they have to solve a problem by thinking outside the box, both groups start to look very much the same.

Designers in leadership roles have to work on their leadership skills if they want to perform well in said roles. How these leaders prefered to learn and gain knowledge was unknown at the start of the project. It was known, however, that these design leaders would benefit from research from the leadership or design management (Cooper, Junginger, Lockwood, 2009) field. The research-practice gap (Norman, 2010) is a concept that contributes to making it harder for this research to make an impact on practitioners, such as designers placed in leadership roles. This means that it is harder for practitioners to find knowledge that is applicable and/or does not need translation. How did this user-group of design leaders prefer to go about improving their skills, how could they be supported in their efforts and what role did the research-practice gap play?

In the end, research was done on designers in leadership positions to determine how they were thriving and how these design leaders could be empowered, whilst taking the research-practice gap into account.

1.3 - Research approach and methodology

This research and design-project was set up to generate new knowledge on designers in leadership positions and on how to deal with the research-practice gap in a research project, using a grounded theory approach. "Grounded theory is an inductive, theory discovery methodology that allows the researcher to develop a theoretical account of the general features of a topic while simultaneously grounding the account in empirical observations or data." (Martin & Turner, 1986; p.141). The research approach and methodologies used, will be discussed in this subchapter.

1 RESEARCH ON THE RESEARCH-PRACTICE GAP
Developing strategies for impactful research to be used during the rest of the project.

3 RESEARCH ACTIVITIES
Interviews and thematic cluster analysis.

2 RESEARCH ON DESIGNERS AND LEADERSHIP
Developing research questions and literature review on leadership.

5 SYNTHESIS
Using the gathered and generated data to formulate a design goal.

4 RESEARCH RESULTS
Results from the research activities.

6 IDEATION AND CONCEPTUALIZATION
Ideation, conceptualization, prototyping, testing and reflecting towards a design that satisfies the design goal.

7 FINAL DESIGN
A final design that was designed using the list of design requirements and tested with design leaders.

As can be seen in image 1 (part1), the project was set up to firstly start with a literature review to "summarize and evaluate the state of knowledge or practice on the state of" (Knopf, 2006; p.129) the research-practice gap and to use this in order to develop and propose strategies that could be used for the rest of the duration of the project, in order to cope with the research-practice gap and hopefully do research that will have a meaningful impact for the practitioners. These strategies were applied and reflected upon, on a weekly basis.

Secondly, after the strategies had been set up, a short literature (see image 1; part2) review on leadership and designers in leadership was done. Research questions guided the literature review.

Thirdly, research activities (see image 1; part3) were set up and executed to further answer the research questions. Data was gathered and generated using interviews (Van Boeijen et al. (Delft Design Guide), 2014; p.47 & Byrne, 2001) and then analysed using thematic clustering analysis (Guest & McLellan, 2003) which resulted in relevant themes.

Fourthly, the relevant themes that emerged from the research activities were clustered (Tassoul, 2007; p.86). Using a sensemaking process in order to synthesize (Kolko, 2010) (see image 1; part4) the data was synthesized and a solution or design space (Tassoul, 2007; p.47) was developed. Using this design-space, a design-goal was co-created.

Fifthly, the developed design goal was used and challenged through a process of agile ideation (Armitage, 2004) and concepting (see image 1; part5). The insights gathered during this process were used to make iterations on the design goal and grow the list of design requirements (Van Boeijen et al., 2014; p.103) for a final concept.

Sixthly, the final concept was designed and the intervention was evaluated through testing (see image 1; part6) a prototype (Tassoul, 2007; p.81 & Van Boeijen et al. 2014; p.131+135) with the user-group and communicated by the use of a storyboard (Van Boeijen et al. 2014; p.97).

Lastly, reflections were done on the intervention together with future recommendations, together with the reflections and future recommendations on the strategies concerning the research-practice gap (see image 1; part7).

In the end, literature research, strategy formulation, interviews, cluster analysis, thematic analysis, synthesis, user-testing, ideation, prototyping, concepting, designing and reflecting were done during the research project in order to gather and generate knowledge on designers in leadership positions and how to cope with the research-practice gap during a research and design-project.

THE RESEARCH - PRACTICE GAP

2.1 - Literature review setup

Research into the research-practice gap was done by way of literature review. Research questions were articulated to guide this literature review. The answers to the research questions provided the basis for the strategies for impactful research that were developed. These strategies were then put to use during the full duration of the project.

In order to build an understanding of the research-practice gap phenomenon and develop strategies on how to manage the research-practice gap during a master thesis project research questions were articulated (see Appendix A1). The primary questions that were answered are:

What is a Research-Practice Gap?
How does it manifest?
How can I manage it in my project?

The research questions (Appendix A1) were used to structure the research and were set up in such a way that they moved, step-by-step, towards developing strategies for doing impactful research.

2.2 - Literature review research-practice gap

The complete results can be found in Appendix A1. Firstly, the research-practice gap and its characteristics are discussed, after which the strategies for managing the research-practice gap are introduced.

All this talk about the research-practice gap might have made one wonder, what exactly is a research-practice gap?

"There is a fundamental disjuncture between the world of research and the world of practice (Mulhall, 1997; p.970)." This disjuncture is a fundamental gap between research and practice, which is caused by a misunderstanding on both sides of the requirements and goals of the other (Norman, 2010). Any gap endures because of the inherently paradoxical nature of research and practice (Smith & Lewis, 2011, p. 382). This also means that every field has a research-practice gap. Even in the fields with a substantive scientific basis, the practical applications to the daily practice can be very limited (Norman, 2010). Bansal (2002) describes the origins of the research–practice gap as having been well laid out in the literature: Researchers prefer producing knowledge over translating and disseminating it (Van de Ven & Johnson, 2006), researchers have an incentive

to produce research (Khurana, 2007) rather than to engage with practitioners, researchers and practitioners represent information in different ways and use different language and strategies (Kelemen & Bansal, 2002; Kieser & Leiner, 2009), and researchers and practitioners have different epistemological stances (Rousseau, Manning, & Denyer, 2008; Shrivastava & Mitroff, 1984).

Now that we know what a research-practice gap is, how does it affect an academic field?

Robinson (1998, p.25) says that: "The research-practice gap arises when the theories of researchers do not articulate with the theories of practitioners. The gap persists because without an adequate account of practice we do not know the methodological resources that are required to forge such an articulation." As a result of everyday working commitments or organizational factors, which constrained practitioners' attempts to use or undertake research, the practitioners are often unable to take part in the world of research (Le May et al, 1998).

When too small a research-practice gap is created, we risk compromising academic research and their position by only focusing on the needs of practitioners and in turn, not exploring the abstract and the unknown, but only the expedient. This would also endanger the scientific rigor and generalizability that we often praise the academic side for. On the other hand, too big a research-practice gap means we risk academic research not having an impact on practice and practitioners. When the gap is too big the academic research and their questions have no roots in practice. This can result in the outcomes of the research being difficult or impossible to apply to practice. This research is then often referred to as hailing from the ivory tower of academia.

The research-practice gap shows itself when research is misinterpreted and even misused by practitioners, often leading to frustration on both sides.

Practitioners, and researchers for that matter, should however not want the gap to be closed. The gap creates a buffer, allowing practitioners to grapple with problems and solutions without researcher interference (Bansal, 2012).

So, the research-practice gap is the buffer between research and practice which we should not simply close or remove. So what is there to be done about the research-practice gap then?

Researchers should focus on managing the paradox, not neutralizing it as neutralizing the paradox is both impractical and too big an undertaking for a singular researcher. Bansal et al. (2012, p.85) state that: "Working in the gap between research and practice calls for a willingness to embrace

these paradoxes and a concerted effort to move forward in the face of the ensuing contradiction and contestation. Ultimately, as Smith and Lewis (2011) noted, paradoxes do not need to be dismantled or neutralized, but rather managed in a state of dynamic equilibrium."

Concluding, the research-practice gap is inherent to each field. Fields should attempt to bridge the research-practice gap depending on how the gap manifests itself in that particular field. Researchers can try to manage the paradoxical nature of the research-practice gap in their own projects. They can do this by engaging with practitioners and other stakeholders, as this can be fruitful for their research and increase the impact of their research. For doing exactly this, proposed strategies for impactful research have been formulated using the knowledge gathered for this literature review.

2.3 Proposed strategies for impactful research

In an attempt to manage the paradoxical nature of research-practice gap, in ways suggested by the literature, the final research question comes into focus:

What can I do to manage the Research-Practice Gap in my project?

These strategies were developed and operationalized for the purposes of being usable during this specific research and design-project.

The literature review revealed a variety of ways to manage a research-practice gap. For the purposes of this project, strategies were selected, reformulated and operationalized to fit this specific project. Not all of these strategies are useful in the same way, so they (see image 2) were then placed into two categories; research strategies and solution requirements. The research strategies should be used during the earlier research stages of the project, whilst the requirements become relevant during the ideation and concepting phase.

The research strategies:

The research strategies were operationalized for this project by allocating and implementing a moment for specific research-practice gap managing related reflection. Using a reflection script (see Appendix B), which introduced eight questions for reflection and an overview of the strategies themselves, the moments of reflection were executed on a weekly basis. These reflections helped to change one's perspective specif-

RESEARCH ON THE RESEARCH-PRACTICE GAP

STRATEGIES FOR IMPACTFUL RESEARCH

RESEARCH STRATEGIES

Start your research with the gap in mind and set up to bridge it beforehand.
(Stappers & Sanders, 2012)

Consider and reflect on the consequences of my ideas; plan this at the end of the project or midway throughout.
(Murray, 2009)

Include questions on how people gain knowledge (on leadership) in the interviews, also do additional research on this.
(Murray, 2009)

Include information outside of the literature.
(Murray, 2009; Bansal 2012)

Engage practitioners to co-create relevant and interesting research questions.
(Bansal, 2012; Banks, 1985; Mallonee et al., 2006)

DESIGN REQUIREMENTS

Translate and transform useful research into a useful form for practitioners.
(Bansal, 2012)

The intervention might serve as a boundary object.
(Bansal, 2012)

Determine how the project will use appropriate communication channels for sharing.
(Murray, 2009; Bansal, 2012)

Make the resulting intervention of the project flexible for the users.
(Murray, 2009)

A solution area of opportunity is providing the practitioner with more (efficient and/or easier) moments or incentives to explore the research of their field with the goal of applying it to their practice.
(Le May et al., 1998; Seymour et al., 2003)

Introduce and/or promote a common language.
(Stappers & Sanders, 2012)

Design as irritations, provocations, or inspirations for practice; based on research.
(Kieser & Leiner, 2009)

ically towards how one was working on making a difference for the practitioners, by making the researcher aware which activities and sources contribute more or less towards making an impact for the practitioners. These reflections are further elaborated upon in Chapter 9.

The design requirements:

The requirements were derived from literature that suggested certain things to be constructed or built, instead of things a researcher specifically could do themselves to manage the research-practice gap. These requirements were added to the list of design requirements (see Chapter 7) as wishes, which were later used to make design decisions.

In the end, the literature on the research-practice gap was reviewed and strategies for impactful research were formulated. These strategies were split into research strategies and design requirements. The strategies were used and reflected upon on a weekly basis, whilst the solution requirements were only relevant during the design stages of the project.

RESEARCHING LEADERSHIP BY DESIGNERS

Research on leadership by designers was started by way of a short literature review. Research questions (see Appendix A2) were articulated to guide this literature review. The answers, or lack thereof, to the research questions provided the basis for the interviews, analysis and synthesis towards the design goal. As Knopf (2006) suggests, studies were selected, their goals and conclusions summarized and then grouped by commonalities, disagreements and gaps in the literature.

3.1 Leadership Literature Review

Leadership is the ability of an individual person, group or idea, to influence, guide and enlist the help of other individuals, teams and even organizations (Western, 2019) in order to achieve a certain shared task (Chemers, 1997). Often a leader is asked to develop and use this ability when placed in a leadership position within, for example, an organization or governmental body.

From the literature review, a few things became clear. The field of leadership and design leadership seem to now be moving towards the notion that leaders are not born, but rather they are developed.

If one were to use a personality-based paradigm for assessing leadership capabilities, then selection would be the main focus when looking at leaders. If one were to use a behavior-based paradigm however, then development would be the main focus (Higgs, 2003). This seems to have been a core topic of discussion for the field, however some recent results seemed to show that personality factors did not account for any variance in leadership effectiveness (Higgs, 2003). Joziasse mentions on the topic that he believes, together with Chopra "that developing leadership qualities is a matter of matching responses to needs and is a skill that can and should be learned" (2011 ;p.42).

Which is further compounded by the notion of Emotional Intelligence plays a key role in both selecting and developing leaders. Higgs (2003) mentions and empirically demonstrates that emotional intelligence and the effectiveness of leaders is linked, saying that it has even been proposed that emotional intelligence is a major factor underpinning the success of leaders in organizational environments. Data from the emotional intelligence domain might even act as a strong predictor of leadership effectiveness (Kerr et al., 2006). Kerr goes on to suggest that emotional intelligence based interventions could be deployed alongside the recruitment, selection, training and development processes of management. Yunker & Yunker (2002;p.55) mention that "successful leaders resonate on an emotional level with their employees, whereas dissonant leaders by contrast, have shortcomings that undermine their firm's potential for success".

When it comes to design and leadership, Gloppen argues that "successful leadership and strategic design may not be far from each other in attitudes towards problem solving". Leaders might even benefit from adopting a design attitude at times. She goes on to say that both leaders and designers have the capacity to be integrating thinkers with the ability to produce sophisticated syntheses. Creating a synthesis from large sets of data is a fundamental skill in both design as well as in business strategy. This might eventually lead to the field of design leadership and the field of leadership being informed by some of the same approaches, methods and other processes (Gloppen, 2012). Turner & Topian go as far as to call integrating design principles into leadership "a commercial imperative because it enables a company to differentiate itself from others, create and sustain competitive advantage and evolve into a world-class performer" (2002; p.9). They claim that design leadership is critical to business success because design leaders help to envision the future, operationalize strategies, assist in maximizing return on investment, guard the reputation of the business by shaping the customer experience, are responsible for both creating and sustaining environments of innovation, together with being responsible for integrating design within the business to support that innovation (Turner & Topalian, 2002).

This does make one wonder what exactly design leaders do. According to Joziasse (2011), they are good at envisioning the future, they are very capable of thinking strategically and they lead others by developing, inspiring and maintaining teams. They do this by constantly questioning and reevaluating the status quo, the existing core competencies and the relative competitive position of any organization. Design leaders are capable of balancing the exploration of new possibilities with the management of the existing design functions of an organization. These leaders are good at selling and embodying design by using the the correct business jargon (Joziasse, 2011). But even though the area of leadership has been studied very extensively (Higgs, 2003); "Little of substance has been published on design leadership (Turner & Topalian, 2002; p.1)".

Design management is often mentioned when looking into design leadership, but the field seems to agree that they, even though a mutual dependency exists (Gloppen, 2009), are not the same. Comparing the two might shed some more light on design leadership. Design management is in essence reactive, whilst design leadership is proactive (Turner & Topalian, 2002; p.1). Design leaders deal with the WHAT of design and tell the design managers WHERE they should go. Design management deals with HOW they are going to get THERE (Joaziasse, 2011). Without design leaders the executives would not be able to set the course and without the design managers they don't even know which vehicle to use (Turner & Topalian, 2002).

What is not clear from the literature however is how these design leaders should lead.

Lee & Cassidy (2007), together with Joziasse (2020) offer up quite the extensive list of principles of what a good design leader should do, whilst Calabretta et al. (2016) provides a higher level view by mentioning that designers should be humble in their leading while at the same time maintaining a delicate balance and choosing the appropriate leadership style for each identified situation, using a framework of vision and ownership.

The literature review covered the themes of developing leaders versus selecting leaders, emotional intelligence and leadership, design and leadership and design leadership.

In the end the field of leadership maintains that they "have little real knowledge of what is required for effective leadership" (Higgs, 2003; p.274), which leaves little hope for there to be consensus on how to be an effective design leader and what a designer should work on to become a more effective leader.

RESEARCH ACTIVITIES

In this chapter the research activities that were performed in order to seek answers to the research questions mentioned in the previous chapter, are reported and explained.

4.1 - Interviews

Interviews (Van Boeijen et al., 2014; p.47 & Byrne, 2001) with the user-group were prepared, scheduled and executed in order to gather data on how designers currently experience and thrive in leadership positions. The questions in these interviews were aimed at answering the research questions mentioned in the previous chapter.

For the purposes of vetting potential interviewees to represent the user-group of 'design leaders', a more practical definition was formulated:

> "These design leaders have to make decisions about which projects to take up and/or the direction of said projects and defending these choices, whilst still being involved with these projects."

Using this definition, people with academic backgrounds in design that were or recently were in leadership positions, at the time, were approached for an interview. This was done for practical reasons, as the design leaders had to be approached long before the literature review was completed.

Starting off, a primary batch of 26 potential design leaders and interviewees were approached via email or using linkedin. These interviewees were selected to be half academic and half non-academic design leaders. It was expected that most non-academic design leaders would be too busy and that the project would have to be focused on academic design leaders. In the end, almost all of the interviewees ended up being non-academic leaders. Most of the interviewees work in leadership positions within a wide variety of companies. An example of an academic design leader is someone who leads a design lab at the IDE faculty of the TU Delft. The second batch of interviewees was obtained by asking for referrals at the end of each interview.

In order to facilitate these hour-long interviews, an interview script was created (see Appendix C). This script included a small introduction to the topic and what kind of questions the interviewee could expect to be asked, together with the questions themselves and some followup questions. The protocol was followed during each interview and was rarely deviated from. Sometimes a question was omitted to keep the interview from running too long or because the question(s) were not applicable to the specific interviewee. All of the interviews were conducted using online conferencing software such as Zoom, Google Meets or Microsoft Teams. During these interviews, the student guided the interviewees through the questions, whilst continuously making notes. The interviews were also recorded to aid in the collection of data.

In the end, 21 interviews were scheduled and performed during the months of January and February 2021. 17 non-academic leaders, 3 academic leaders and 1 leadership coach (see Appendix C) were digitally interviewed.

4.2 Analysis

The notes made during the interviews, together with the recordings, were transcribed into digital sticky notes on a miro-board to facilitate further analysis (see image 3). The generated data was subjected to cluster analysis by continuously clustering and reclustering the transcribed post-its. After using the analysis to identify themes, relevant topics and stories; a design-space was created, by once again clustering the resulting themes, topics and stories. This design-space was later used to identify a design goal that emphasizes the richness of the interview data.

Image 3: sticky notes around questions; not yet clustered.

During all of the interviews, notes were made and categorized to fit with each question listed in the interview protocol. Using this categorization, the notes could then be clustered (Tassoul, 2007; p.86) around the respective research questions that were used to initially create the interview protocol and its questions (see image 4).
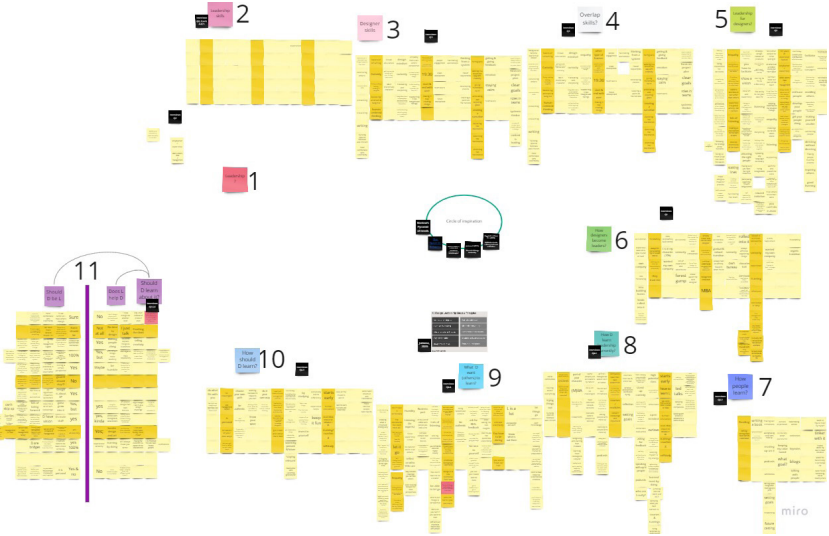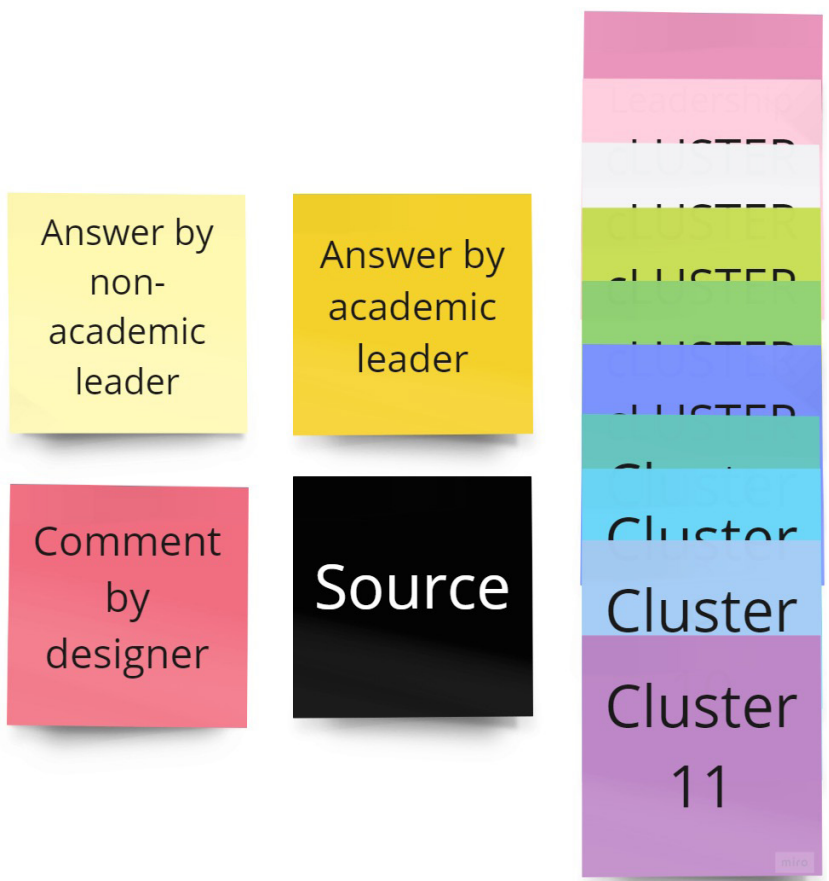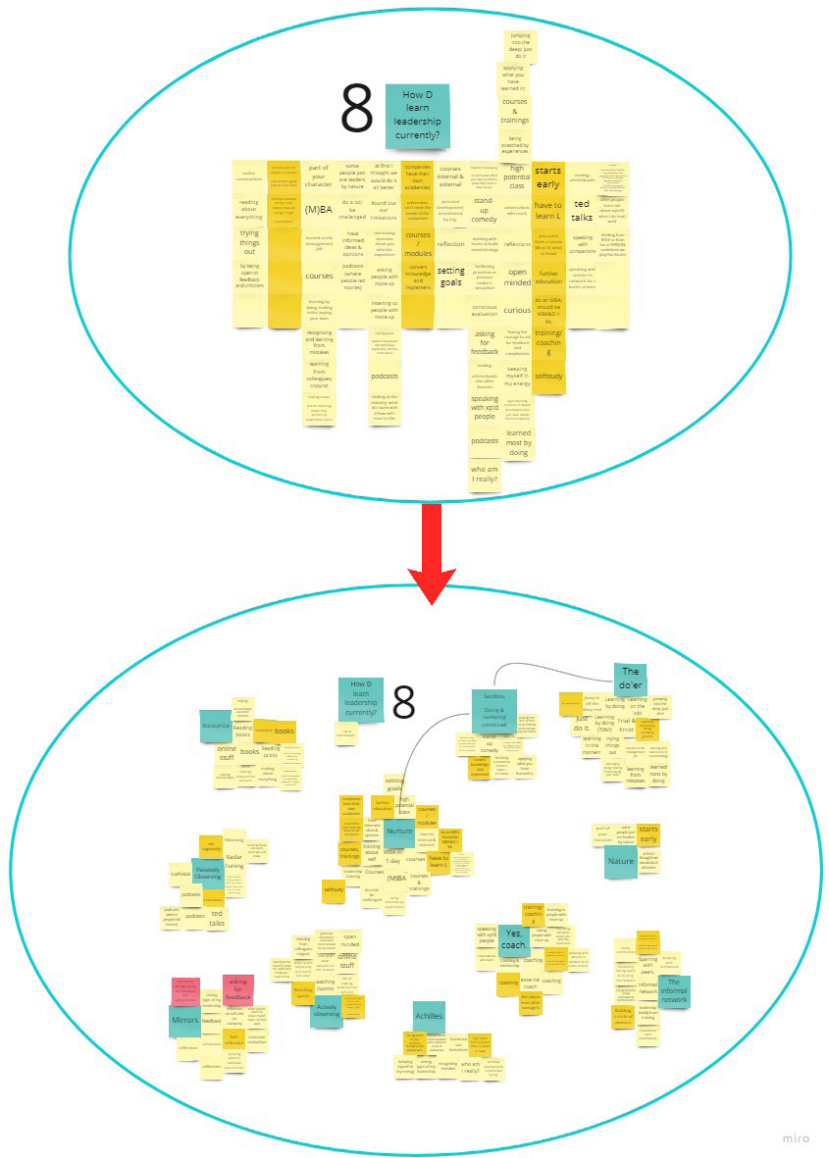
These color coded (see image 5) post-its were then clustered to identify themes in the answers of the design leaders (see image 6). Each cluster receives a title-name in order to represent the entire cluster and inspire the designer in his process.

Questions that arose, sources that were suggested and interesting answers that at first glance seemed outside the scope of the interviews, were parked in the middle 'circle of inspiration' (see image 7) so that they could later be re-introduced if needed.
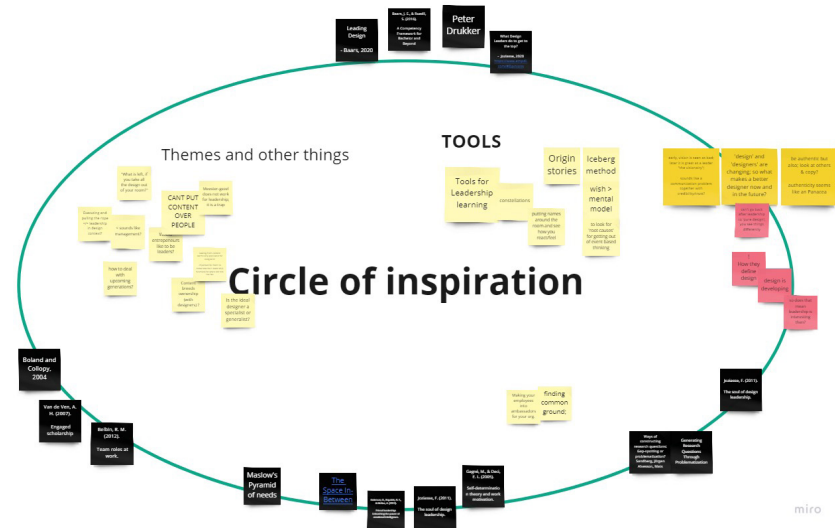
This process of thematic clustering analysis (Guest & McLellan, 2003) was repeated twice more. Once to include additional data from the interviews and literature, since the first round of analysis was done with approximately half of the interviews transcribed. The third round of clustering was performed to further identify relevant themes and stories, and to challenge and investigate apparent contradictions that presented themselves in the earlier rounds of clustering.

Using the themes identified, clusters were created that helped areas of interest to be identified. These clusters would then be infused with interesting insights and ideas that were recorded during the interviews, analysis (circle of inspiration) and supervisory meetings (see image 8). These insights were deemed interesting by the designer's intuition which usually points at deeper themes and questions, without these yet being apparent.

Image 8: design space 1.0; colors correspond to their respective research question; purple is ideas; yellow is additionally added insights.
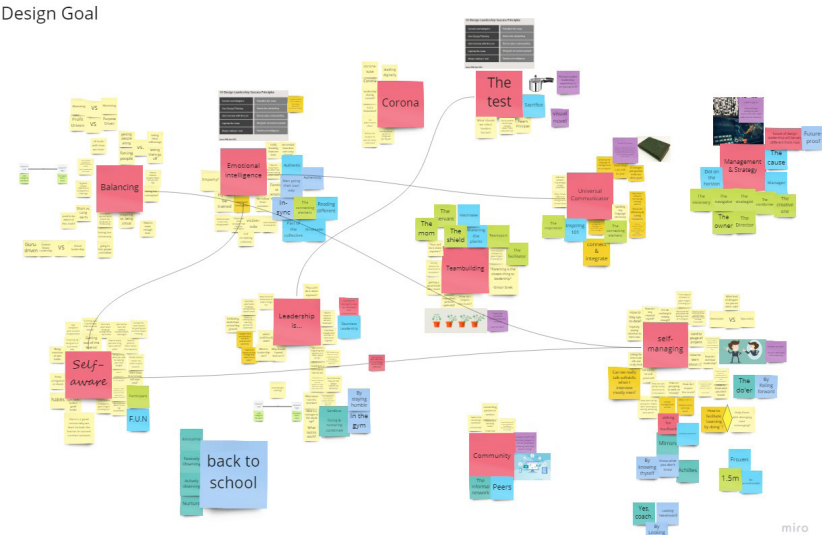
This design space was then used to develop a design goal that was clearly derived with the interview data at its base. It later became clear that there was a need for further synthesis through sensemaking (Kolko, 2010) of the gathered and generated data, which will be discussed in Chapter 6: Synthesis.

In the end, the data gathered from the 21 interviews was clustered multiple times around 12 research questions. These clusters produced themes that were used to create a design space, which produced a clear story from the data, for which a design goal could be formulated. This design space was later used for further synthesis.

5

RESEARCH RESULTS

DEVELOPING LEADERSHIP QUALITIES FOR DESIGNERS

RESEARCH RESULTS

5.1 - Interview Results

In this chapter the results of the research activities discussed in Chapter 4 are reported and discussed. The raw data, clusters, analysis and images can be found in Appendix D1.

So firstly, meet the design leaders! The design leaders were asked to describe their specific tasks, roles and reports. Using this data, they were put in a framework (see image 9) to visualize the kind of people that were interviewed for the purposes of this project.
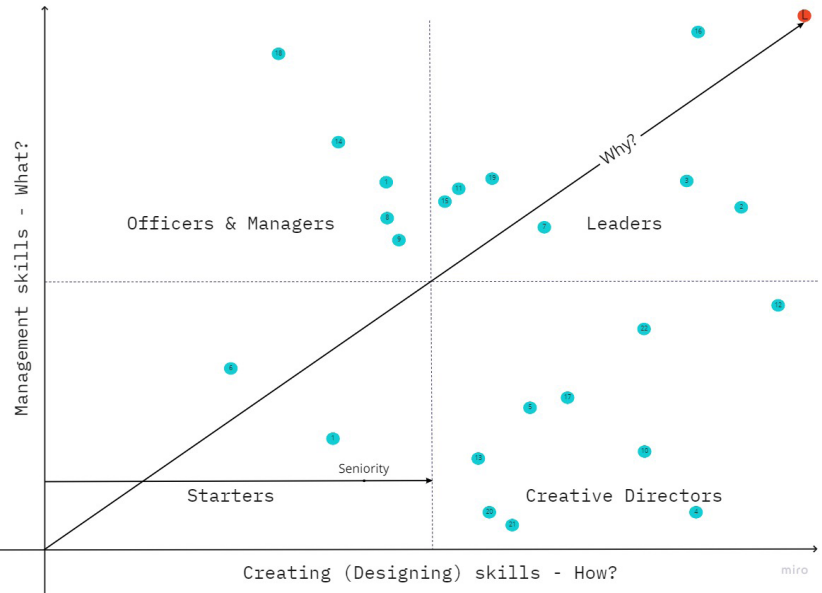
This framework assumes that the best leadership is about having the competency of bringing a clear WHY to the table, which is what resulted from the interviews. On the X and Y-axis we see the other parts of the golden circle (Sinek, 2009); WHAT and HOW. The interviews revealed that designers often felt that they were missing some of the managerial skills that one might learn by doing an MBA, represented here by the WHAT. The creating or designing skills are represented here by the HOW. In order to effectively communicate the WHY, one would need competencies in both the HOW and WHAT. This framework also highlights an interesting apparent contradiction that came forth during the interviews. Being able to bring the WHY often put in the same corner as being visionary, and rightly so. However, some people with ideas about the WHY are hailed as great visionaries, whilst others are promptly ignored or seemingly misunderstood. This was often cited as confusing and frustrating to designers, who love to ask questions and involve themselves in the conversation about the WHY. This is where we talk about seniority. Having the competencies or the inclination to talk about the WHY is never a bad trait. It is however very important to realize the timing of when and to whom one talks about the WHY. If one is relatively inexperienced and new to the field or company, people will put less gravitas in one's words and the others will be less likely to (put in the time to) understand what one is talking about. This is what causes frustration and confusion. Using the same competencies as great leaders however, do not make you into a leader. Having others around you that trust in your person and your ability to use those competencies, make you into a leader. Simply said, you need to build rapport and credibility with others, which is where seniority comes in handy.

When asking design leaders about the designer skills that helped them in transitioning to leadership positions, they cited a lot (see Appendix D1), but most interestingly, there were lots of HOW and WHY related traits. For example: visual communication skills, the willingness to explore and stretch boundaries, being user-focused or even the ability to use creativity in a structured way. As you now might expect, the things that impacted the designers negatively revolved mostly around the WHAT and WHY related traits. Designers are perceived as too arrogant, too unpredictable, wanting too much too fast and not focusing on the execution aspects. These perceptions should not surprise us in light of the framework that was just introduced. The designers are perceived as arrogant, unpredictable and wanting too much, because they are already talking WHY, when they haven't built up the seniority to be able to do this effectively. Compounded further by them being perceived as not being execution-focused, since their designerly skills mostly revolve around the HOW and not the WHAT of execution. Shortly said, the designers lack in the WHAT department, which makes it hard for them to communicate their WHY.

When asked what the design leaders thought leadership was all about, the answers were seemingly all over the place, so we will leave that topic for the next chapter: Synthesis. It did become clear however, that designers are not special in any way, when it comes to becoming leaders. It seems to be a combination of character, affections, purpose and luck that steer people towards becoming leaders. Nobody is born to lead, but some are born not to lead, which is also supported by the literature. When considering who has a leadership position, we should imagine everything going awry. When everything is going wrong and chaos is taking the upper hand, people look to their leaders to guide them through. Especially in the practice of design, leaders bring order so that others may dare to explore the chaos.

So what about becoming better or more effective design leaders? Short version, design leaders say it is about being authentic, which is an answer that would pop up a lot to the point of becoming somewhat of a panacea for any leadership query. "Just do it" was a close second, which tells us that design leaders value learning about leadership by experience and ties in well with seniority being a factor. Lastly, design leaders love their informal networks. They realize that "You just don't know what you

don't know", which they love to solve by talking with their peers, mentors or coaching about anything. This emphasizes that leadership is a teamsport and that you can not do it alone.

To round it off, the project was started under the assumption that designers could learn something from the field of leadership, so naturally the design leaders were asked if they thought being a leader had made them better designers. This question never really got a clear answer, but did reveal that each design leader would define 'better designer' or even 'designer' differently. This highlights, as does the literature, that the field of design is still changing and developing. Generally, the design leaders thought they became worse at being a traditional designer, but became better at providing value to design processes.

5.2 Envisioning a Design space

The data gathered from these interviews has offered some answers to our research questions.

Insights and areas of interest that were found after the first round of analysis, were used to envision a solution space.

Using the data gathered from the interviews a design space and challenge was formulated. This was done through clustering the insights on those questions, together with the results from certain research questions (Appendix D1).

Image 10: Clusters on the question: "What are your perceived (current) day-to-day challenges, when it comes to leadership?" together with the results of research question clusters 8, 9 and 10."
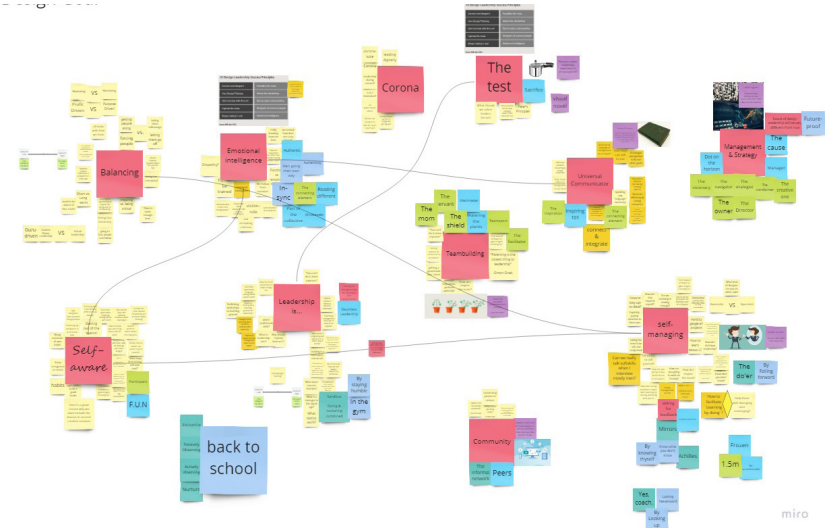
In this framework we deduce that a design leader needs to build credibility, trust, communication and management skills to get into and stay in a leadership position. Through performing thematic cluster analysis the following themes emerged.

A design leader needs to work on their soft-skills, which are spearheaded by terms such as emotional intelligence, self awareness and self-management. In order to develop leadership competencies around communication, building teams and their environments, strategic decision making and balancing all of their tasks and commitments. This is something they work on through both academic studies and constantly challenging themselves.

This design space leaves us with a lot of questions. Should the project focus on supporting the design leaders in consciously working on their soft-skills, facilitate them in performing specific tasks or should it try to indicate which designers are suitable to become future design leaders?

To further converge towards a design goal, further sensemaking was necessary.

SYNTHESIS

6.1 Discussion on design leadership

The analysis answered the research questions and brought the project closer towards identifying a solution space which can provide a design goal that both inspires the designer and is likely to have an impact on the user-group. For the purpose of getting to a design goal for which one could actually design a solution or intervention, a round of synthesis through sensemaking (Kolko, 2010) was performed through multiple rounds of clustering and verbalizing what the data was actually telling us.

In order to verbalize what the data showed, the following questions were asked again and consequently answered (see image 11), whilst paying attention to the interdependencies of these answers. The raw synthesis can be found in Appendix D2.

What do designers think of as leadership?

Designers clearly subscribe to one of the plethora of leadership forms that boil down to leading on an even level compared to their followers. Most design leaders claimed to be leading through content, creatively or even transformatively, whilst others would proclaim themselves servant leaders. Only a small subset of the design leaders interviewed mentioned the need or preference for directing and hierarchical status. The interviewees felt like a more level leadership style fits better and is in part caused by the fact that their followers are usually highly educated. They are not leading "unmotivated factory workers", but employees that can be trusted to do a capable job. They enable their fellow employees through providing focus, development, support, a safe enough environment and keeping them on track. Listening is a key skill to discover what drives others and what they want to achieve, and then, how can I connect their ambitions to that of the common good? Building those bridges is what it is all about.

Focus is provided by offering a clear dot on the horizon that they can all strive and aim for. Design leaders often take the first step, so that the rest can follow closely behind. Development is offered by bringing the followers interesting jobs, courses, training and positions in a personally tailored manner. The leader uses his human skills to make sure that these people are in the right place for both the company and the followers themselves. The design leaders support their colleagues by making sure they have an environment that they can work in which is relatively safe and orderly, so that they can go out and deal with often chaotic projects. One way of providing order is by setting up the frame and boundaries, within which their people can perform their best. One leader said that he thought that design projects are 'Chaordic processes', which sublimely captures that design is often messy and unclear, but that the designers as humans still need the security and order that come with having a job, to function.

This is leadership for Designers.

What is leadership for designers, according to the data generated by the interview data?
What do they value and what are their leadership activites?

Image 11: Prcoess of synthesis through sensemaking visualized.

How designers want to improve their leadership.

How do designers want to learn about leadership?
What does the interview data tell us?
What does the literature tell us?
Is there a research-practice gap to manage?

What designers want to improve in their leadership.

What do designers already work on?
What do they value working on in their leadership?
Which important area's do they already work on and on which do they not already work on?

What problems designers experience in their leadership.

Which problems do designers cite, where we can support, empower or facilitiate them through a designer intervention?

DESIGN GOAL

The design leader, lastly, keeps them on track by making sure that everything done by his people is in line with the corporate strategy. The design leader guarantees the corporate strategy, whilst his people can focus on the tasks at hand.

Seniority was not mentioned by the interviewees as a prerequisite to leadership, which was unexpected, but was often cited as one of the reasons the designers ended up in leadership positions.

In the end, a design leader is more like a coxswain, instead of a captain. They agree on a route and keep the team on route to their destination, whilst trusting the rest of the team to do the rowing by themselves. Leadership emerges when all leverage has disappeared.

How do designers end up in leadership roles?

During the interviews, I asked all of the participants how they ended up in their leadership positions and whether this was on purpose or accidental. A few cited that it "just kind of happened" and that leadership was never a goal in and of itself, whilst on the other side, a few more participants cited that they purposefully went after a leadership role. Reasons for becoming leaders were: Money, gaining more influence and then being able to experiment and wanting to own their own design bureau.

By far the most participants however, cited that it was a bit of both. They commonly felt like they slowly found out that such a position suited them and that their interests aligned with being in a leadership position. Mix seniority with having "the right character" and we have a recipe for a future leader?

In the end, not a lot seems to differentiate designers from others, in how they end up being in leadership positions. Designers add value to any leadership team by virtue of diversification. It is noteworthy that their willingness to think differently aided them in being leaders, but not in becoming leaders. Being visionary is only appreciated when you have already built rapport with your colleagues.

How do designers currently learn (about leadership)?

Learning about leadership starts and ends with the design leader's social network. Most participants reported that they actively search for people to learn from and with. Be it a coach, mentor or an addition to their (informal) network.

From there, there are two lines of thought which at first glance, seemed like complete opposites. Interviewees reported that one either needed to 'just do it', learn by trial and error, and that learning leadership from a book was not practical, or they reported that one really needs additional formal education in the form of an MBA or leadership courses. I now hold the belief that both sides are correct in this apparent contradic-

tion and that they are actually talking about two sides of the same coin. Putting in the hours and learning through the experiences is only helped by grounding oneself in 'book-knowledge'. This way, it is easier for leaders to 'get out of the event' and understand what is really going on. In the end, it is hard to know what you do not know, so reading about certain difficulties others have encountered primes you to pick up on those earlier than you would have otherwise.

The main practice the participants reported, outside of talking to peers or mentors, is reflecting and actively asking for feedback to reflect on. They value learning about their own leadership and being open to criticism. Being open to confrontations or other clashes with the unfamiliar would help one grow into a more whole person, which is deemed essential for being a good leader, or at least becoming a better leader. Other current practices for improving their leadership capabilities are active and passive observation, which basically includes trying to learn something from any kind of stimuli. Popular stimuli included reading books, online articles, listening to podcasts and watching sports.

One of the interviewees commented during our interview that "Coming back home is very different from having stayed at home". Gaining more knowledge and experience, about your field, your company or yourself, will grow your value as a leadership figure.

In the end, learning about leadership is like learning a completely new language. If you move to China without speaking a word of chinese you will have a very hard time picking up the language without deliberate practice. On the other hand, if you stay in your home country and study a bit of chinese in your free time, your progress will also be fairly slow. But if you were to move to China after having taken some lessons beforehand and keeping up the lessons whilst living there, your chinese will improve at a much faster pace. It is the design leader's responsibility to walk on the edge of the coin and continuously put their ongoing education into practice, whilst actively asking for feedback and reflecting.

What do designers want to learn (about leadership)?

So what do they work on, when they work on their leadership? Some of the things design leaders work on were already alluded to in the answers we got to the previous questions. The things design leaders do to develop their leadership qualities mostly revolve around developing themselves. One of the activities that relates to developing themselves, that came up in larger volumes, is putting themselves in uncomfortable situations, deliberately, in order to have their views challenged and force themselves to continuously switch perspectives. Like mentioned earlier, this is usually done by actively looking outside of your bubble using various media like books, sports, people etc. This could be summed up by saying they focus on their seniority.

Another activity that came up frequently was guarding the authenticity of the design leader. Being authentic is a key element to gaining credibility as a leader. Once people perceive you as capricious, it is very hard to get them to follow you, especially when a situation comes up. When a situation comes up that heightens the perceived chaos so much that people can not deal with it anymore, they turn to the leader. This leader is the one that needs to bring some order back into the situation. Put some yin back next to the yang. If one is perceived as capricious, people tend to trust them less in these key situations, which makes authenticity important.

This leads very well for the next activity that leaders work on, which is working on their emotional intelligence (Goleman,1995). Which is a broad term for working on their human skills. They start with learning about themselves; their own strengths and weaknesses. When they understand the value they add, then they can figure out what kind of team they need to compliment them. Then when they learn more about themselves, it opens them up to learn more about others as well. It enables them to reason how a person would feel and think in a certain position, so that they can give a more empathic response which aligns expectations from both sides. Aligning these expectations is important. When the leader asks for X, he has a certain expectation from his people to deliver X. When they are properly in-sync, something that fulfills the criteria of X will be delivered. When the leader and people are not speaking the same language, any letter of the alphabet can be delivered, to much frustration on both sides. So when a design leader talks about speaking the same language, it can mean professionally, academically or emotionally, which are all highly relevant since they are often "the connecting element".

This leads into another activity that revolves around self development, in actively listening to peers and asking for feedback. Design leaders really value the perspectives their followers can provide them with and this also applies to themselves. It is hard to understand what impact you have on other people, unless you actively seek out to uncover it.

The last activity that was already hinted at in the previous questions is about the future. The leaders have to put a dot on the horizon. They communicate the WHY. This serves the double function of inspiring themselves and others by giving them something to strive for and staying relevant in the future. Having a vision puts everything else in a certain perspective. Some participants remarked that the future of design leadership is going to be very different from now, looking at how complex the field of design has gotten and how much it has changed over the years. Staying relevant in such a field is definitely a challenge, which is a theme that keeps rearing its head.

Activities or realisations were also mentioned during the interviews that were barely ever explicitly mentioned previously. The first thing most leaders immediately mentioned is that you have to know what you are getting into when you become a leader. It is a full time thing that does not

end when you come back home, when a situation arises, you have to act. You have a responsibility to your people. This goes together with the realisation that you have to let go. A leader can not take things too personally, whilst also not being untouchable, which is a fine balance to strike. For example, a failure has to still affect you, but not in such a fashion that your other duties are affected.

Leaders also mention that you have to be daring, usually in the context of being vulnerable and humble. A leader has to dare not to know. Design leaders value this practice because it brings them to the same level as the followers.

Design leaders also work with and within teams. Various activities relate to building, leading and managing these teams effectively. Firstly, they have to focus on matchmaking. Even though disciplines like to work with their own kind, leaders know that multidisciplinary teams, more often than not, complement each other better. Positions and roles really go before people here, first the leader identifies which roles they need filled to reach a certain dot on the horizon and then these roles are filled with (new) people. Once built, these teams and their people need to be continually developed, which is where design leaders put the emphasis on putting others into the limelight and letting them grow. "There are no bad people, only people in bad situations." As a leader, it is about being able to serve the common interest in any given context.

Lastly, hitting on the framework introduced in Chapter 5: Research Results, the leaders note that gaining the necessary knowledge on management and being able to really speak that language is essential. Being able to bridge the gap between silos in the company and being a connecting element in this way, is one of the things that make a leader effective in enabling his team(s) to perform at their best.

How should designers learn (about leadership)?

So what do they think they should do, and already reportedly do? Front and center is the focus on self. The interviewees mention that you should start by really learning about yourself, so that you can later understand and therefore support others. It is important to seek out what you do not yet know, since it is "hard to know what you do not know". Saying "it is hard to know what you do not know" was actually quite amusing, since some design leaders seem to actively seek to stay in their bubble by only discussing leadership with those few trusted peers. A leader should surround themselves with smart people which introduce the design leader to new knowledge, situations and stimuli to learn from. It is sometimes all about the people around the leader. On one side of the coin the design leaders think that experiencing the actual struggles of practicing leadership by trial and error is something that can not be taught, the actual experience and seniority that come with it are invaluable to a leader. On the

other side, people who are more involved in the academic side of the field, advocate that a formal education still has a lot of value to add to improving one's leadership qualities.

This does beg the question, what do they say a design leader should do to learn about leadership, but do not currently employ? Three things. **Staying humble, staying true to yourself in an effort to be considered authentic and staying relevant.** The participants report that designers can be a tad arrogant, especially in how they come across to others, in thinking they know or understand things fully, but often it is the case that they do know a lot of things whilst lacking the depth needed. This often shows in human skills, where the designer can become arrogant thinking they understand people because of all the human-centered design work they have already seen and done. Knowing a lot of things is very helpful when talking to many other disciplines, but that is where the leader should restrain themselves. Let the experts do their thing, use your knowledge to speak their language and speak with them on their terms, ask the right questions and set the right expectations, but do not tell them how or what to do. This leads to being humble as well. Being able to listen to people as if they know something you do not yet know is something that will aid in having a truly empathic response towards the people the design leader is working with. This is, again, why design leaders talk about actively having people around that are smarter, more knowledgeable and/or more experienced. They challenge you, they humble you and they do better work than you in their respective fields. Lastly, the participants cite that balancing the present and future concerns is a constant struggle that should be taken into account when working on one's leadership. Becoming a leader that can deal with upcoming generations and the modern world, one might even say, staying relevant.

In the end, the leaders are very aware of their position regarding their followers. They say that keeping the rapport with their employees in check is important. They need to treat the followers as adults, to be treated as an adult themselves. Once they start behaving a bit like a parent, the followers will follow suit and put themselves in a child-like role.

Using this synthesis a clear picture of the current situation of design leaders was developed that could then feed into formulating an inspiring design goal.

6.2 Formulating the Design goal

Using the current situation developed through synthesis, a new design space could be envisioned and with that a desired situation. In order to get from the current situation to the desired situation, a design goal was formulated.

Currently, design leaders that lean more towards the creative director side of things (see image 12) do not see other leaders as peers in the same way as they see their designer peers. The design leaders really like conversing with their peers, mentors and coaches about their leadership struggles, but only within that somewhat close circle. I think that they would benefit from including leaders with different non-designer backgrounds in that circle. According to Edmondson et al. (2019), leaders should also actively consider others' points of view. People from different organizational groups do not see things the same way and leaders of successful teams were found to have the unusual ability to assume other people's viewpoints.
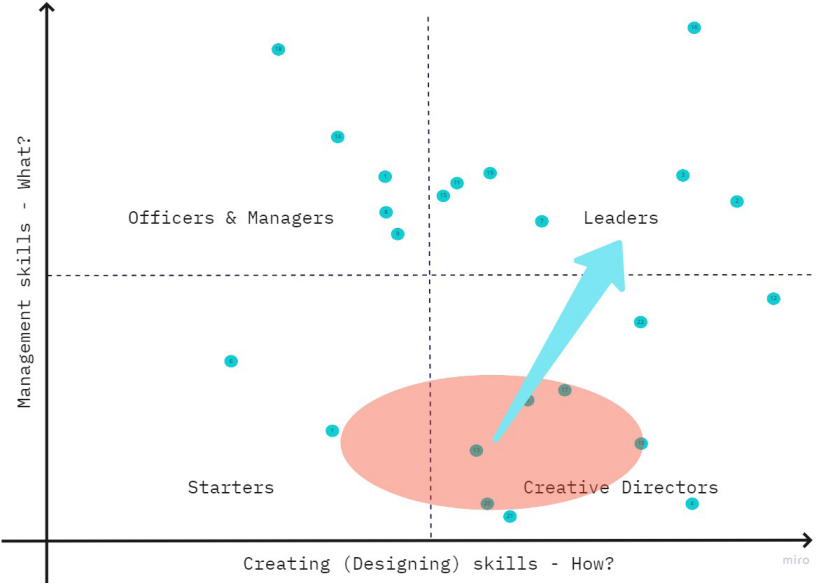

Image 12: Leadership competency framework; highlighting the group and in which way they will move.

In order to achieve this, a design goal was formulated:

I want to help designers* to temporarily shift their perspective, towards other leadership styles.

*that currently reside in the creative directors quadrant.

The design goal is supported and detailed by the list of requirements (see Appendix F), but is not included here because it is just that, a long list, where the design goal already captures the most important and relevant

requirements for this report. With this design goal, designing the toolkit for empowering design leaders, that we set out to do in the problem definition at the start of the project, could be started. The design goal used to include the word 'independently' to signify that I wanted to make it usable for one person as well, but this shifted the focus too far towards it being only usable by one person at the time. Instead, a requirement was added to the list of requirements (Appendix F), stating that the product should be usable by one to five people.

In the end, a desired situation was envisioned where designer leaders see leaders with other backgrounds as peers. For the purpose of realizing a part of this desired situation a design goal was formulated.

7

IDEATION AND CONCEPTUAL-IZATION

To challenge and iterate upon the design goal, ideation and concepting, rapid prototyping and testing activities were performed. These led to a more robust design goal and provided insights that were used to inform the list of design requirements. The insights gathered and the list of design requirements were then used to design a concept of an intervention that would satisfy the design goal. The ideation and conceptualization phase was conducted in the following manner: see image FIXME. An agile approach was used where a four-day design cycle was used to have a tested concept at the end of each week. The ideation, rapid prototyping and testing, the list of design requirements and the concepting outcomes will be respectively reported and discussed in this chapter.

Image 13: Agile style of working, much akin to the DfI course "Interactive Technology Design" (ID4220) taught at the TU Delft.

IDEATION AND CONCEPTUALIZATION

REFLECTING

TESTING

IDEATION AND CONCEPTING

PROTOTYPING
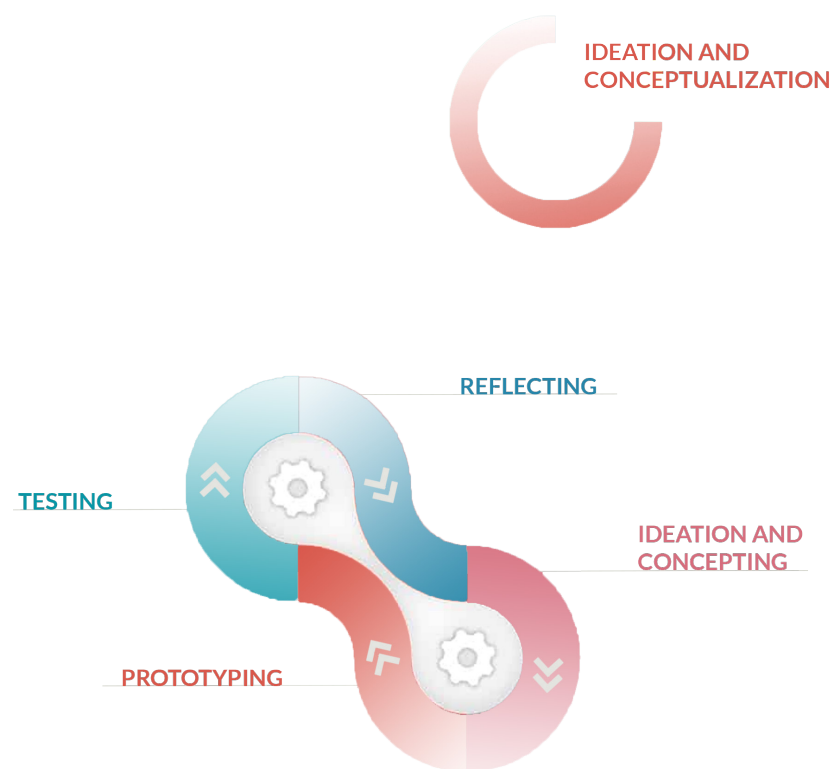
The first step in this cycle was reflecting, which was used to gain a new perspective on the design goal and prepare the rest of the week. The second step was ideation and conceptualization, where ideation techniques were used to come up with novel ideas and then the most potent idea was developed into a concept that would be testable. The third step was prototyping, where the concept would be embodied and the important elements prepared for testing. The fourth and last step was testing, where the prototyped concept was tested with design students.

7.1 Ideation activities

In order to generate ideas that could lead to promising concepts that could in turn satisfy the design goal, ideation was performed as part of the weekly design cycle mentioned above. Four ideation sessions (see Appendix E) were performed which will be reported in this subchapter.

With the goal of generating concept ideas, ideation methods were chosen and performed. The results of these ideation sessions were used to design concepts that could then be prototyped and tested. Different methods were chosen to learn about the chosen methods and use the different angles the methods provide to come to a wider variety of concept ideas. The following ideation methods were used:

- Creative session with brainwriting as a purge and matic as the generative technique, ending with c-box as the convergence method of choice. (6 people)
- Brainwriting session with HKJ's (2 people)
- (Verbal) Synectics (2 people)
- Brainstorming into force fitting (2 people)]

Creative Session

Firstly, a creative session (see image 14&15) with a total of six students with backgrounds in design and mechanical engineering was hosted. The creative session focused on the emotional intelligence of leaders and online meetings, which is what the design goal focused on at the time. A creative session was chosen for the purpose of rapidly gaining new perspectives on the problem as given.


Image 14: creative session.

During the facilitated session brainwriting (Tassoul, 2007; p.54 & Van Boeijen et al., 2014; p.119) was used to purge the participants of their preconceptions on the problem as given. The problem was then reframed to a problem as perceived. Matic (Tassoul, 2007; p.72) (see image 15) was then introduced as a generative technique to diverge and generate new ideas and perspectives. A C-Box (Tassoul, 2007; p.87) was then used to converge towards the most novel and easy to prototype ideas. The outcome of the creative session was primarily that the design goal was still not in a good place and was not inspiring to the designer. This sparked the second wave of synthesis that was discussed in Chapter 6: Synthesis.

Brainwriting Session
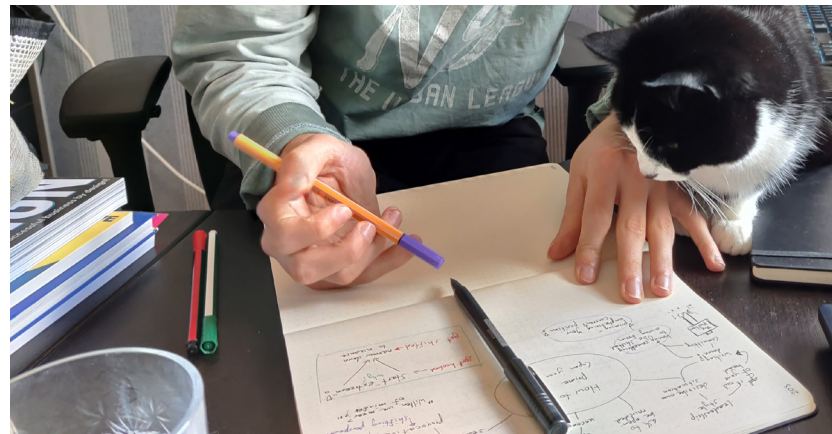
Secondly, a brainwriting session (see image 16) using how-to's (Van Boeijen et al., 2014; p.127) (HKJ's) was performed together with a peer design student. This session focused on how one can change their perspective, how to prime and sensitize someone and other types of leadership that might be interesting or triggering for design leaders. Using the ideas generated around these topics, concept ideas were devised.

Synectics
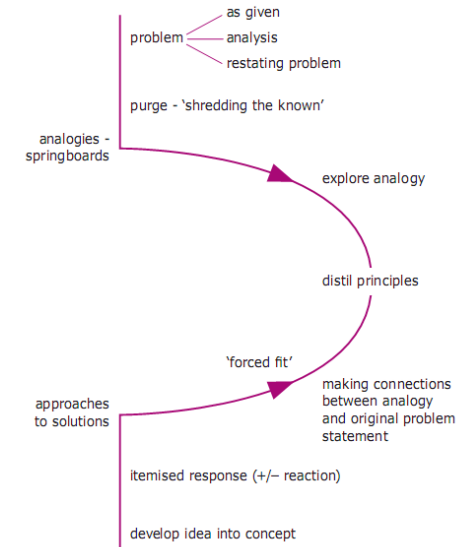
Thirdly, Synectics (see image 17) (Tassoul, 2007; p.64 & Van Boeijen et al., 2014; p.115) was used in a roleplaying (Van Boeijen et al., 2014; p.157) (verbal & physical) fashion together with a peer design student. This session focused on where people usually (have to) shift their perspective and how it makes them feel. By thinking of analogous moments or scenarios where one wants or even is forced to change their perspective and then force-fitting (Tassoul, 2007; p.67) them back onto the design goal, new concept ideas were generated.

Brainstorm Session
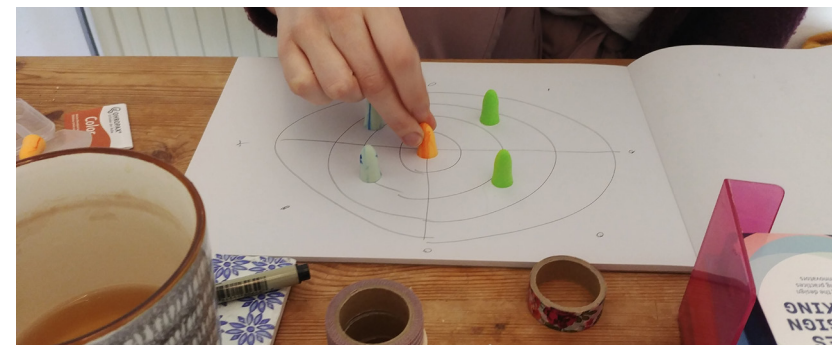
Lastly, a brainstorm (see image 18) (Tassoul, 2007; p.53 & Van Boeijen et al., 2014; p.117) session was performed with a peer design student on what kind of physical interactions would be attractive and inviting for the user, inviting them to play around and be engaged by the intervention. These ideas were then force-fitted onto the design goal in order to come to new concept ideas.

In the end, four ideation sessions were completed and concept ideas were generated.

7.2 Concepting and testing

To get closer towards a concept design, three concept ideas were prototyped and tested. The insights from these tests were used to tweak the concepts and eventually add to the list of design requirements. The three tested concept ideas and the generated insights were reported and discussed below.

Using the generated ideas from the ideation activities described previously, three concept designs were chosen to be prototyped and tested with participants that were available on short-term notice. These participants were design students that were active in boards for student and study associations. The participants reported seeing themselves as leaders, when in those specific roles. These were chosen because they were available on short notice and thus deemed sufficiently close enough to the user-group, given the time-to-test.

Back2theFuture Concept

This concept came to be after the ideation session using synectics. The scenario that was force-fitted to the design goal was of 'someone trying to understand why others would be offended by black pete (zwarte piet)'. Using the insights and ideas gathered, a concept was developed that follows the following linear principle: image 19.

The Back2theFuture concept attempted to shift someone's perspective by challenging them to play out a given scenario and then reflect on it.

This was done in one of two ways. In the first way, the user was challenged (see image 20, top left) to play out a given scenario (see image 20, top right) how they think it happened or would happen and then to repeat this scenario with an added modifier, such as changing the character traits of a person in the scenario or not being allowed to use certain words, phrases or sentences. Afterwards they would be asked to reflect on their experience and the differences between the two scenarios, using specific questions that aided them in reflecting (see image 20, bottom left).

The second way was fairly similar. The given scenario would have to be played out once and then the user would have the challenge of explaining how and why people acted in the scenario to two different imagined characters. For example, they would first explain an argument they had in the scenario, to their former boss and then they would explain it to a five-year old. Afterwards the participants were again asked to reflect on their experiences and the differences in their explanations, using specific questions to help them reflect.

In both variants of the concept the participants were asked to draw a card from a pile of challenge and scenario cards. Three cards with the questions for reflection were also supplied.

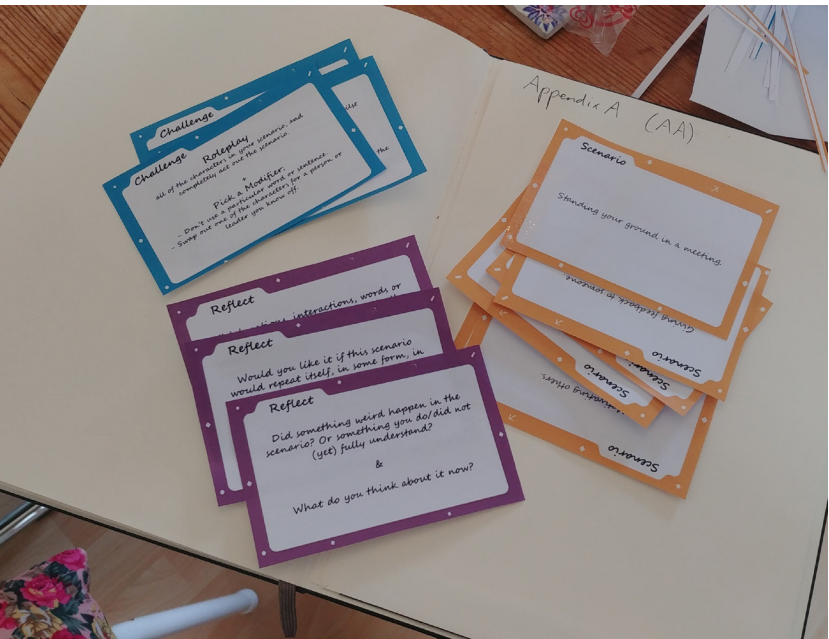Image 19: Back2theFuture concept linear principle.

Image 20: Blue cards (top left) are challenge cards, yellow cards (top right) are scenario cards and purple cards (bottom left) are reflection cards.

SPECIFIC REMARKS

Scenario

Giving feedback to someone.

OR

Receiving feedback from someone.

Challenge

Roleplay
all of the characters in your scenario, and completely act out the scenario.

+

Pick a Modifier:
- Don't use a particular word or sentence.
- Swap out one of the characters for a person or leader you know off.

Exercise too vague

Reflect

Would you like it if this scenario would repeat itself, in some form, in the future?

&

Would the others involved in this scenario also not mind this?

Reflecting questions and having to write the answers down.

Reflection cards seemingly on the same level as the other cards.

GENERAL REMARKS

- Roleplaying is too tough of an exercise, puts the bar too high.

- Picking a card randomly adds to the challenge aspect.

- Combining variants of explaining and roleplaying did not work.

3P Concept

Using the insights gathered during the brainwriting session illustrated above, a concept was developed that relied on the following circular principle: image 21. This principle was developed during the brainwriting session, drawing from analogous situations where one had to change his perspective or had his perspective changed. When overlaying and comparing these situations the principle of priming, positioning and pushing became clear.

The 3P concept attempted to shift someone's perspective by putting an emphasis on first priming the user to have an open mind. This was done by first, asking the users(2) to physically move themselves into a position
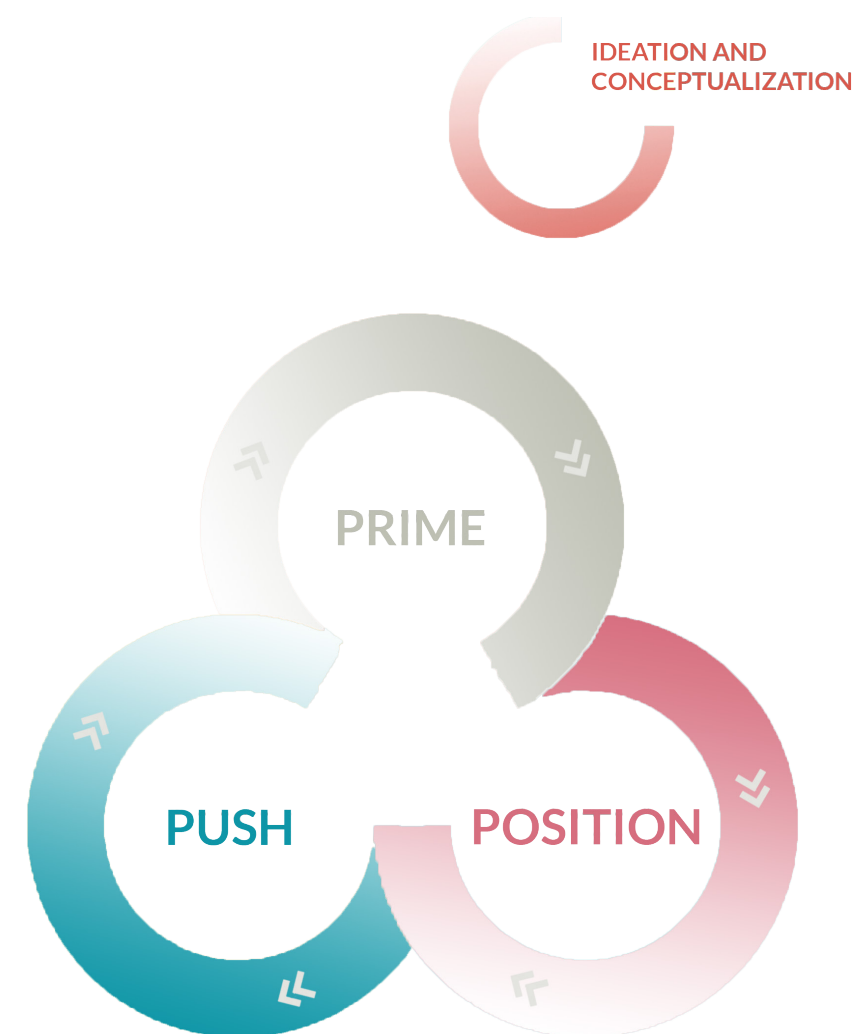
IDEATION AND CONCEPTUALIZATION

PRIME

PUSH

POSITION

1

2. **Please enter an environment that is new to you. (for example, sit under your desk).**

1. **Please open your mind; you might learn something you did not already know.**

where they usually do not go, such as standing in front of the table instead of sitting down, or sitting underneath your desk. After the participant had physically moved, they were reminded to keep an open mind and that they might learn something they did not know before (see image 22).

Then the user was asked to take a position, both consciously and unconsciously on their leadership and the leadership activities they executed recently. This was done by asking the user to rate the importance of six leadership characteristics in their leadership activities (see image 23) from the last week or few weeks. The rating was done by making the participants either move sliders to indicate the importance of each characteristic, rate them from lowest to highest or divvying up 20 full points between the six characteristics.

Then finally the user was pushed off their position with the goal of this push temporarily shifting the user's perspective. This was done by
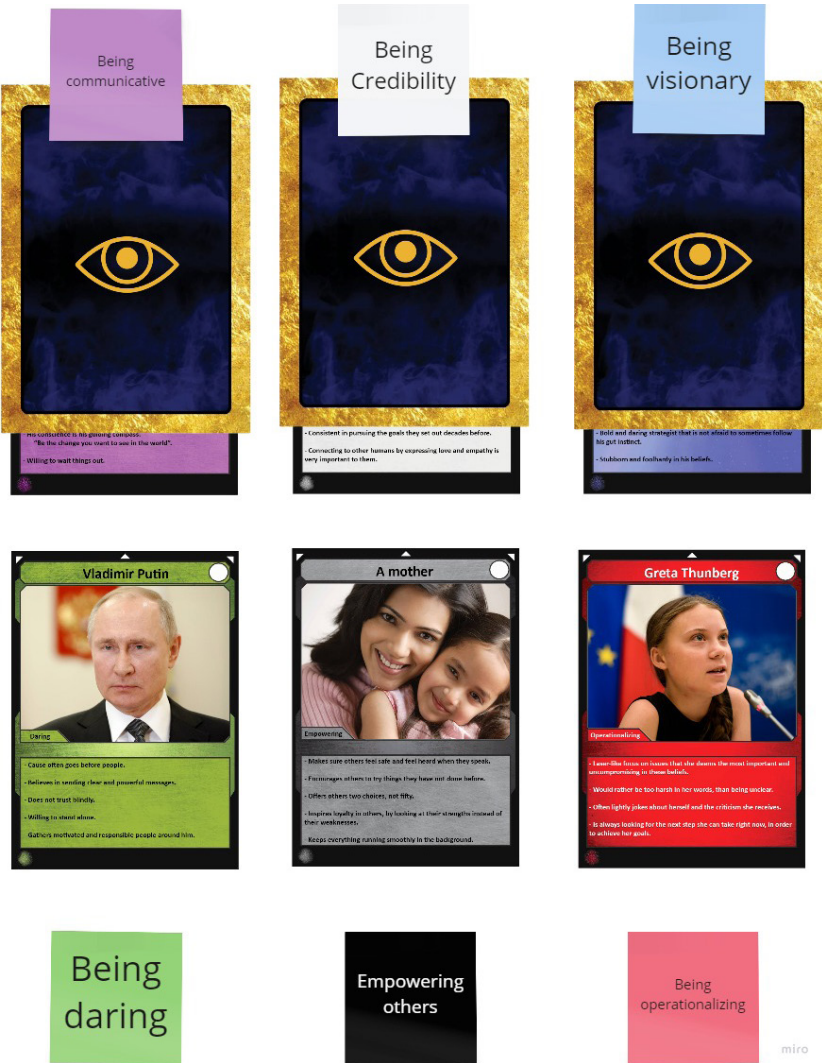
Image 23: Positioning part with rating the leadership qualities.

Image 24: The decks with a few cards revealed.

having the participants draw a random card from one of the six decks available, with each deck representing one of the characteristics, without them knowing what would be on the card. The chosen card would then reveal a leader or leadership figure(s) that was in some way exemplary for the chosen characteristic (see image 24). The participant would at that point, be challenged to take a week in the chosen card leader's example where they would try to think what this leader would do in their position,

SPECIFIC REMARKS

Physical action before mental action.

Sliders for ranking.

Finite pool of points for ranking.

Unclear how to pick a deck.

Actionable tips included on the card.

Setting a reminder is also the first action of the challenge.
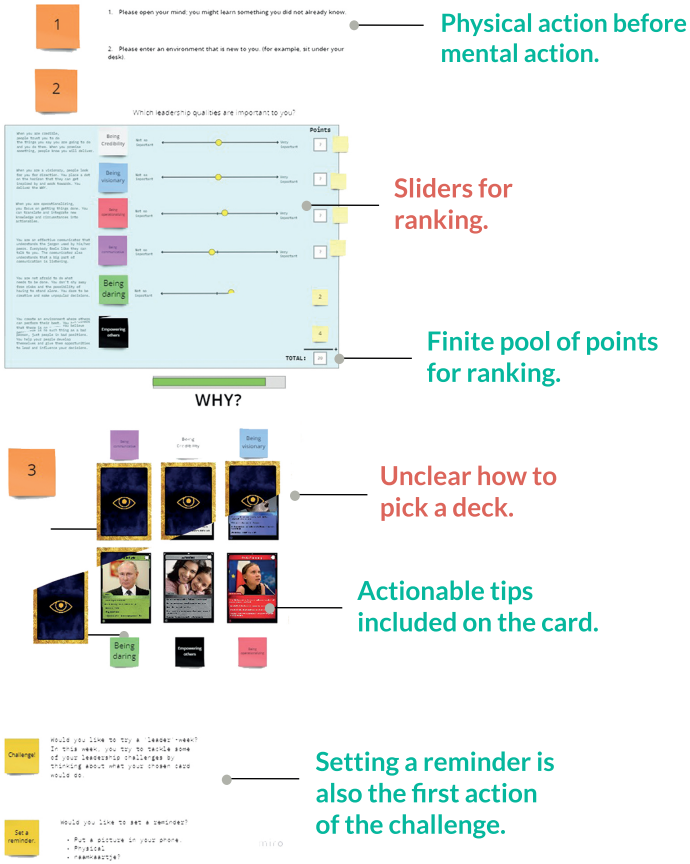
GENERAL REMARKS

- "This week" is easier to reflect on than "in general".

- Expectations have to be set for what is on the cards.

- Digital and physical reminders are both possible.

during some of their leadership activities for the next week.. So for example, one would be challenged to take a Putin-week. To help the participant get started, they were asked to create a reminder by either drawing on a post-it to have a physical reminder, or use the digital image of the card as the background in their phone.

After a week or so, the process would start over again and the previous card plus reflecting on the leader-week they had before would aid in priming the user. The participants were however only asked to participate for one week.

Animal Farm Concept

Using the insights gathered from the brainstorm session described earlier, a concept was developed that focused on the act of moving pieces around. This was then force-fitted on to the design goal to come to a testable concept: see image 25. The concept went with a more indirect approach of shifting one's perspectives by introducing fictional characters in an imaginary scenario, instead of looking at a personal scenario that has root in reality. Animals were used under the assumption that people can easily attribute certain characteristics and traits to these animals, without needing a lot of instruction.

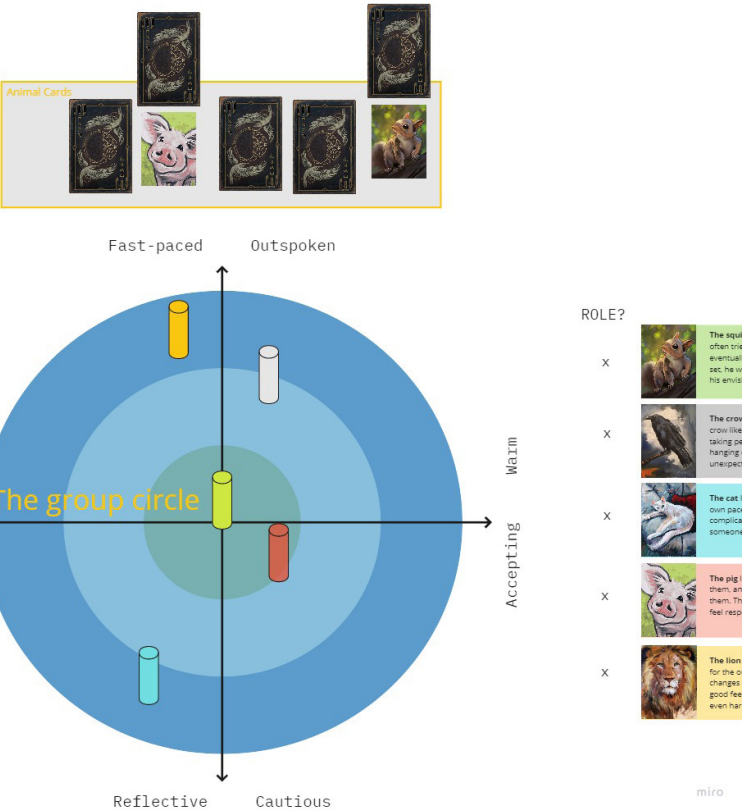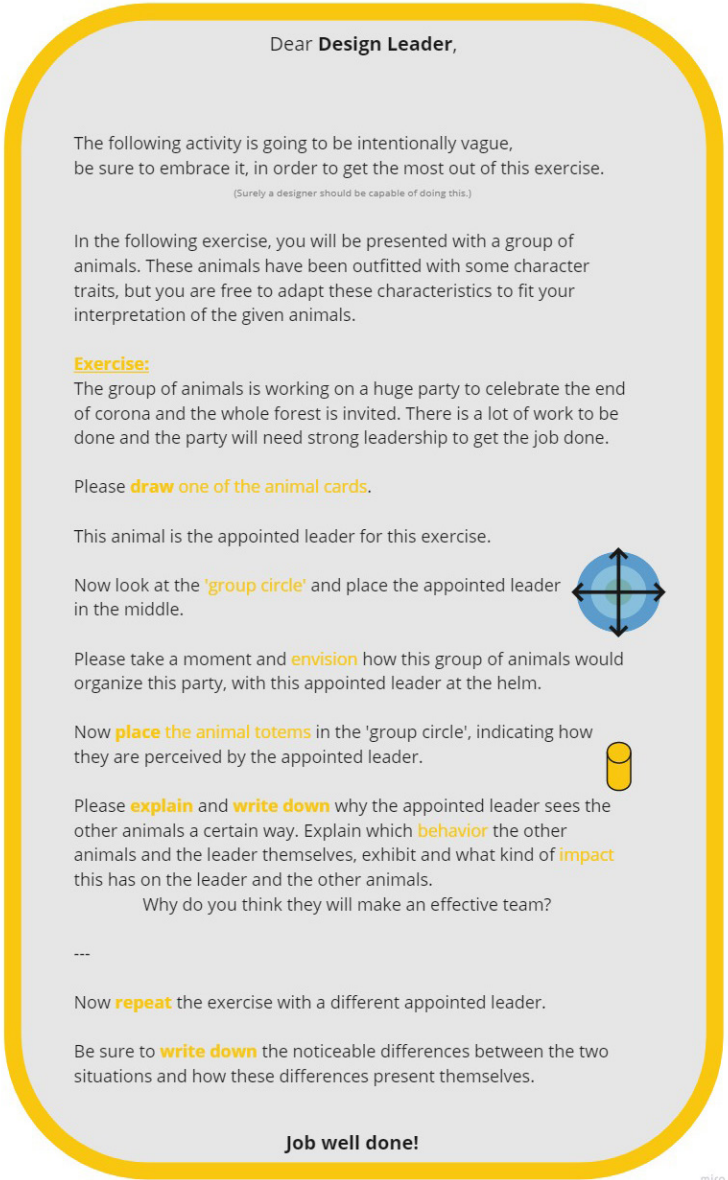In the animal farm concept test, the participants were given the following instruction card: see image 26.

Image 25: Animal farm concept.

Dear **Design Leader**,

The following activity is going to be intentionally vague, be sure to embrace it, in order to get the most out of this exercise.
(Surely a designer should be capable of doing this.)

In the following exercise, you will be presented with a group of animals. These animals have been outfitted with some character traits, but you are free to adapt these characteristics to fit your interpretation of the given animals.

Exercise:
The group of animals is working on a huge party to celebrate the end of corona and the whole forest is invited. There is a lot of work to be done and the party will need strong leadership to get the job done.

Please **draw** one of the animal cards.

This animal is the appointed leader for this exercise.

Now look at the 'group circle' and place the appointed leader in the middle.

Please take a moment and **envision** how this group of animals would organize this party, with this appointed leader at the helm.

Now **place** the animal totems in the 'group circle', indicating how they are perceived by the appointed leader.

Please **explain** and **write down** why the appointed leader sees the other animals a certain way. Explain which **behavior** the other animals and the leader themselves, exhibit and what kind of **impact** this has on the leader and the other animals.
Why do you think they will make an effective team?

Now **repeat** the exercise with a different appointed leader.

Be sure to **write down** the noticeable differences between the two situations and how these differences present themselves.
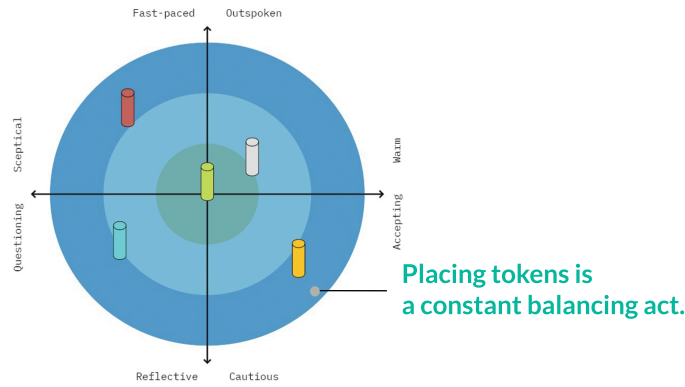
Job well done!

This card starts off by taunting the user, by telling them that they as designers should surely be able to do this exercise. This aspect of the design is preying on the arrogance of specifically a designer and tries to turn it into a driver to complete the exercise.

The user is then asked to complete the exercise of drawing an 'appointed leader card' and to envision how all the animals would (not) work together in order to throw a party for an entire imaginary forest. When the users had, in their opinion, envisioned the scenario, they were asked to place all the animals in the 'group-circle'. This circle's axes are based on the DiSC assessment for team dynamics (Marston, 1928). After placing the animals in the group-circle, the participants had to write down why they thought each animal belonged in a certain spot and which behav-

ior these animals would exhibit to warrant that spot, together with what impact that behavior would have on the other animals.

The user was then asked why they thought that this particular team would (not) make an effective team. After answering this question, the user was asked to repeat the exercise with a different 'appointed leader'. When this was done, the users had to reflect on which differences they noticed between the two scenarios and how these differences presented themselves.

Tests were performed with small concept ideas. Some of the insights gathered from the concept tests were used to both challenge the design goal and add to the list of design requirements, to inform the final concept design.

SPECIFIC REMARKS

Placing tokens is a constant balancing act.

Examples are used exclusively, no own input.

GENERAL REMARKS

- Taunting in intro made them feel more 'included' into the 'designer group'.

- Circle (the interactable) draws most of the attention.

- It was easy to get into the mind of archetypical animals.

FINAL DESIGN: SEARCHLIGHTS

Using the results from the ideation and conceptualization phase, a list of requirements was drafted and a final design was developed to satisfy the design goal. The list of requirements is used to make sure that concept aligns with the insights gathered during the entirety of the project. In this chapter, the final design will be presented and its most important elements explained together with the results and conclusions of the concept evaluation.

8.1 Concept description

As the 3P concept described in the previous chapter came close to satisfying the design goal in an inspiring way, this concept was taken and iterated upon further using the insights gathered during various earlier phases of the project. Doing so, a testable final concept design was produced (see Appendix G).

Building on the priming, positioning and then pushing that was envisioned in the 3P concept, the final concept design (see image 27) has seen more explicit steps being added to the design. The 3P concept had the four distinct steps (see image 21 last chapter) of priming by moving, positioning by dividing up points, pushing by taking the challenge and then setting a reminder as your first action of taking the challenge. The final concept design has seven steps (see image 28). During the pilot test, the steps were deemed not explicit enough, which was promptly changed and positively received.

Image 27: Tested final concept

Dear **Design Leader**,

The following activity is going to be intentionally vague, be sure to embrace it, in order to get the most out of this exercise.
(Surely a designer should be capable of doing this.)

In the following exercise, you will be asked to reflect on your leadership activities of the last few weeks. You will then be asked to rate the importance of certain leadership characteristics in those activities. After which you can pick a challenge card based on your answers.

Step 1
Please enter an environment that is new to you. (for example, sit under your desk or stand up instead of sitting down).

Be sure to keep an open mind!

You might learn something you did not already know.

Step 2
Now think your leadership activites of the last few weeks. Now **write down** and summarize two leadership activities that stand out to you.

Next, please **divvy up** all 20 points between the six leadership qualities on the points-sheet.

Step 3
Please, whilst keeping your score distribution in mind, **draw** one card from any of the leader-decks.

Now reflect on the leadership activities that you just wrote down, through the eyes of the leader you just drew from the deck.

Next, **write down** two leadership activities you will encounter in the upcoming weeks. How would the leader on your card handle those situations differently from you?

Step 4
Put the card up in your space, to serve as a reminder of your challenge.

Job well done!

In the first step the design leader is asked to physically move into a novel position either spatially or positionally, whilst being requested to keep an open mind. In the second step, the design leader is asked to write down and summarize two leadership activities they experienced in the last few weeks. In the third step, the design leader is asked to divvy up 20

points among the six provided leadership characteristics based on their answers from the second step and to then shortly write down why each score was allotted to each characteristic. In the fourth step, the user is asked to draw a card from one of the six provided decks that include leader-challenge cards. In the fifth step, the user is asked to reflect on the leadership activities from the second step through the eyes of the leader that is on the draw card. In the sixth step, the user is asked to write down two leadership activities that they might encounter in the near future and to think about how the leader on the challenge-card would handle those situations differently from themselves. These activities are usually handled by the user in the way they would always handle those activities, but now they have an alternative offered to them by the leader on the drawn card. The way they handle the upcoming activity now becomes a choice. They can choose their own approach if they deem that the best approach, they can take the approach envisioned using the challenge-card or anything in between. Finally, in the seventh step, the user is asked to put up the card in their personal space to serve as a reminder to their challenge.

During the exercise, the user is challenged to take a leader-week inspired by a drawn card that has a leader and some of their characteristics described on it. Firstly, the user is primed physically and mentally to have their perspective shifted by asking them to move their physical body into a place with novel surroundings. Secondly, the user is asked to position themselves regarding their leadership style by reflecting on recent leadership activities and scoring themselves on which characteristics were most important for them during those recent activities. Lastly, the user is pushed by asking them to draw a challenge-card and accept the challenge of taking a leadership-week in the theme of the leader that is represented on their drawn card. Using this card, they are asked to reflect forward and see how that particular leader would handle their leadership activities. In the end, they are asked to put the card up in their personal space to serve as a reminder as the first actionable step of their leadership-week.

8.2 Concept evaluation

Using the final concept described in the previous subchapter a final evaluation was done to see if the design performed as expected with the actual envisioned users and satisfied the design goal of temporarily shifting the design leader's perspective on their leadership style.

Previous interviewees were contacted to perform the final evaluation with and eventually five tests were conducted with the user group. All tests were conducted using the same setup and script. The results were assessed using a judgment based method. The data was gathered through observations during the testing and an interview after the test. All of the results and materials used can be found in Appendix G.

The evaluation was done to validate whether the design goal of "Temporarily shifting the perspective of a design leader on leadership styles" was satisfied by the final concept. The final concept does satisfy the design goal, although slightly differently than expected. More emphasis was placed on reflecting backwards and forwards. This together with the elongation of the exercise probably caused the challenge factor of the design to become muddled. The design kind of tries to do two things now, which still gets us where we want to go, but not quite as elegantly. The cards offered enough provocation to drive a novel form of reflection to satisfy the design goal by itself, not including the challenge-week that could come with the card.

In the end, the final concept satisfies the design goal, but still has some details that need to be worked out to make it into a toolkit that is easy to use for the user-group and to satisfy the design goal in a higher degree together with fulfilling more wishes from the list of requirements.

SPECIFIC REMARKS

Encourages reflection on competencies, not as much on self.

Reflecting on recent events, over 'general behavior'.

Dividing up points acted as a microboundary.

Faces helped with identifying.

Too little frontloading of the purpose.

Cards with actionables were inspiring.

Priming was familiar and convincing to the designers.

Explicit flow provided by the seven steps.

Physical reminder was prefered.

GENERAL REMARKS

Wording was not always explicit enough, can't be too specific. Rather instruct them too much then too little.

The design leaders reported wanting to use it during weekly/monthly reflection moments, often with peers.

The design satisfied the design goal through offering a novel way of being provoked and reflecting with the additional option of taking the challenge to take those reflections a step further.

The characteristics were not equal. Some were described as basics for professional working life.

Both 'good' and ' bad' examples were thought-provoking.

Less than half took the challenge.

In its current form (long) it would be used monthly, whilst a shorter version could be used weekly.

8.3 Redesign proposal

Using the conclusions drawn from the concept evaluations, whilst reflecting on the design goal, a redesign proposal was created (see image 29&30).

Building on the previous final concept design, a few changes were made to come to a redesign proposal.

Based on the previous iterations, the redesign now features five leadership competencies that are used to identify which of these competencies were used during recent leadership activities. Using this knowledge, a card from one of the five competency decks is drawn. This card features a leader that is known for using this competency. The user can then take the challenge of trying out a leadership-week, where they try to look at each leadership activity through the eyes of the leader on the card. As a start to that challenge, the design leader can also reflect forward on activities that might come up in the near future and envision how the leader on their card would handle those situations differently from themselves. When the activity then eventually presents itself, the design leader has at least two perspectives to draw from. The card also serves as a physical reminder of their challenge. The envisioned use-case and its interactions can be seen in the storyboard see subchapter 8.4.

Image 29: fill-in form for redesign proposal

Searchlights   Date: ....

Recent Leadership Activities (Step 2)

....
....
....
....
....

Recent Leadership Activities (Step 3)

....
....
....
....
....

= 23

Future Leadership Activities (Step 5)

....
....
....
....
....

Searchlights

This is Searchlights.

Searchlights was made to help design leaders temporarily shift their perspective on leadership styles, in order to start seeing other leaders more as peers. Searchlights is the result of a master thesis project for 'Design for Interaction' at the Delft University of Technology by Tim Rijkers, that focused on developing leadership qualities for designers. Be sure to embrace the vagueness and happy searching!

Turn on your searchlight!

In the following 7-step exercise, you will be asked to think back and write about your leadership activities of the last few weeks. You will then be asked to rate the importance of the five leadership competencies in those activities. After which you will be challenged to take a leader-week based on a card you will draw from the searchlight-decks.

Step 1
Enter an environment that is new to you!

For example, go out into the park, sit underneath your desk or stand up behind your desk.

Be sure to keep an open mind! You might learn something you did not already know.

Step 2
Now think about your leadership activities of the last few weeks.

Write down and summarize at least two leadership activities that stand out to you. Now think about your leadership activities of the last few weeks.

Write down and summarize at least two leadership activities that stand out to you.

Step 3
Next, divide all 23 points between the five leadership competencies on the fill-in sheet, based on how important they were in the recent activities you just wrote down.

Give a short explanation for each given score.

Step 4
Whilst keeping your score distribution in mind, you can draw one card from any of the searchlight-decks.

Step 5
Now reflect on the leadership activities that you just wrote down, through the eyes of the leader you just drew from the searchlight deck you picked.

Step 6
Write down at least two leadership activities you might encounter in the upcoming weeks. How would the leader on your card handle those situations differently from you?

Step 7
Put the card up in your personal space, to serve as a reminder and inspiration for your challenge.

Envision

Envision
Envisioning is the ability to identify a clear future picture and place a dot on the horizon that will motivate and inform the way people direct their efforts as peers. Higgs, 2003; Dess & Picken, 2000

Hello, Steve Jobs here!
- Hires smart and expert people so they can tell him what to do.
- Regularly drops in to check up on others and chip in with new ideas.
- The world was build by regular people, so I think I can influence it as well.
- Innovation is about subtraction. Focus on a few things so they may be excellent, but a still enough thinks so some of them can fail.
I challenge you to try a Steve Jobs week!

Hello, Kamala Harris here!
"None of us can do everything, but we all have the responsibility to do something."
- Knows that people will see what they see, not what you want them to see.
"Anyone who claims to be a leader must speak like a leader and that means speaking with integrity and truth."
I challenge you to try a Kamala week!

Hello, I'm a Mountain Guide.
"Get on the balcony; it is hard to see everything when you are on the dancefloor."
- Starts by teaching in the shed, coaching on the trail and guides on the mountain.
- Shows the team heights they can reach, that they had previously not thought of themselves.
- Is risk aware, but not risk averse.
I challenge you to try a Guide week!

Manage

Manage
Managing is the ability to translate and integrate new knowledge whilst finding appropriate ways for each individual to understand the vision and the way in which they can contribute to that vision. Higgs, 2003; Dess & Picken, 2000

Hello, Bill Gates here!
- Willing to put my money and name on the line.
- Precise in my speech and take ample time to form an opinion.
- Consistent in pursuing the goals I have set out decades before.
- Prioritizes using everyone else's skills to their fullest.
- Maintains the current situation.
I challenge you to try a Bill Gates week!

Hello, Angela Merkel here!
- Uses a methodical and low-key approach to problem solving.
- Has a careful approach that is lined with a love of detailed planning.
- Views leadership as a collective activity as she understands the power of purpose in motivating others.
- Unpretentious and straightforward in pursuing lasting change.
I challenge you to try a Angela week!

Hello, I'm a Manager.
- Here to optimize by directing others in what they should do.
- About maintaining and protecting what we know. Effective in making a good thing even better!
- Favors small and proven adaptations over big sweeping uncertain changes.
- I deal with the questions of When, Whom and How?
I challenge you to try a Manager week!

Dare

Dare
Daring is the ability to act on the belief in talent and potential of individuals and ideas, to create environment where these can be released. You dare to be creative to challenging the status quo to create this environment. Higgs, 2003; Dess & Picken, 2000

Hello, John Wooden here!
"Firmness shows confidence and resolve while 'bull-headedness' shows cockiness and fear."
- I focus on the people I work with, it is about the athlete, not about the coach.
- How I do anything, is how I do everything.
"If we share bad news with a bad attitude, we've created another problem outside of the original problem."
I challenge you to try a Wooden week!

Hello, Malala Yousafzai here!
- Dared to think differently and not accept things as they just seemed to be.
- Believes that serving others comes before leading others.
- Promotes for others to be independent and responsible.
- Willing to pay the ultimate price to see my vision through, as sometimes you have to be very brave.
I challenge you to try a Malala week!

Hello, I'm a Coach.
- Encourages people to work independently, but still makes them feel supported and involved in their work.
- Keeps people on target, inspired and shows them how to overcome weaknesses and difficult situations.
- Either only coaches people who fit their coaching style or adapts his style based on what others respond best to.
I challenge you to try a Coach week!

Inspire

Inspire
Inspiring is the ability to being open to and encourage real dialogues, the sharing of internal knowledge and the frank debate of all issues. Higgs, 2003; Dess & Picken, 2000

Hello, Greta Thunberg here!
- Laser-like focus on issues that she deems the most important and uncompromising in these beliefs.
- Would rather be too harsh in her words, than being unclear.
- Does things that others won't, to rip open the bubbles that people reside in.
- Not afraid to stand out from the crowd.
I challenge you to try a Greta week!

Hello, Stephen Hawking here!
- Embraces failure and then pivots in a new direction.
"Good leaders are not always right, but are always willing to learn from their failures."
- Embraces contradiction as a way of life.
"Our challenge is to defrost and reexamine our frozen thoughts' when it is appropriate, and to rise above it."
I challenge you to try a Hawking week!

Hello, I'm a Rolemodel.
- My struggles, flaws and the habits that made me successful, are far more valuable than my accomplishments.
- Aware that I influence other peoples actions and help them push and strive to overcome their weaknesses.
"All great leaders, sportsmen and high-achievers have one thing in common — they all have positive role models"
I challenge you to try a modeling week!

Empower

Empower
Empowering is the ability to work with people on all levels to build their capability and help them make the envisioned contribution. Higgs, 2003; Dess & Picken, 2000

Hello, Jordan B. Peterson here!
- Communicates primarily through stories; what is in it for me, for you and for the organization.
- Looks for the 'calibrated state', where everyone agrees on their role and participates voluntarily.
- Appeals to others sense of purpose and tries to contribute to their lives.
"Free states will always out-compete authoritarian states over time."
I challenge you to try a Peterson week!

Hello, Angelina Jolie here!
- Never commits to anything she is not likely to be able to handle for the full duration.
- Promotes the interests of the group members, as the people go before the tasks to be completed.
- Insists that you should not work alone at most things and instead ask for help.
"We have a choice about how we take what happens to us in our life..."
I challenge you to try a Jolie week!

Hello, I'm a Mother.
- Makes sure others feel safe and feel heard when they speak.
- Encourages others to try things they have not done before.
- Offers others two choices, not fifty.
- Looks at other's strengths instead of their weaknesses.
- Keeps everything running smoothly in the background.
I challenge you to try a Mother week!

8.4 Storyboard

1

Meet Magnus. He is about to finish up work for the week.

2

Ahhh, work is done a little early!
I might try that carddeck I got for my manager just before I was promoted.

3

Ah there it is, let's see what is inside!

4

According to the manual I need to move to a spot I usually do not sit. I will remember that for next time haha.

5

The carddeck is put back into the box and we are going to look for a spot.

6

We can sit in my personal jungle! As you can see, I never come here.

7
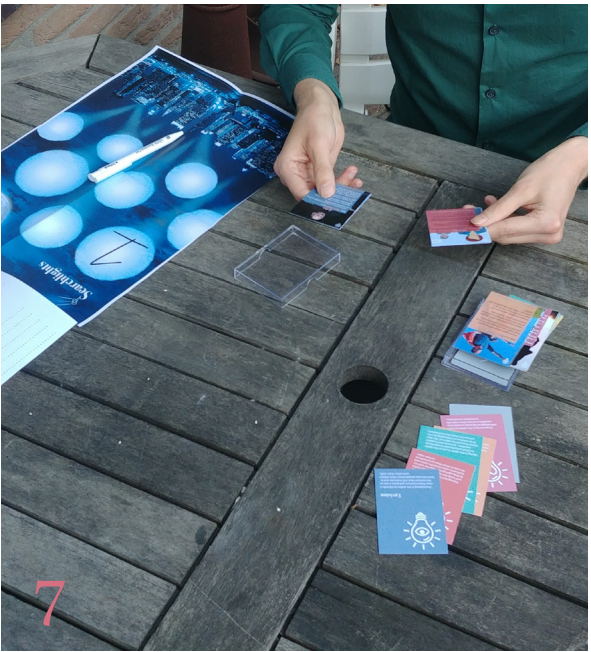
Magnus unpacks the toolkit again.

8

The manual describes how the cards should be placed on the table. Each card should be placed in the deck with its responding color.

9
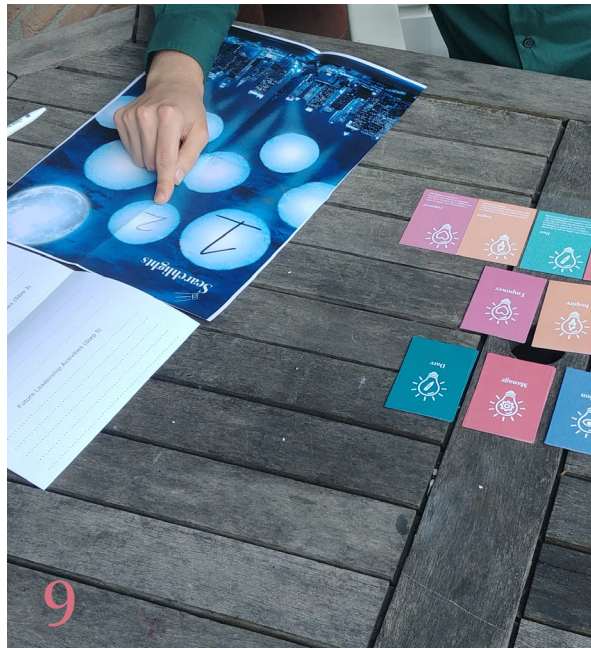
Now that the toolkit is set up, we can move on to step 2!

10

For step 2, Magnus needs to write down at least two leadership from the past few weeks.

11

After some thinking, he writes down some recent leadership activities.

12

For step 3, Magnus needs to rate each leadership competency on how important they were to him during the recent leadership activities.

13

Divvying up all 23 points among the five leadership competencies is a balancing act that takes some mental effort!

14

After a long think, the scores are finalized and the reason for each score is written down behind each score. Some scores even change last-moment.

15

Now on to step 4! Magnus now has to draw a challenge card from one of the five searchlight decks.

16

He is considering each of the competencies again and decides to go with the competency that scored the highest during the previous step.

A competency is chosen so Magnus knows the theme of the challenge, but is yet to find out who is on his card.

The card is revealed to be Malala!

Magnus spends some time thinking about how Malala would act in the scenarios from step 2.

Step 6: Write down two leadership activities you might encounter in the near future and how would Malala handle those situations differently?

Magnus reads the descriptions and decides to accept the challenge.

On to step 5, which tells him to reflect on the leadership challenges from step 2 through the eyes of Malala.

Magnus just set his first step towards taking his Malala-week!

On to the last step! Magnus has to put the card up in his personal space to serve as a reminder.

25

He puts back the toolkit into the box.

26

He goes back to his working spot to set up the reminder.

27

He puts Malala on the edge of his monitor, so he won't forget.

28

Hello, **Malala Yousafzai** here!

- Dared to think differently and not accept things as they just seemed to be.

- Believes that serving others comes before leading others.

- Promotes for others to be independent and responsible.

- Willing to pay the ultimate price to see my vision through, as sometimes you have to be very brave.

I challenge **you** to try a Malala week!

Close op of the Malala card

8.5 Elements Explained

The final design could have taken any number of forms, based on the design goal and list of requirements. In this subchapter a number of elements will be highlighted to indicate why they have been designed to be the particular way they now are in the proposed redesign.

Priming the user through changing their perceived environment and position (see image 31).

Image 31 priming]

Sale et al., (2014) note in the introduction of their paper that: "The environment exerts profound effects on the brain. A large body of evidence shows that brain plasticity is strongly affected by exposure to stimulating environments, with beneficial consequences throughout the entire lifespan." (p.189). In the design, the user is asked to physically move themselves to an environment that is relatively novel to them. This causes the user to be physically active and change their environment towards something more stimulating, both in an attempt to heighten the plasticity of the user's brain (Achiron & Kalron, 2008 & Sale et al., 2014).

Leadership competencies (see image 32) were derived from the literature to broker the research-practice gap and offer a way for design leaders to stay relevant.

In order to broker the research-practice gap, using literature where possible to feed the design decisions and elements made sense. As Rylander (2009) mentions: Design solutions tend to be holistic and designers can be referred to as knowledge brokers. From our own strategies for impactful research we also find that we should: "Translate and transform useful research into a useful form for practitioners (Bansal, 2012)."

Envision

Envisioning is the ability to identify a clear future picture and place a dot on the horizon that will motivate and inform the way people direct their efforts and utilise their skills.

Higgs, 2003; Dess & Picken, 2000

Manage

Managing is the ability to translate and integrate new knowledge whilst finding appropriate ways for each individual to understand the vision and the way in which they can contribute to that vision.

Higgs, 2003; Dess & Picken, 2000

Dare

Daring is the ability to act on the belief in talent and potential of individuals and ideas, to create environment where these can be released. You dare to be creative to challenging the status quo to create this environment.

Higgs, 2003; Dess & Picken, 2000

Inspire

Inspiring is the ability to being open to and encourage real dialogues, the sharing of internal knowledge and the frank debate of all issues.

Higgs, 2003; Dess & Picken, 2000

Empower

Empowering is the ability to work with people on all levels to build their capability and help them make the envisioned contribution.

Higgs, 2003; Dess & Picken, 2000

The leadership competencies are based on my own leadership characteristics that came forth in the interviews and were used in the concept testing, the sensemaking framework by Higgs (2003) and the five key priorities for 21st century organizational leaders by Dess & Picken (2000). The competencies descriptions were taken from the literature to make sure that the competencies would cover more ground where leadership competencies are concerned, which is where the sensemaking framework from Higgs (2003) was used. Dess & Picken (2000) was used to ensure that a design leader specific need could be fulfilled. The design leader's need to stay relevant has shown up earlier in the results of the analysis of the research data and both rounds of synthesis. The descriptions offered on the competencies are based in literature, whilst the names of the compe-

tencies themselves were altered to give each competency more of their own identity, as the original naming of the competencies offered by Higgs (2003) did not offer these distinct identities.

Friction was introduced into the design using a microboundary to prevent the user from rushing through the positioning steps (see image 33).

In order to keep the user from rushing through the positioning-step

and not putting in enough thought to actually take up a position to be shifted away from later, a microboundary (Cox et al., 2016) was introduced. This was done by having the users score the importance of each leadership competency through having them completely divvy up a finite pool of points that is not divisible by the number of competencies, as the pool of points consists of 23 points total which is a prime number. This microboundary added the necessary friction to hinder the user from painlessly achieving their goal when doing the exercise (Young, 2015), as it has been shown that "small frictions in the right places can make users more mindful about their actions" (Mejtoft et al., 2019; p.41).

Writing down reflections that go both backwards and forwards (see image 34).

Inspired by design legacies in organizations and how these organizations might benefit from mapping out their past, in order to enable them to change in the present and future, reflections forward and backward were included in the exercise offered by the toolkit. Inspired by teachers asking you to write down your guess at the answer during a lecture before revealing the actual answer and the "Future authoring program" by Jordan B. Peterson, the user of the toolkit is provided with a fill-in form. This both strengthens the 'positioning' step of the toolkit exercise, adds another microboundary and enables the user to look back at previous uses.

Searchlights

Date: ……..…….

Recent Leadership Activities (Step 2)

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. . . .

. . . .

. . . .

Recent Leadership Activities (Step 3)

☐ . . . .

☐ . . . .

☐ . . . .

☐ . . . .

☐ . . . .

= 23

Future Leadership Activities (Step 5)

. . . .

. . . .

. . . .

. . . .

Drawing a semi-random card to both receive and accept the challenge (see image 35).

Having someone pick a card of their choice would not resonate well with the card being a challenge to the user. A challenge implies not being able to set all of the parameters yourself. However, giving the user a completely random card also does not resonate fully with the card being a challenge as it might feel too random, causing the user to not feel obliged to actually take the challenge on that specific card. So in order to have the user feel some commitment to the drawn card, but still not giving them full agency of picking the card, they are asked to pick one card from any of the five available decks of cards. In this way the user is picking the leadership competency that the challenge will be themed after, but not the actual challenge.

Manage

Managing is the ability to translate and integrate new knowledge whilst finding appropriate ways for each individual to understand the vision and the way in which they can contribute to that vision.

Higgs, 2003; Dess & Picken, 2000

Hello, **Angela Merkel** here!

- Uses a methodical and low-key approach to problem solving.

- Has a careful approach that is lined with a love of detailed planning.

- Views leadership as a collective activity as she understands the power of purpose in motivating others.

- Unpretentious and straightforward in pursuing lasting change.

I challenge **you** to try a Angela week!

Card as a physical reminder of the challenge (see image 36).

With the card containing both the challenge and the actionable tips, the user is asked to put the card up in their personal space to remind and help them during their challenge-week. When the time comes to put the card back with the rest of the toolkit, this is also a great excuse for the user to use the toolkit again. Having to physically open the toolkit again to put the card back lowers the barrier towards using the toolkit again, just like someone who wants to play more guitar should put the instrument in reach and sight, instead of leaving it in the closet.

In the end, these are the main elements that make this design help design leaders temporarily shift their perspective on leadership styles. The fill-in form and the leadership competencies would have to be tested again to verify that they work as intended, but looking at the previous test it does not seem unreasonable to assume that they would work well enough.

CONCLUSIONS AND REFLEC-TIONS

In this chapter the research activities performed during the project will be reflected on, what was learned from doing those activities and how one could improve the effectiveness of those activities in a future project. Firstly, the added value of the project will be discussed. Secondly, the strategies for managing the research-practice gap will be discussed. Thirdly, the limitations faced during the project will be shortly presented. Lastly, a personal reflection was included that reflects on the ambitions set at the start of the project.

9.1 Added value of the project

The goal of this project was to research how designers in leadership positions performed and how we could empower them by developing a toolkit, whilst developing and implementing strategies for managing the research-practice gap. After research and synthesis, a design goal was set up to detail how exactly these design leaders would be empowered. A toolkit was then developed to satisfy that design goal. In this subchapter, we will discuss how the results of this project add value to the literature.

Managing the research-practice gap in a graduation project

The conducted research and developed strategies, regarding the research-practice gap contributed to existing knowledge by showing how designers can manage the research-practice gap in their projects on a single project level. In a way, a gap was bridged by creating the strategies mentioned, since some of the literature used was not operationalizable by practitioners before the strategies were developed. One could say the research-practice gap-research-practice gap was bridged? The "Searchlights" design also brokered the gap by operationalizing leadership research and translating it into a form that practitioners can more readily use. Design seems to inherently be a tool to bridge gaps. On this topic, Rylander (2009) mentions that 'design solutions tend to be holistic, and designers could be referred to as "knowledge brokers".

Developing leadership qualities for designers

The conducted research on design leadership, contributed to existing knowledge by assessing how designers experience, and fare in, leadership positions and by providing a novel way for them to self-reflect and self-assess their leadership competencies through the "Searchlights" design. The field of leadership is massive, whilst the field of design leadership is still in its infancy. This project contributes to the literature by brokering the

knowledge from the leadership literature, whilst adding on its own explorations, towards the design leadership field and its practitioners.

The literature was also tested by the project and the data gathered and generated through the research activities. For example, in the literature review on leadership it was mentioned that leaders are not born, but developed. This was confirmed by this research project, but also slightly modified into: (Design) Leaders are not born to lead, but some are also born not to lead. Some can be developed into leaders, whilst others cannot. Another example: "Leadership cannot be attained without the efforts of others" (Joziasse, 2011; p.35), is a sentiment that was wholeheartedly shared by the design leaders, who refer to leadership as somewhat of a teamsport.

In the end, the literature on design leadership specifically is spotty. The project contributes to the literature by brokering knowledge from the leadership field into the design leadership field, together with its own explorations. The research-practice gap however, is detailed very well by the literature. The project contributed to the literature by operationalizing and brokering the knowledge provided by the field.

9.2 Reflection on strategies for managing the research-practice gap

As proposed in chapter 2, the use and effectiveness of the strategies for impactful research were reflected on, on a weekly basis for a total of 14 weeks, whilst using eight key questions (see Appendix B). At the start of each week, thought was given to the questions and were answered. The results of the twelve moments of reflection were collected and clustered (see Appendix B).

In order to further reflect the following questions are answered:

- How was it to use the strategies for impactful research?
- Did the strategies have an effect and in which ways?
- What kind of and which changes would we suggest to be implemented for future use of the strategies?

So firstly, how was it to use the strategies for impactful research throughout most of the project?

During the latter half of the project it became clear, even though research is also done through design, that the strategies were harder to use during the synthesis and design phase of the project. It was more difficult to translate the strategies into design actions, especially during the diverging stages of ideation and conceptualization.

Secondly, how did the strategies for impactful design affect the process throughout the project? The weekly reflections helped the process, outside of simply being a reminder and making one more cognizant of the strategies, by offering a different reflective perspective one could take. After each reflection, the goals and activities for that week were often adjusted slightly or new activities were planned, in accordance with said strategies. This perspective helped to become aware of moving goalposts and to become aware of possible outcomes of the project. During diverging it helped with changing perspectives and pursuing knowledge that had not yet been pursued. During converging they added a criteria by which the decision making could be weighed.

Now, which changes could potentially be implemented for future use of the strategies for impactful research?

First off, the questions could and maybe should be worded in such a way that a yes-or-no answer does not suffice. This makes reflecting easier, as one does not have to ask themselves: Why? Every time. The questions can do that for them. Secondly, each strategy can be given a time-component where they come in and out of use at certain times of the project. Some of the formulated strategies were simply not relevant for the entirety of the project. Thirdly, the strategies could be infused or incorporated into different research approaches, to make sure other priorities are not lost. Lastly, the reflection based strategies should probably carry less weight during the ideation phase of a project, since they might be more constraining than beneficial. This does not mean they can not be a boon during the ideation and concepting phase of a design project, it means that the strategies should be disregarded when they prove to be less than useful during these stages. The benefits of the strategies for impactful design are also captured by these informing the list of design requirements and wishes, which I believe to be enough during these phases of a design project.

Concluding, I would recommend other designers to try the strategies out for themselves, with some of the adaptations mentioned above, since I do believe it will help them manage the research-practice gap during their project. The strategies were less of use during the designing phase of the project, because designing is inherently something that brokers the gap. In the end, the strategies had a huge impact on the project in terms of framing the role of researchers, designers and practitioners and how the project interacted with each of these stakeholders over time. Taking this perspective for an entire project is something to be experienced by any designer.

From the moments of reflection, it has become clear that the strategies were operationalized to such a degree, that they are deemed usable in most weeks of the project. The strategies were especially easy to use in the earlier stages of the project, where things were still unclear and more flexible. Towards the end of the project, it became clear that the strategies were harder to use during times where a deadline was looming and things had to be finished. In this project, those were specifically the weeks leading up to the midterm and greenlight milestone meetings.

9.3 Limitations faced during project

When the project started a research plan was drafted with the goal of producing a toolkit that empowered designers in leadership positions. Here we will discuss what kind of limitations were faced that had a significant impact on the project's planning and envisioned research activities.

The project was conceived and started in the latter half of 2020, which means during the Covid-19 pandemic. The project was thus planned with the limitations this would bring. This meant making the project more research focussed, because user-testing and prototyping were expected to be more difficult to do. The user-testing and prototyping that were planned to be done, were mainly done digitally to avoid the unethical behavior of having unnecessary repetitive close contact with people in short succession. Even though most of the work was still done using notebooks, this was also translated to a miro-board, as this was more practical for sharing with the research-team. In short, everything prepared to be done and was done online from a home environment.

The only noticeable limitation faced that was difficult to prepare for was the accessibility of peers, as designers from the Technical University of Delft are very much acclimatized to having constant access to peers during the entire duration of their studies. The discourse that would happen between peers was sorely missed during intensive mental-work of doing analysis and synthesis, but also during ideation and concept testing. The barrier to entry for having these valuable conversations was just much higher. Even though a weekly meeting with a peer was set-up initially to counteract this, multiple additional meetings ended up having to be scheduled to provide the discourse that was needed to get 'unstuck' during the project and to get new inspiration and insights through the peers.

However, the opposite was true for outside contacts. When initially planning to do interviews with designers in leadership positions, it was expected that these design leaders would be very busy and be even more difficult to approach during the pandemic. This ended up not being the case. It was expected that the list of interviewees would mostly exist out of academic leaders related to the TU Delft. In the end, almost none of the interviewees were academic leaders and more interviews were done than initially planned. Almost all of these interviewees were also welcoming towards being contacted for the testing of prototypes, which solved most of the problems that were anticipated during the planning of the project.

If similar limitations would be anticipated in the future, scheduling ahead plenty of both formal and informal meetings with peers and the research-team is definitely recommended, together with keeping most of the work digitally focused through software such as Miro and cloud storage services. Even more so when considering more mentally-intensive work will have to be done when the focus is likely shifted towards research rather than delivering a fully embodied and validated design.

9.4 Directions for future research

During the project many choices were made about what to include and especially, what to exclude in the project considering the initial assignment and the time available to complete the project. Here we will shortly lay out some areas that were left untouched and underexplored during this project that could be interesting for future research.

Firstly, the data gathered and generated during the interviews yielded rich data which was condensed into a single design space and then towards a singular design goal. Using any of the prevalent topics in the design space, a multitude of design goals could be derived and used to discover more intricacies about design leaders through testing designs with these design leaders. Topics such as emotional intelligence (as this project ended up focusing on behavior, rather than personality), connecting with other leaders, promoting team-based leadership, inspiring self and others, and balancing any number of things, could be named as examples of design spaces one could look at. More topics can be found in Appendix D1.

Secondly, the proposed redesign could be further improved on. The design could benefit from a rework that moves away from the challenge aspect of the cards and towards the testing of and reflecting on the leadership competencies. The current redesign is most flawed in the attempt to single out leaders to be representative of a singular leadership competency, which does not hold up in the real world. Successful leaders will most likely have proficiencies in multiple of the leadership competencies. Moving towards the use of spyder-diagrams or radar charts could be very interesting. Archetypical leaders or icons could be represented by these charts, as well as the design leader their competencies. Design leaders can then potentially be asked how they think their chart will look, be asked to guess how the radar chart of a certain leader looks or asked to create the chart of their ideal leader, to name a few options. There could even be more experimentation in comparing iconic, archetypical, historical and fictional leaders in both male and female forms to see which the design leaders are able or prefer to identify with.

Thirdly, when it comes to doing research that will have an impact on the practitioners, aside from refining and expanding the strategies for managing the research-practice gap during a research-design project, it would probably be very beneficial to have a client for the project. Having a client from the world of the practitioners might have the benefit of providing a shorter and more frequent feedback loop on the project from the

practitioners side. This would make it easier and more likely for the project to have an impact on practitioners.

Fourthly, earlier in the project it had been planned to look at designerly qualities and skills which would help the designer in leadership positions and vice versa. This ended up not coming to fruition, but it could still be interesting to see what designers could learn from the field of leadership.

In the end, a lot of topics still remain unexplored when it comes to design leaders. Designers are not special when it comes to becoming leaders, but they do bring a valuable perspective to a leadership team that seems to be well suited for the current times, which leads me to believe that further research into design leaders could benefit not only them, but any leadership tea

9.5 Personal reflection

At the start of the project I set some goals to work on my ambitions in the project, each of which will be discussed shortly.

The noteworthy ambitions can be summarized by: Project management, presenting and designers in leadership. Firstly, I wanted to put extra effort in managing my project and my own (working) condition in order to build healthy habits for the future, which was motivated by a recent burnout. This was planned to be done by working four days a week and only working on the scheduled hours of 10AM to 6PM, scheduling weekly meetings with both a peer and the supervisory team, using the pomodoro method during work and reflecting weekly.

This was a lot more challenging than expected. Initially it was fairly easy to keep up with the plan due to the novelty of it all, but soon stress and fatigue set in, which caused me to easily fall back onto my old habits, which was scary and stressful coming off a recent burnout where I spent a lot of time fighting and changing those habits.

The weekly meetings were great and I would schedule my project the same way again in a heartbeat, as they made sure I was never stuck on the same thing for too long. Working four days a week was a blessing and a curse. I think it was really necessary to have a lower workload as I am convinced this helped me perform decently, in a sustainable fashion, for the duration of the entire project. The pomodoro method was shelved early on and completely forgotten, if I had included it in my weekly reflection script, it might have been different.

Secondly, I wanted to work on presenting. Presenting has always been a focus for me, even going as far back as my bachelor degree, since nobody ever seemed to want to step up and do it. However, not being able to pres-

ent your design just does a disservice to your own work. This motivated me to add a goal of working on my presenting skills during the thesis project. Looking back it started off well by having a meeting about presenting with a teacher at the TU Delft and doing some informal presentations to friends. However, there was only room for working on this ambition when I was not working on the project itself, which means not a lot of room. I am still glad to have gotten the experience of doing presentations during the milestone meetings, since I learned online presenting is a whole other beast from physically presenting.

Lastly, I wanted to have gained some insights, as the result of this project, on the best practices and nuances of being in a leadership position as a designer. To facilitate this I set the goal of reading three design leadership related books. I ended up reading " 21 Irrefutable Laws of Leadership" by John C. Maxwell, "Start with WHY'' by Simon Sinek and "Leading Design" by Jan-Erik Baars. The last of which is still a work in progress. Although I think it helped me gain different perspectives during the project, I would personally not repeat the experience. You already think about the project enough during working hours and as I did all my reading outside of working hours, I feel like that reading time would be better spent on giving my brain the space to process the knowledge gained whilst working on the project instead of bombarding it with more knowledge on the same topic.

In the end, I am satisfied with the results around my ambitions, as I started the project with the hope of being able to survive the workload post-burnout. I feel like I put in a lot of work and learned a lot, which is a good way to feel after a long project in my opinion.

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APPENDICES

Appendices

Appendix A1 - Literature review research-practice gap full

Appendix A2 - Leadership literature review raw

Appendix B - Reflection script for impactful research strategies and results

Appendix C - List of interviewees descriptions

Appendix D1 - Interview results raw

Appendix D2 - Synthesis raw

Appendix E - Ideation process

Appendix F - List of requirements

Appendix G - Test final concept

Appendix H1 - Redesign process

Appendix H2 - Redesign Printout version

Appendix 0 - Project Brief (approved version)

Developing leadership qualities for designers.

Timotheus Johannes Rijkers