Reframing digital citizenship

Creating a common understanding of what it means to live on- and offline at the same time.

Bringing together the on- and offline perspectives of parents and children.

by Yade Heinen

Reframing digital citizenship: creating a common understanding of what it means to live on- and offline at the same time.

Bringing together the on- and offline perspectives of parents and children.

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abstract

In the future, the digital environment is increasingly determining how we are living together. Both young and old are being challenged in preparing themselves for a world they do not know yet. Children are growing up in a faster changing world than their parents, increasing the tension between parents and children in how they perceive the world around them. Therefore, this project focuses on the generation differences between parents and children in perceiving the digitising world. This report describes the research on digital citizenship in the current and future context and describes the concept design process derived from it. The project takes a holistic approach, using the ViP method, and is done in collaboration with the design lab of the public library in Amsterdam. The two main questions in this project are: How do parents and children relate to the digitising world? And how can they be invited in creating a common understanding of what it means to be a (digital) citizen? The research phase of the project consisted mainly of interviews with parents and children and interviews with experts, getting to know the different points of view. Literature and desk research complemented the research. The concept presented in this project is Bubbel Babbel. Bubbel Babbel is a conversation box that allows parents and children to discover their digitising world together. The box invites parents and children to step out of their bubble and lets them experience the online world through the eyes of the offline world, and vice versa. The concept fits well with the future role of libraries, which become more focused on digital transformations. Therefore, Bubbel Babbel could serve as the first tool that builds a bridge between the physical world and the digital world, letting people wonder “how do we actually see the world?”.

preface

Dear reader, thank you for being here. I hope this project will spark your interest and excitement. I hope you will be amused by reading it. As amused as I was, doing this project.

It is fair to say that this project was an adventure. It caused many moments of excitement and at the same time, it caused many moments of frustration. But that is all part of it. The support, critical notes, and participation of many people around me have been essential in successfully accomplishing the end of this project. I am grateful to all of you.

Thanks to my coaches, Paul and Nazli. Thanks to het ontwerplab. Thanks Ad, Marieke, and Leonore. Thanks to Daniel. Thanks to my IDE supporters Maria and Luc. Thanks to my roommates. Thanks to Anna. Thanks to the other Paul. Thanks to my Secrid colleagues. Thanks to all the parents and children contributing to my interviews and tests. Thanks to all the experts who wanted to make time for me. And a very special thanks to my family; Manja, Henk and Qimo.

Enjoy reading, Yade

glossary

Because there is a lack of clarity in terminology in the domain of digitalisation, a small glossary explains how certain terms are being used and interpreted in this project.

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Digitalisation
Refers to the process of changing from analogue to digital. Digitalisation is turning something into bits and bytes, or 1's and 0's.

Digitisation
Refers to the conversion of processes or interactions into their digital equivalents.

Offline
Refers to not using and not being connected to the internet.

Online
Refers to using and being connected to the internet.

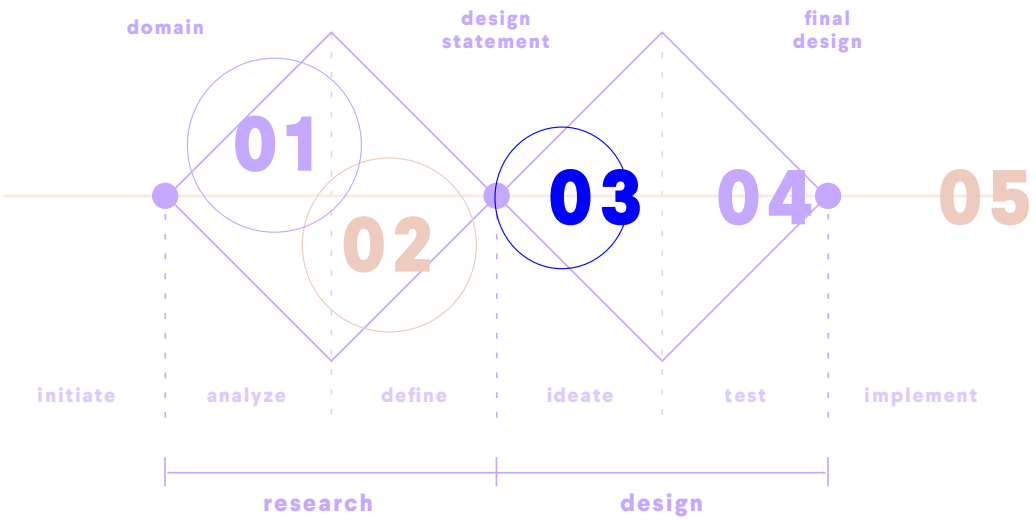
Digital world
Refers to the virtual world around us.

Analogue world
Refers to the physical world around us.

content

01.
the current context

02.
the future context



03.
the design qualities

04.
the final design

05.
discussion, conclusion, and reflection

introduction

Welcome to a rapidly changing digital world with social issues and changing behaviour. Welcome to new challenges and opportunities caused by digital technologies. Welcome to a project about growing up and parenting inside a world that is on- and offline at the same time.

More than twenty-five years ago, people would have laughed at the idea that there would be a cell phone that could connect them with people all over the globe. They would have laughed at carrying a phone with them all day, making them available twenty-four seven. Twenty-five years ago, there was no YouTube, no Instagram and no Tikkie, can you imagine? When you were born more than twenty years ago, you probably can. But when you grew up with having all digital means available, you probably cannot. Children anno 2022, will be growing up in a world where the on- and offline world intertwine.

During the pandemic, the digital environment became more important than ever before. Not only the younger generations but also the older generations became dependent on digital resources. Digitalisation turned out to be unavoidable; from ordering products online to staying connected via video calls. The pandemic opened our eyes; what is this digital space looking like? While young generations look like relatively competent digital users, their skills are quite often overestimated. Almost 50% of the youngsters (10-15 years old) recognise unsafe behaviour less well and are being sceptical about what they can learn from their parents and teachers (Koninklijke Bibliotheek, 2021). At the same time, parents are struggling with parenting in a digital area they did not grow up in themselves (Livingstone & Byre). This raises the questions: what does it mean, growing up digitally? How does society relate to this digitising world around them? What are the things that make people a digital citizen, and more importantly, what actions can society take to participate within the digital environment of the future?

This project focuses on digital citizenship and explores what it means to be a citizen within this constantly developing digital society. The project represents both the perspective of parents and children, looking into how the parent-child relationship can play a role within the domain. The outcome of the project is an intervention focused on families who are growing up in the digital era. The larger goal is to make an intentional social impact on participating in a digitising world.

Within this report, the half year graduation project is communicated. The current and future context of digital citizenship has been researched, followed by the desired impact the designer wants to make with this project. The impact is translated into a design that brings the on- and offline perspectives of parents and children together inviting them to create a shared understanding of how to participate in a digitising world. This design has been evaluated with parents and children, assessing the effectiveness and appropriateness of the design. The report ends with the final design, its implementation opportunities, and a list of improvements for future development and research.

BUBBEL BABBEL

Kom even uit je bubbelleven

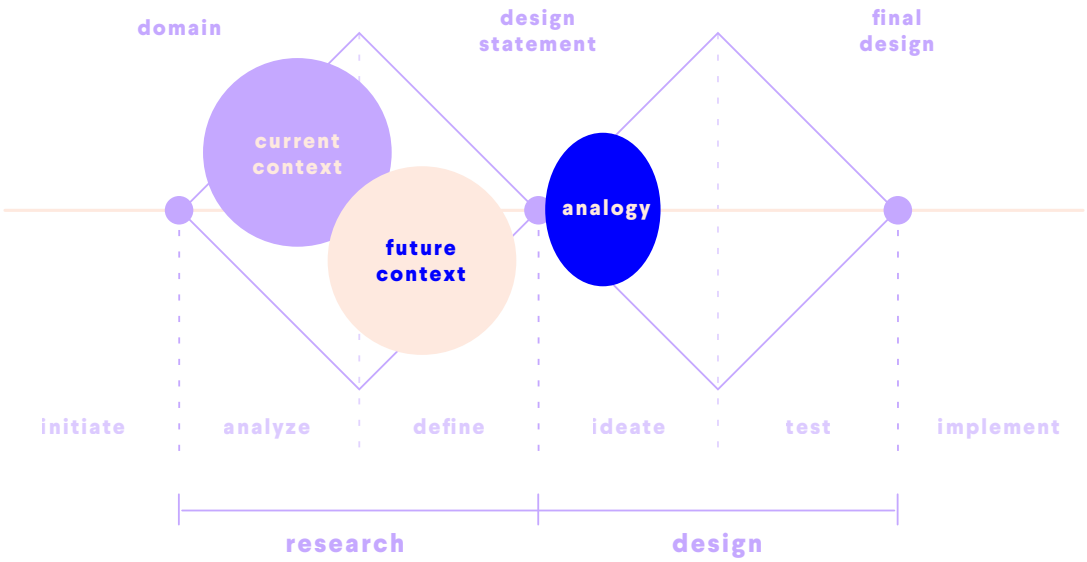
De leukste gespreksbox voor kinderen en ouders

design approach

The long-lasting curiosity of how artefacts in people's daily lives influence society's behaviour, was the motivation to start this project. When encountering the project of the Public Library of Amsterdam about growing up digitally, the need to contribute to this domain began to grow. The project is done in collaboration with the design collective Idiotes, the OBA (public library of Amsterdam) and the municipality of Amsterdam. The assignment has been set-up personally and interpreted freely from the OBA project about growing up digitally.

Design process

This project takes a vision driven design approach. As a designer you have the benefit of having a certain kind of imagination. This imagination can be used to show things from a different perspective; showing the possibilities others might have not thought about. The approach to trigger this imaginative thinking is based on the ViP (Vision in Design) method by Paul Hekkert and Matthijs van Dijk (2011).



To show the steps that were taken during this project, the process is visualised and reported chronologically. The project consists of two different phases, which can be resumed into a research phase followed by a design phase. Within these phases, multiple steps were taken back and forth. Many iterations were done, meaning that steps back were taken to move forward in the process.

Research phase

Before starting the research phase, the project was initiated into the domain of digital citizenship in relation with the parent-child relationship. A big part of the analysis consisted of researching the current and future context of digital citizenship. During this phase in the process, different perspectives were analysed, taking a holistic approach. Subsequently, the future context helped define the desired impact to be made with the design of this project.

Design phase

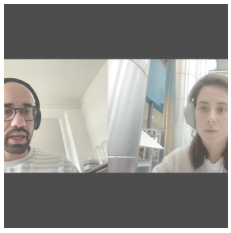
After defining the impact of the project, the design statement and inspirational analogies helped in creating ideas. By keeping the design statement and analogies close to the ideas, one promising concept emerged. Thereafter, the interaction of the concept was assessed by parents and children to examine if the design fits its audience and if it achieved the intended impact. Based on the validation, improvements were implemented in the final design of the project. The final design will be explained elaborately at the end of the report. The project will finish with the limitations of the project, implementation opportunities and a list of future recommendations.

Design methods

The Vision in Design method primarily defines the overarching method used during this project. However, during the timespan of the project, additional methods were applied within the ViP method. To create an understanding of the current and future context of digital citizenship, multiple research methods were carried out which are listed below.

1. Desk and literature studies

Papers and reports in different fields within and outside the domain of digital citizenship contributed to this project, building a scientific framework. Most literature references can be found in appendix E, where an overview of factors is given for the future context of digital citizenship. Other references can be found throughout the whole report and in the reference list at the end of the report.



2. Interviews with experts

Within this project, interviews with experts contributed to discovering relevant insights. Domain experts were used to get a grip on the current context, whereas experts from other fields (e.g., psychology) helped shaping the future context. The interview guides and most important insights can be found in appendix B and E.

The experts that were consulted during this research:
1. Hans Beentjes – professor of General Communication Science UvA
2. Amy Blitterswijk – health care psychologist / child psychologist
3. Jessica Piotrowski – director of CcaM
4. Nicole Goedhart – postdoctoral researcher Amsterdam UMC
5. Karien Sondervan – director Cybersoek
6. Ian Scharroo – domain specialist Biblionet Groningen
7. José Remijn – maakplaats 021 public library Amsterdam

3. Qualitative research by empathising with parents and children

To empathise with the environment and perspective of parents and children, guerrilla interviews, two design hackathons and elaborate semi-structured interviews were held. The insights of this qualitative research contributed to creating a clear overview of how parents and children perceive their current digital environment.

Within the design phase, an iterative approach was taken. Prototyping and validation methods played a prominent role and were used.

4. Prototyping

By using digital prototyping, the concept could be easily assessed in the very beginning of the process. Digital platforms like Miro helped in adapting quickly to the feedback of colleagues and fellow students. Therefore, small adjustments could be made easily. The paper prototyping followed from the digital prototypes, making the concept more tangible for assessment with parents and children. As a result, a final prototype has been developed.

5. Creative sessions with colleagues and fellow students

Organising creative sessions with colleagues and fellow students helped in getting fresh perspectives on the project, creating multiple different ideas.

6. Validating methods

Validating a physical prototype in the early stage of the design process, helps in understanding if the concept is in line with the intentions of the designer and how it needs to be improved. Also, by doing early assessments, parents and children can be more involved in the design process and the design can be adjusted more specifically to fit their lives. To assess the impact of the design, a validation round is done after the concepting phase of the project. The recommendations out of this validation are implemented in the final design. Assessment helps in validating the likelihood that intended behavioural change and any social implication would indeed follow the design's introduction (Hekkert & Tromp, 2019).

01 the current context

01.

the history of digitalisation

Anno 2022, we are living in a digitised world where technology is portrayed as progressive means, offering solutions for many things. Digital technologies are becoming more and more intertwined with our living environment. Therefore, digital technologies are increasingly determining the way human beings perceive, feel, think, and act. But how did humans start to become related to something like 'digital technologies'?

What is meant by 'digital technologies'?

What defines digital technologies is its binary system. You can see digital technologies as electronic tools, systems, devices, and resources that generate, store and process information that is converted to zeros and ones. Examples of digital technologies are our well-known smartphones and computers, but also social media, e-books, digital cameras and even some 'smart' cars are part of it.

The birth of our digital environment and our changing interaction with it

Our digital environment was born with the invention of the internet and rise of home computers in the second half of the 20th century. Home computers enabled people to get access to digital systems, like the internet from the environment of their houses and/or work.

In 1989 the World Wide Web was invented by Tim Berners-Lee, a British computer scientist. This first generation of the World Wide Web, also called Web 1.0, was considered as the read-only web (Getting, 2007). 'Read-only' means that people were interacting with the internet only by reading and consuming content and goods; people could only view information provided by web pages, and it became possible to purchase goods or services online rather than from offline markets (Solanki & Dongaonkar, 2016). Search engines like Yahoo! and Google and the online store Amazon.com were born in this era.

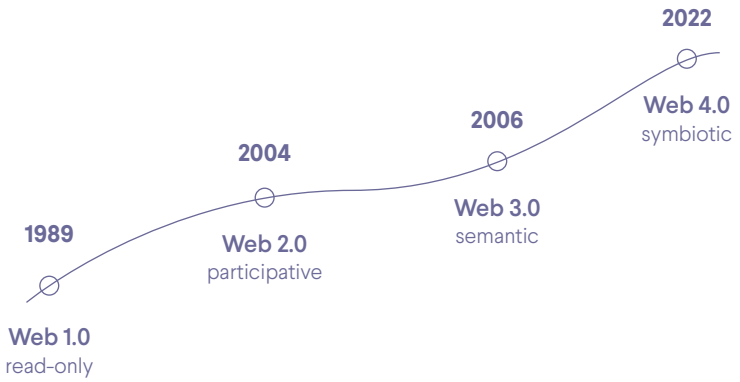
In 2004, Web 2.0, also called the 'Participative Web' (Sen Murugesen, 2007), was coined. This version enabled people to share their own views and ideas with others across the globe through something called 'social media' (Solanki & Dongaonkar, 2016). Social media platforms like Facebook and YouTube made their appearance and became highly influential platforms where people started to interact with each other in a digital environment. Eventually, smartphones were created, making mobile computing a human habit.

Some years later, Web 3.0, the so-called Semantic Web, added machine learning to the Web. This reduced human cognitive efforts required to deal with the internet (Solanki & Dongaonkar, 2016). The idea behind Web 3.0 is to decrease human's tasks and decisions and leave them to machines by providing machine-readable content on the web (Hamed et al., 2011). The machine learning ideas of Web 3.0 are applied in the algorithms which can be found in almost all digital resources nowadays, think about Siri from Apple or about a Fitbit.

Now, in 2022, the tech industry is talking about a 'Web 4.0', where augmented reality, artificial intelligence and 'big data' should have a prominent role. The so-called 'Symbiotic Web' strives to create an environment where machines and humans can interact in symbiosis, meaning that the goal is to connect all smart devices in the virtual world, in real-time (Mbunge et al, 2022). Therefore, it should assist for example in health self-monitoring and self-learning through web platforms, making digital systems even 'smarter'.

Conclusion

The developments of the internet show briefly that digitisation influenced how people behave and function as citizens of a physical world. People started to live, work, and interact not only in the analogue environment anymore, but also in a digital, virtual environment (Ribble, 2015). Through people's devices and its incentives, the online environment started to blend in more and more with the offline environment, making people not only 'normal' analogue citizens anymore, but also digital citizens. But what does it mean being a 'digital citizen'?



02.

a study on digital citizenship

In the early 1990's, simultaneously with Web 1.0, the term 'digital citizenship' evolved. The concept started from a perspective that to be a fully participating citizen in a digitising world, people need access to the internet and technology (Ribble, 2015). This was the very first condition pointed out in relation to being a citizen in a digitalising environment. From that point onwards, together with the digital developments, the term digital citizenship quickly evolved, making "digital access" no longer the only important condition to participate in a digital environment anymore.

When asking people what digital citizenship means to them, most of them think it has something to do with their DigiD; being recognized as a citizen in a digital system. This points out the communal unfamiliarity with the concept. Also, when diving into the definition of the concept, it turns out that digital citizenship is not clearly defined at all. It has no ambiguous definition and therefore it becomes very hard to grasp what it means.

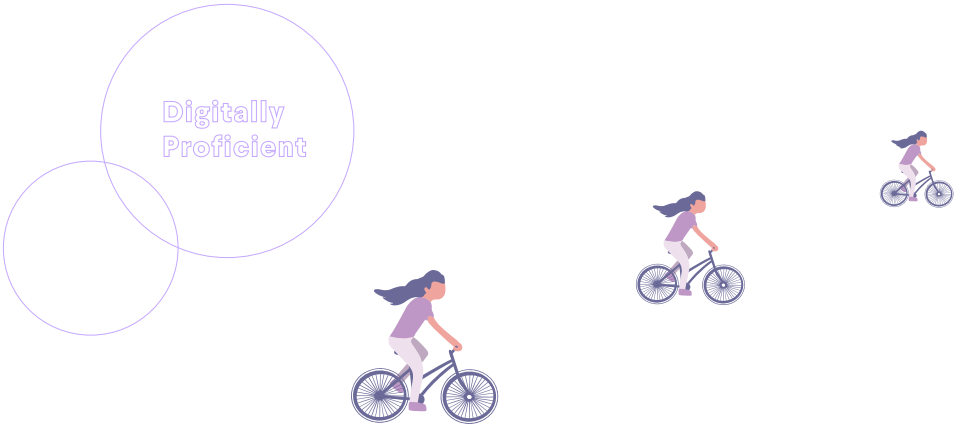
Since the project finds itself in the domain of digital citizenship, it became of great importance to specify and discover how digital citizenship is seen now generally, by institutions, within literature, within reports and by domain experts. To get a clear overview, elaborate research on its definition has been carried out, diving more explicitly into the interpretations of the concept.

Study on existing frameworks of digital citizenship: how is it defined?

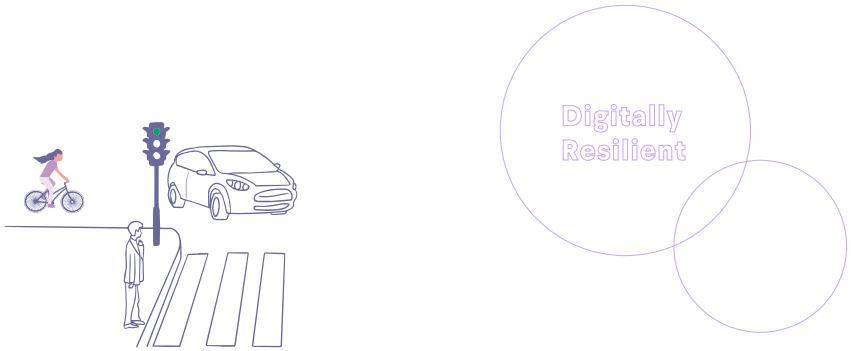
When diving into the definition of digital citizenship it immediately becomes clear that there are multiple frameworks and interpretations of its definition. Almost all frameworks are translated into competences; emphasising the message of "what should people learn to become a digital citizen". To be able to evaluate the meaning of digital citizenship and its so-called competences, bits out of different frameworks were taken, creating a combined overview.

Within most frameworks, digital citizenship comes down to being digitally proficient on the one hand and being digital resilient on the other hand. Digital proficiency is explained as the practical skills and theoretical knowledge people 'need' in the digital space, such as knowing how to cut and paste something in a text editing program. Digital resilience is interpreted as the more critical skills and knowledge citizens 'need' in the digital space. It focuses on the attitudes and values, such as critical reasoning and managing on- and offline usage.

The division between the practical and critical skills these current frameworks make, can be interpreted by the metaphor of learning how to bike. First, you need to get acquainted with the bike. You need to know where to put your feet, how to use the brake and you must find your balance on the bike. None of it goes automatically in the beginning. This part of the process can be seen as the practical competences of digital citizenship; like knowing how to remove an app or adjusting the volume of your telephone.



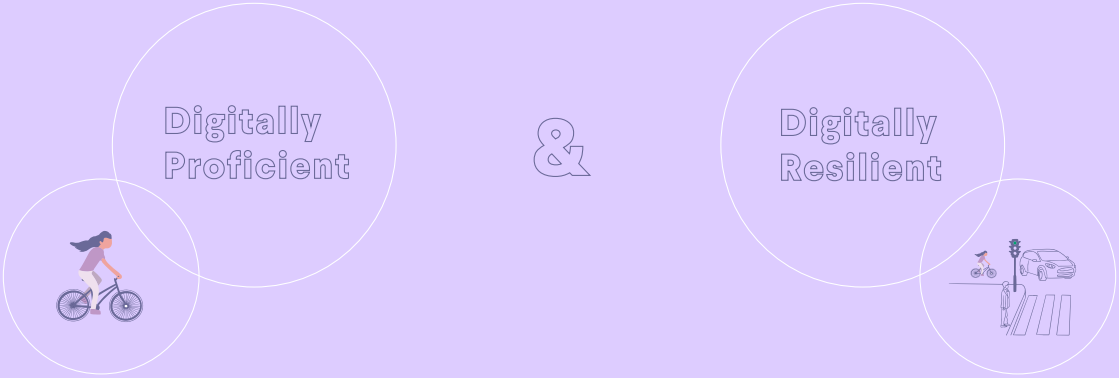
When you know the practical side of biking, you are taking the next step, which is participating in traffic. To be able to participate you need to understand how traffic works and how to behave when taking part. In Holland, children even receive a cycling diploma at primary school, when having passed their cycling test. Participating in traffic and learning how to behave in it, can be seen as the attitudes and values to move resiliently through the digital environment. Like the ability to recognize disinformation and fake news for example.



This metaphorical comparison points out a very important inconsistency of how society is now dealing with its digital environment. Where we do not let our children bike on the streets on their own, we do let them ‘bike’ alone freely in the digital environment. When you know how to ride a bike, it doesn’t mean you know how to participate in traffic. So, when you know how to operate a digital device, it doesn’t mean you know how to participate within the digital space the digital device gives you access to.

digital citizenship

meaning that people are digitally proficient and resilient to participate in the digital world



PRACTICAL SKILLS **Skills & knowledge**	access to internet	CRITICAL SKILLS **Attitudes & values**
operation	operate digital devices and applications	**health & wellbeing**
information	gather information	**authenticity**
communication & social	communicate with others	**ethics & empathy**
creation	create	**digital identity**

Framework based on Netwerk Mediawijsheid et al, 2021; DQ Institute, 2019; Council of Europe, 2017; Kennisnet, 2021; Van Deursen & Helpser, 2020.

An overview of the competences of digital citizenship

As previously mentioned, there is a division between practical and critical skills when interacting with the digital environment. But more importantly, when analysing the framework from a more zoomed out perspective, it shows that on top of this division, there are four levels of how citizens interact with their digital space. These four levels show the actions citizens are performing when entering the digital environment. After being able to access the digital space, the first level of interaction is the operational level which explains citizens' relationship with their digital devices. The second level is focusing on gathering information within the digital environment. The third level explains the communication with others and the fourth and last level shows the creation of content and data with the use of digital devices. Therefore, when talking about designing for digital citizenship, these four (or five when including accessibility) levels can be seen as useful intervention moments to take along in the design process.

When zooming in again, to the practical and critical skills, it becomes visible that the frameworks distribute skills and knowledge on the one hand and attitudes and values on the other hand underneath these four interaction levels. The frameworks take a competence-based approach, describing the skills citizens 'need' to 'become a digital citizen'. To give an idea of what the frameworks understand under the 'skills of digital citizens', a brief explanation per interaction level is given.

Operational skills and knowledge connected to health & wellbeing

The operational skills and knowledge are about being able to use and understand digital applications, devices, and software in a very basic operational sense. Such as being able to send an email with an attachment or change a password (Netwerk Mediawijsheid et al., 2021). Health and wellbeing are connected to these skills and knowledge, focussing on the ability to manage on- and offline in a balanced way (DQ institute, 2019), being able to secure your own data by using the right settings (Council of Europe, 2017) and being able to reflect on your own media and device use (Netwerk Mediawijsheid et al., 2021).

Information skills and knowledge connected to authenticity

Information skills and knowledge stands for finding, selecting, processing, and using relevant information (Kennisnet, 2021). Also, the ability to store, organise, find back, share, and present this information plays a role (Netwerk Mediawijsheid et al., 2021). Within that, authenticity is highly important. If people accept not reliable information as reliable, it becomes very difficult to form an informed opinion. Therefore, being able to find, organise, analyse, and evaluate information with critical reasoning (DQ institute, 2019) is of great importance. For example, being able to recognize disinformation and fake news (Netwerk Mediawijsheid et al., 2021).

Communication and knowledge connected to ethical behaviour and empathic interaction

The combination of communication, social skills and knowledge ensures that citizens can use communication (social media) applications and understand which medium is used for what purpose. Developing positive relationships, exchanging significance and bundle knowledge by using the internet technology (van Deursen & Helsper, 2020) is part of that. Online ethical behaviour and empathic interaction with others play a big part within digital communication. For example, the ability to recognize and understand feelings and perspectives of others (Council of Europe, 2017) and to be sensitive to others needs and concerns online (DQ institute, 2019).

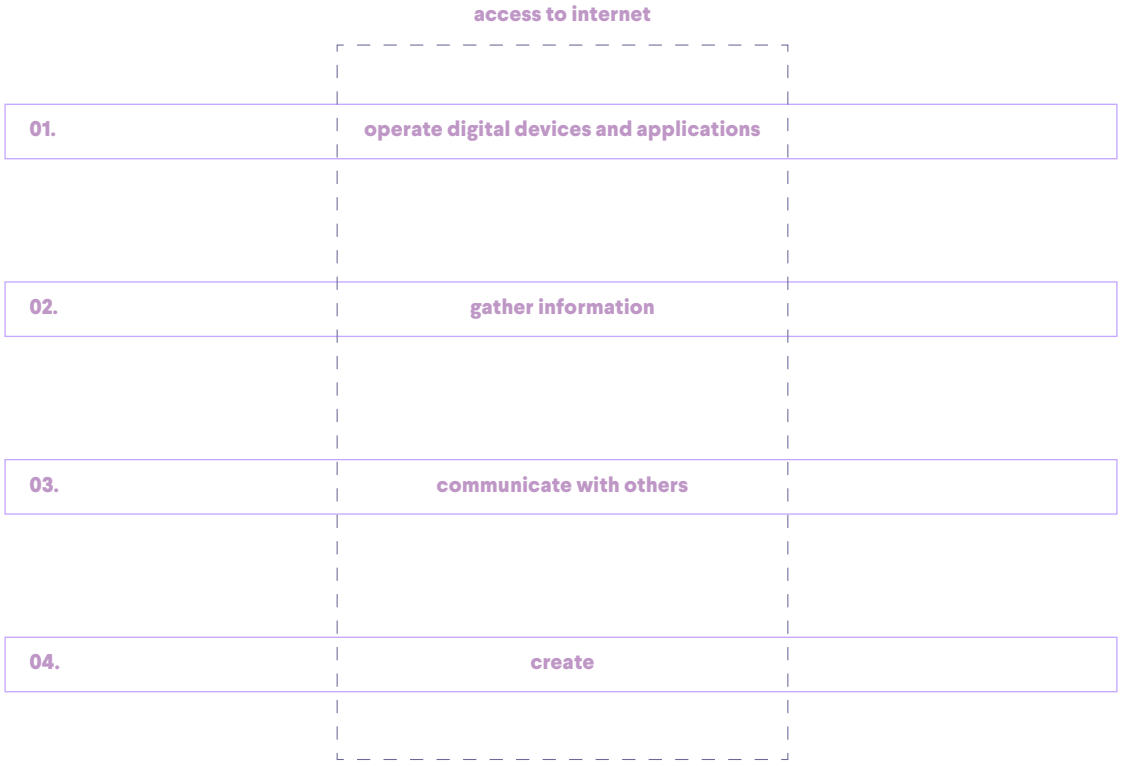
Creation skills and knowledge connected to digital identity

Creation skills combined with knowledge implies expressing creativity through using digital applications, being able to create your own media content (Netwerk Mediawijsheid et al., 2021). The creation skills and knowledge come hand in hand with building and managing a digital identity, where it plays a big role in managing your digital safety, security, privacy, and footprint (DQ institute, 2019).

Conclusion on how digital citizenship is framed

The most important thing that the combined framework points out, is that there are four ways to interact digitally, when digital access is granted. These four levels of interaction show how people are interacting in the digital environment and which activities are important to consider. However, which is immediately noticeable is the clear focus on competences, where a lot of responsibility is put on individual abilities. The existing frameworks about digital citizenship highlight what people should know and how people should behave to become a digital citizen. As a result, digital citizenship is being framed as an individual competencies problem. That is, in my opinion, not the most promising frame to use when addressing the subject of digital citizenship.

Therefore, this project takes a different approach on how to look at digital citizenship. It investigates 'citizenship' (which is in its essence closely related to the concept of digital citizenship) and explores how society is related to its digitising environment today and in the future. By choosing this approach, the project will focus strongly on how society can be more involved in shaping their digitised environment.



03.

a societal perspective on digital citizenship

Dissecting digital citizenship and defining the scope of the project

If we take the term citizenship apart from the 'digital' for a moment, and dive into the understanding of 'citizenship' on its own, Ribble (2015) states that "the term citizen is most commonly defined as a native or naturalised person who owes allegiance to a larger state or collective and who shares the rights and responsibilities afforded all members of that collective." As the definition states, a citizen both works for and benefits from a larger society. Based on what Ribble says and based on the idea that we (as citizens) not only interact in a physical world anymore, but also in a digital world, it can be concluded that the idea of citizenship works similarly in the digital environment. Nowadays, citizens not only work for and benefit from an analogue society but also work for and benefit from a digital society. Meaning that we as humans can shape how we use digital technologies. Just like Noreena Hertz (2021) explains: "Society isn't only done to us, we 'do' society too, we participate in it and shape it.".

But how can society shape a digital environment, when there is not enough time to get acquainted with our new digital extensions? And when it is simply not clear yet what effects digital technologies have on us? The internet became one of the largest worldwide free market experiments, making society accustomed to social media and other algorithm-based platforms. The seduction of technology is that it makes it possible to do things in an 'efficient', 'fast' and 'convenient' way. This seductive aspect has a big influence on how we perceive, feel, think, and act in both a digital environment as well as a physical environment. Like Hans Schnitzler (2022) says "we are afraid that robots will start to resemble humans. But the biggest danger is that people will start to resemble robots.".

However, digital technologies did not only bring us 'bad' things, as it sometimes may seem. Because of digitisation, we can have more meaningful contact with family members on the other side of the world. Because of digitisation, we can access and distribute meaningful information much faster. Because of digitisation, teaching programs can be made that fit children's individual needs and personal level. Digitisation has brought many opportunities, but not everyone is able to benefit from it yet.

Why? According to Nicole Goedhard (2021), that can have many reasons. It may have to do with people's socio-economic position. But also due to gender differences and the idea that ICT (Information and Communication Technology) is masculine. Within this masculine framing of ICT, there is a lot of shame among both women and men. This makes both women and men who experience this shame less eligible for digital technologies. Also, there are many differences between people who use or don't use digital technologies in their work environment. For example, people who sit behind the cash desk or work in construction, do not have the opportunity to develop digitally every day. Also, cultural differences play a role in the reason why not everyone is able to benefit from digitalisation. In some cultures, the child is put first, which means that mothers are less likely to develop. Lastly, generation differences also play a big role in how the digital world is being perceived. Older generations seem to be more sceptical in terms of technological progress, whereas younger generations don't know how it would be different.

For the scope of this project, it has been decided to look at generation differences within experiencing the digital environment. The opportunity is seen in bringing parents and children closer together and challenging them to learn from each other. Exploring the digital environment together. To know how to leverage the difference in generations, it is important to empathise first with parents and children. Therefore, their digital environment needs to be researched, coming from their perspectives. In the next section, an overview is given on how different generations (parents and children) perceive their digital environment currently.

The digital environment for parents and children

So, the digital world is growing at an accelerated pace, while we, as society, do not develop just as fast. The young generations seem quite skilled users of their touch screen devices, but are they as fledged as they seem with it? As stated before, almost half of the young people are overestimating their level of digital skills. At the same time, their parents are struggling with parenting in an area where they did not grow up themselves. This creates tension within the family space and leads to the important question: what is the difference between how parents and children experience their digitising environment? To answer this question, literature research, expert interviews and semi-structured interviews with both parents and children are executed. By empathising with the experiences of parents and children, a clear inside in their lives can be given. First, the environment of the child is being highlighted, followed by the environmental experiences of their parents.

04.

a children's perspective

This section will be about children and how they experience their current digital space. To understand how children interact with their environment, it is meaningful to first understand how their lives are being influenced by external and internal factors. Second, research about the effects of digital content on children is mapped out, to understand the consequences and opportunities of digitisation. Finally, interviews with children give insight into what it means for them to live in a world where online and offline are intertwined.

The external influences on children's lives

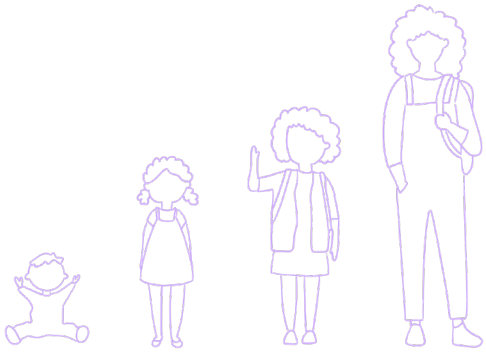
There are several things that influence the development of a child, as shown in the ecological model of Bronfenbrenner (1980) below. The micro level shows the relationships between the child and its direct environment. The meso level stands for the influence of the subsystems on each other, for example parents consulting with teachers. According Breat and Bijttebier (2014), the parent's workplace is also such a system that can play an indirect role in the development of a child. "For example, parents who work in shifts cannot always care for their child after school, which has implications for parenting." (Breat & Bijttebier, 2014). The macro level is about social factors such as the economic climate or policies of a government.

Interpretation of the model

When looking at the ecological model of Bronfenbrenner from the perspective of the digital age, it can be concluded that the digital space is more and more integrating in all three levels of the ecological model of Bronfenbrenner. Social media and digital content have an important socialising influence; kids can learn very easily from it. They can learn about what is expected. If a message in the media is the same as the message children get at home from their parents, it even has an amplifying effect (Piotrowski, 2021). However, not only children are easily influenced by the digital space, also parents, institutions, governments, etc. are strongly influenced by it. This makes the digital space more and more integrated and powerful in our society and development. Therefore, it is becoming of great importance to all of us that we are starting to understand how the digital space works and how to relate to it.

The internal influences on children's lives: the developmental stages

Next to the external influences, the internal influences, like characteristic behaviours linked to age stages and developmental tasks, play a big role in children's interaction. The model that explains this, is based on the development tasks model from the book "The behavioural therapy process in children and adolescents" by Landsheer, Prins and Nijhoff-Huyse (1991). In this section, the different development stages of children will be explained. Each development stage will describe what a child is learning, what the corresponding characteristic behaviours are and how children respond to digital content in a certain age period. The response to digital content is based on research from the Kijkwijzer and expert interviews with communication science professor Hans Beentjes and developmental psychologist Amy Blitterswijk.



	LEARNING	CHARACTERISTIC BEHAVIORS
1 BABY	• sleeping and eating habits • social responsiveness • attachtment • sensorimotor organisation	growing from a little helpless human being into a walking child
2 3 4 PEUTER	• socializing • from affection to independent behavior • increase frustration tolerance • motor skills • cognitive skills	• from walking to an exploring • imitating • stubborn
5 KLEUTER	• creating own behavioral style • share with others; less egocentric • more social behavior • go to school • language development	• want to do everything themselves • arguing and competing with siblings • sometimes withdrawing • proud • sometimes seperation anxiety
6 7 8 9 10 11 SCHOOL KIND	• adapting to peers • cope with larger social environment • school and teaching material • concentration and discipline • shaping own norms and values	• play initiatives, compete • make friends, function in groups • social anxiety • sometimes school phobic complaints • less dependent and affectional bahavior • more independent, more conscientious
12 13 14 15 JONGE ADOLESCENT	• coping with changes in body • considerating norms and values • build up own frame of reference • building identity • interact with peers and others skillfully	• physical complaints • hormonal problems • debating, arguing, rationalizing • self-talk, guilt, fantasizing • rebelling against parents • worshipping idols • problem solving, friendships and enmities • sometimes social anxiety, withdrawal • apathie
16 17 18 ADOLESCENT	• more independent from feedback • detaching from parents • develop more self-esteem • position determination • resolving loyalty conflicts • processing loss and goodbye	• experimenting with extreme bahavior • testing boundaries • over- and underestimating • disapproving oneself; depressed moods • behavior associated with feelings of fear • agression, guilt and sadness

RESPONSE DIGITAL CONTENT

BABY

sensory stimuly are important for involving the little ones

PEUTER

visually oeriented

KLEUTER

fantasy and reality are easily confused

SCHOOL KIND

- distinction cartoons and news is easy
- having trouble recognizing what is ‘fake’
- low empathy
- easily persuaded to imitate behavior

JONGE ADOLESCENT

- recognise how things relate to each other
- better in estimating dangers
- able to reduce one’s own fear
- recognising themselves in media-figures
- having trouble finding own opinion
- keen interest in dangerous behavior
- use digital content to learn social lessons

ADOLESCENT

- great need for excitement and sensation
- great influence of peers
- attracted by dangerous, criminal behavior
- digital content can shape ‘what is normal’

The baby: 0-2 years old

During the age period from zero to two years old, a child needs to 'socialise' (Breat & Bijttebier, 2014). The child is 100% dependent on their parents; therefore, moments of affection are crucial within this period. The attachment relationship between parent and child is very important and influential, contributing to the development of children's language, cognitive and socio-emotional skills (Blitterswijk, 2021). Sensory stimuli are important for keeping the attention of the little ones (Koos & Openbare Bibliotheek Amsterdam, 2017).

The toddler: 2-6 years old

From the age of two, lots of motor skills are learned. A child grows from barely able to walk into a child that can jump and clamber. Big steps are also made in cognitive development, such as learning a language or problem solving. Children are developing in many areas during this age, which demands a lot from this age group. Therefore, rhythm and regularity are very important (Blitterswijk, 2021). From the age of three, touchscreen devices like tablets and mobile phones are becoming easy to use for digital novices (Britisch Broadcasting Corporation, 2020). When looking at the influence of digital content during this age, it can be concluded that fantasy and reality are easily confused. Something 'not real' can be experienced as very real (Beentjes, 2021). This is also the reason why the Kijkwijzer came up with age classifications for visual content, where the age of 6 is a turning point for scary and violent programs and movies. The age classifications can be recognized by the white dots around the ages in the table above.

The school kid: 6-12 years old

When a child turns six years old, it is defined as a "schoolkid" until the age of twelve years old. The focus lies on learning to read and write. In this period, there is much more demanded from children in the socio-emotional area. From the age of six or seven children are beginning to make a difference between fantasy and reality. The age of nine is a turning point for children in terms of 'fear'. Children under the age of nine are more afraid of certain things than older children; they can put things better in perspective in terms of 'year' or 'place', far away from their realistic lives (Beentjes, 2021). That's why the age of nine is also classified by the Kijkwijzer.

The young adolescent: 12-16 years old

At the age of twelve children turn into young adolescents until they are approximately fifteen years old. During this period, themes like autonomy are playing a big role, wanting to be independent. Also, children this age are behaving very impulsively because their prefrontal cortex is still developing (Crone & Konijn, 2018). In this age period, children sometimes overestimate themselves and have moderate self-insight (Jolles, 2017), which makes it more difficult to gain complete confidence to make decisions.

Also, the age of twelve is a turning point in the field of reality. From this age forward, children know more about reality and are more able to think ahead "what would be the consequences?". Therefore, children this age are more afraid of content about nuclear disasters for example (Beentjes, 2021). This makes the age of twelve a very important age classification for visual content.

The age of fourteen is a classification related to visual content. From the age of twelve, young adolescents are very good at copying norms from content, therefore the media are very influential during this period. The brains are highly susceptible to reward and social acceptance, but also to rejection and not belonging (Crone & Konijn, 2018).

From the age of fourteen, young adolescents are very good at understanding the differences between 'right and 'wrong', but that doesn't mean that they are less harmed by visual content (Beentjes, 2021). Violent, horror and pornographic visual content can still be harmful for the young adolescents, making sixteen a crucial age classification. Young adolescents often have very little experience with these themes which can give them a distorted view of reality.

The adolescent: 16-18/25 years old

From the age of sixteen, young adolescents turn into adolescents, until the brain is matured. The brain matures over a long period of time that can take up to fifteen years from the end of childhood (the end of childhood is around the age of ten) (Jolles, 2017). This means that the adolescent period can last until twenty-five years old. Within this period, the influence of peers is one of the biggest while adolescents are detaching from their parents. Limits are explored during adolescence, not being able to properly assess consequences. This makes eighteen the very last important age classifications for visual content, to distinguish which visual content is for adults and which is not.

Conclusion

As children are ageing, they become less dependent on their parents. Babies are 100% dependent on their parents, because of basic needs like drinking and eating. When getting older, children need their parents less for the practical things in life, but they need them more for social-emotional support. This is how the interaction between parent and child changes through time. Within this transition in interaction between parent and child, coordination and availability are very important (Blitterswijk, 2021). Coordination, meaning that the mutual expectations and roles between parent and child should be clear. And availability, meaning that the parent should be available for the child to build a healthy bond between parent and child.

What became noticeable during the pandemic, according to Blitterswijk (2021), was that parents are currently less available for their children because their heads are more often inside their phones. This is not beneficial for the parent-child relationship, because parents appear to be present while they are not available. This causes confusion for children, because children show certain behaviour and expect a certain reaction in return. You can imagine that when a parent is too busy with its phone (or something else for that matter) it can influence the attachment relationship between parent and child. Besides, children, especially when they are younger, mimic their parents' behaviour very easily. They are very vulnerable in terms of copying behaviour, also from other things happening in their direct environment, like digital media. This means that when parents spend a lot of time on their phones for example, children think they should do so as well.

Digital media have a very intrusive effect on children; they can hardly withdraw from them. This means that, when looking at the social development of children in this digital age, the addictive effect of digital content enables children to learn a lot from digital content but can also easily withdraw children from the physical world around them. Because of that possibility, it is important to be careful with digital media. There is a chance that children will develop less socially because of it. For children growing up in the digital era, it becomes more difficult to contact someone in real life for example (Noreena Hertz, 2021).

Children and their daily (digital) environment

How do children experience their digital lives? What does it mean for them to grow up digitally? Two design hackathons were done at the Public Library of Amsterdam, where two age categories were represented: three to seven and eight to twelve (see appendix C). Also elaborate interviews with thirteen children between five and eighteen were held in their homes to empathise with their perspectives (see appendix D). The most remarkable insights from the hackathon and interviews with children are categorised in four categories. These four categories emerged from the patterns that were recognized in how the interviewees are currently interacting in their digital environment.

categorie 1: 3-8 years old

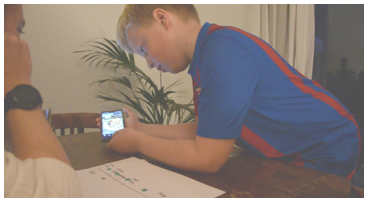
small digital consumers



categorie 2: 9-12 years old

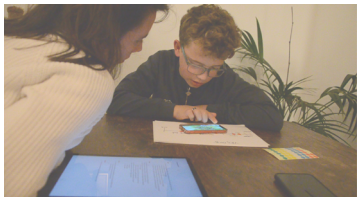
new socially digital participants





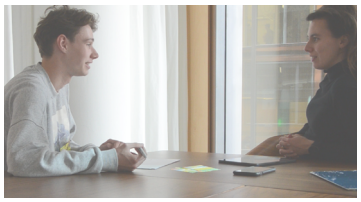
category 3: 13-15 years old

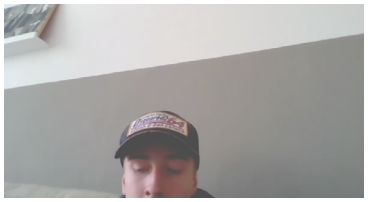
digital peer-to-peer fanatics



category 4: 16+

more aware digital users





From the age of three until eight, children can be seen as small digital consumers. From the age of nine, most children receive their own smartphone, enabling them to participate more directly and socially with their digital environment. A couple of years later, when children turn thirteen, it's expected from them to use their digital devices also in the school environment which opens a lot more doors. Furthermore, social media becomes highly influential within this age group. The last category are children aged sixteen to eighteen, who are showing a more critical relationship with their digital environment.

3 - 8
small digital consumers

Category 1: Children from 3-8 years old - small digital consumers

Around the age of approximately three years old, children are becoming motorically capable of operating touchscreen devices, more or less, independently (Britisch Broadcasting Corporation, 2020). The interviews showed that until around the age of eight years old, children mostly use tablets, the phones of their parents or smart tv's. The interactions with the digital environment are mainly based on consuming music, videos, and games. YouTube, Netflix and game apps (like Roblox) are highly influential platforms.

During the interviews, many children indicated that they are depending on their parents to give permission for downloading games and that their parents sometimes look at what they are doing on the devices. Also, children indicated that they spend a lot of time on digital devices, they imitate their parents saying that they are "addicted". The small digital consumers are mostly guided by their parents on how much time they spend on their digital devices. But apart from arguing about screen time or asking for help with settings, children do not discuss many things about their digital environment very often with their parents. The biggest issues within this age group seem to be based on practical problems with their digital devices, such as videos that are not loading or screens that are broken. When asking this age group if they know what the internet is or how it works, they mostly don't know it yet precisely. Sometimes things caused by the internet are even called 'magic' by this age group.

"I spend more time on the Ipad than my parents, to play games. I am addicted. I also talk to the teacher via the Ipad."

-- Levi, 6

9 - 12
new socially digital participants

Category 2: Children from 9-12 years old - new socially digital participants

Around the age of 9, the digital consumption reverses into interacting mostly socially. Children become more independent, having their own smartphone which they use for communication. As seen in the development of children, friends become more important at this age. Therefore, this aspect becomes more important in the digital world as well. The interviews showed that children are starting to use social media platforms like Tiktok, Snapchat, Instagram and WhatsApp but they also start interacting with friends via games like Clash of Clans.

Children this age are starting to value their privacy, wanting to keep certain things private, also from their parents. One interviewee spoke about Instagram being like his diary, which he wanted to keep for himself, not to be seen by his parents. Online bullying, excluding someone from a group and foul language are 'risks' these children experience. Privacy is a well-known topic within the internet safety theme. Another 'danger' these children are aware of is that people can pretend to be someone else on the internet (referring to hacking or phishing). Screen time still plays a big role at home. However, children point out that their parents are also spending a lot of time on their digital devices, which they think is not fair. Sometimes their parents even use them when they are bringing them to bed. These kids know and understand the meaning of words and concepts like 'digital' and ' online' very well. Although, the distinction between online and offline is not really visible for them since these kids grew up within a world where digital and non-digital have always been intertwined.

> **"What did I do before I had my smartphone?... I think I played on my Ipad."**
>
> -- Cas, 10

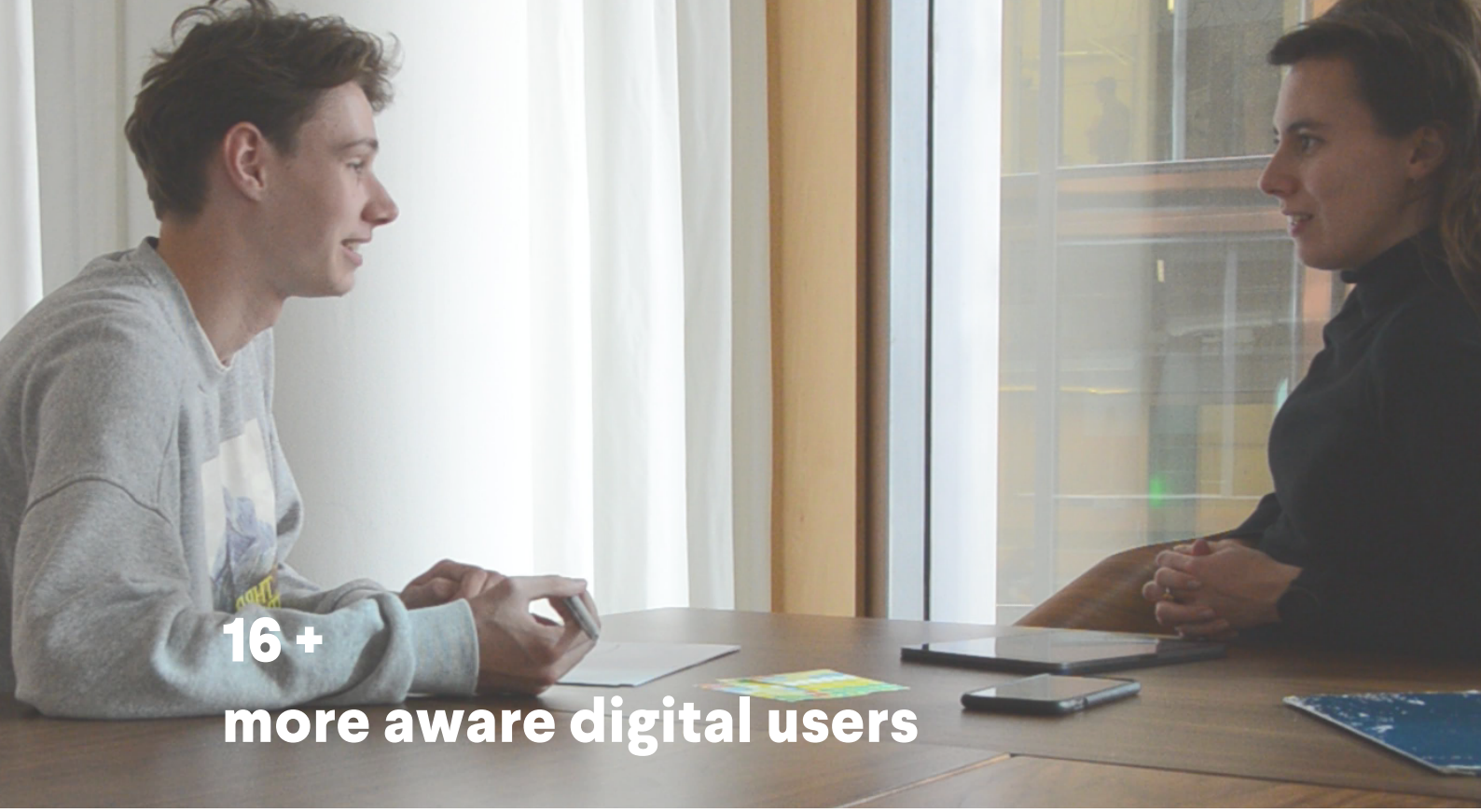
13 - 15
digital peer-to-peer fanatics

Category 3: Children from 13-15 years old - digital peer-to-peer fanatics

When children are attending high school and become young adolescents, the use of a laptop becomes suddenly more important. Laptops are needed at home, at school, and for homework (creating PowerPoint presentations, reports etc.). At the same time, smartphones are becoming objects of high importance at this age, enabling the youngsters to be in constant contact with peers. They take their smartphones everywhere they go. Fear of missing out is one of the main reasons for this behaviour. Around this age, children start to feel uncomfortable telling their parents about all the things that are happening on their phones. They have the feeling that their parents will never understand what they are doing, finding it really annoying that they always have to explain everything. “When my parents stand behind me and look at my phone, they can see what I am doing, right?”. Therefore, young adolescents prefer discussing these things with friends instead of parents.

“My parents don’t need to be on their phones all the time, but we have to! Otherwise, you don’t know what is going on in the world, like if your friend broke up with her boyfriend.”

-- Julia, 13



16 +
more aware digital users

Category 4: Chrildren from 16+ - more aware digital users

From the age of fifteen and onwards, the interviewees showed a more conscious sense of digital use; reflecting more on screen time, social media use, privacy, and experiences on how it affects their self- image. Independent use of digital devices grows like learning new programs (e.g., Fusion 360) for school by themselves via the internet instead of asking their parents or teacher. Also, preferring to spend time with their friends physically starts to grow from this age.

During the whole adolescence, awareness about the consequences of interacting in a digital environment grows, but mostly parents are kept out of the conversation. Mostly only when something very negative happens, adolescents find their way towards their parents to talk about it.

"I don't talk to my parents about these things happening on Whatsapp. They won't understand."

-- Marten, 17

Conclusion

Out of all interviews, it can be stated that for the children who are growing up in this digital era, there is less and less distinction between what they perceive as online and offline. Children are having a hard time to stop watching a movie, playing a game, or scrolling through Instagram. Digital activities are very much intertwined in their daily lives, seducing them.

"What did I do before I had my smartphone?... I think I played on my Ipad."

Children experience that their opinion differs from their parents, most of the time, in terms of digital possibilities. Therefore, they don't like to talk about it with their parents because they "won't understand it and always use the excuse that I have to go outside more" (Esmee, 13). Most of the time when something negative happens digitally, children inform their parents. Therefore, the positive aspects of their digital environment are more invisible for their parents. This could give their parents a distorted view of digital reality.

In terms of practical phone skills, children learn a lot via their social media channels or the games they are playing. When children need to know something about their smartphone's settings, they often do learn some things from their parents. However, when children are getting older (around the age of nine), it's becoming the other way around. This has to do with most children getting their first smartphone. From that age, children are helping their parents with setting up their devices, helping them navigate through their phones and explaining to them how certain apps work. In their spare time, children indicate that they feel like they spend more time on their digital devices compared to their parents. The curious attitude of children helps in adapting quickly to digital changes, they are fast in discovering new programs and apps.

05.

a parent's perspective

It is clear how children perceive their 'digital' environment, but how do parents deal with it? What does it mean for them to live and parent in a world that is digitising? And how do they deal with their children growing up digitally? At the design hackathons with children in the Public Library of Amsterdam, guerrilla interviews with parents were executed (see appendix C). Also elaborate interviews with ten parents were done in their home environment to empathise with their perspectives (see appendix D). In this section, the most remarkable insights out of the hackathon and interviews with parents are summarised to give a clear picture of their point of views.

Parents and how they experience their digital environment

Most parents are getting along okay digitally, but often ask help from their children or partner. Also, most parents have the feeling that they cannot keep on track with the digital technological developments and therefore feel less need to stay up to date. "I didn't need it before, so why would I need it now?".

Basic phone skills, like sending a WhatsApp message, is done easily. Most digital devices of parents are used for, what they call 'practical matters', like online shopping, booking a holiday or reading the news. WhatsApp, Twitter, LinkedIn, Instagram, and News apps are platforms most parents use and know. Work plays a big role in parents' lives, determining their level of digital skills. In particular, computer skills are often tied to parents' work. Microsoft office, mail, and websites to arrange travelling, are commonly used on the computer.

Parents notice that they cannot ignore the digital possibilities anymore, it is inevitable. On the one hand, parents point out that they value doing other things more, than spending time with their digital devices. On the other hand, they are confronted by their own screen time. Something parents love about their digital environment is that they are being updated by their kids and family members via their phones. They also embrace the convenience of digital devices in terms of practical matters like internet banking and DigiD. However, they also worry about the pressure digital devices are giving them and their children; the obligation to be reachable all the time. Also, the interviewed parents felt sceptical about safety and how the internet affects their freedom when putting any type of personal information on it.

"If I forget my phone, I feel displaced. Like I have no connection with the world. That I am going to miss things from my children."

-- Sandra, 54

Parenting in a digital age

In general, parents are held responsible for teaching their children about values, social norms, and accepted behaviour (Livingstone & Byre, 2018), teaching them as much as possible. Also, parents feel the need to keep close control over the upbringing and learning process of their children (Koos & Openbare Bibliotheek Amsterdam, 2017). However, with the fast-developing technologies, parenting is becoming even more challenging. Especially since their children use mobile devices that are difficult for them to supervise, and technologically complex services that they might not understand (Livingstone & Byre, 2018).

The conducted interviews showed that most parents don't know exactly how to approach digital education at home, because they are experiencing more distance from digital opportunities themselves. A lot of parents have basic digital skills but feel insecure because they cannot help their children with everything on a digital level. Also, especially parents with young children, indicate they have their hands full running the family. Their busy lifestyles do not give them the freedom and patience to explore the digital possibilities or guide their children digitally.

"I have my hands full with running the family. Learning something digitally does not fit in that schedule."

-- Pieter, 46

3 - 8
parents with young children

Parents with young children (3-8 years old)

Parents with young children (three to eight years old) have feelings like “am I a bad parent when I put my child in front of the television while I am cooking?” which plays a big part in their insecurities and feelings of guilt. According to Broekman et al. (2018), if you talk to these parents, they always say they find it important that their children learn something from what they are doing digitally. However, they also select apps for their children that they can use independently so they have their hands free. And this makes sense because these new parents are having their hands full with lots of other things, like keeping the household up and running.

When children are younger, parents worry about “what will be a positive influence” and “what will be a negative influence” on their children. They mostly mis information about what kind of settings they could use that will help their children to see ‘safe’ and ‘proper’ content. Also, parents are looking for information about what will be ‘proper device usage’ in terms of health and screen time. Searching for channels, apps and content that will be “educating” their children. The available guidance is quite often way too overwhelming, offering way too much information and choices.

“I worry about what my children watch and how close they keep their devices to their heads. I have no idea how to regulate that.”

-- Elif, 36

9 - 16 parents with older children

Parents with older children (9-16 years old)

When children become a bit older, children become more independent from their parents. Parents notice that the roles are turning around in terms of help digitally. From the age of approximately nine, children are teaching their parents all kinds of digital tricks instead of vice versa. Parents indicate that their children are especially much better with their phones, teaching them lots of new things.

Parents have the feeling that they have insufficient insight into and control over what their children are doing and sometimes lack knowledge of how to deal with it. Parents feel challenged and are eager at the same time wanting to understand what is happening in the digital lives of their children.

> **"Sometimes I do ask my children: "what are you doing" and they respond "you won't understand". And, yes, I don't."**
>
> **-- Janneke, 45**

Conclusion

Parents have a hate-love relationship with the digital environment. Where children are fully absorbed in their digital environment, parents think they spend too much 'wasted' time on their digital devices. Parents have a less open attitude towards learning new things and adapting to changes. The digital environment makes them feel more vulnerable, hesitant, and not comfortable, which has a negative effect on their ability to learn. At the same time parents are curious about how media and the internet work and what kind of influence it has on their children. This makes parents very eager to know how they can guide and support their children in the digital era.

06.

conclusion

The current view on digital citizenship and the digitising environment

The current perspective on digital citizenship shows that there is a strong focus on individual performance and development. Competences play a prominent role in the frameworks of institutions, implying that when citizens possess all the competences, they automatically become 'experienced' digital citizens. There is a visible need to tell citizens what should be right and what should be wrong, because the digital environment is mainly seen as a big black box where humans are not in charge. Instead of making the digital environment more transparent or stimulating citizens to get involved themselves in shaping their digitising environment, different solutions are offered to citizens which involve 'protecting' themselves from the 'dangers' of digitisation.

When looking at the current relationship society has with the digitising world, especially from the perspective of children and parents, it can be concluded that the relationship very much differs between the younger and older generation. Children, who are currently growing up with all digital means available do not see a clear distinction between their on- and offline environment. For them, the on- and offline environment has become one environment. Therefore, it is hard to imagine how to live without digital devices and without the constant access to internet.

For the older generations, who did not grow up with all digital means available, it seems to be more challenging to keep up with the accelerated digitising environment. Integrating new technologies in their well-known routines is causing friction and is causing a love-hate relationship with their digitising and therefore online environment.

But how will this be years from now? When the younger generations, who grew up within a digitising world, are becoming the older generations, the parents? Will there still be this kind of tension between parents and children? What will our digitalized world look like in a couple years? And how will we relate to it? To answer those questions, a future world view is built in the next chapter.

02 the future context

01.

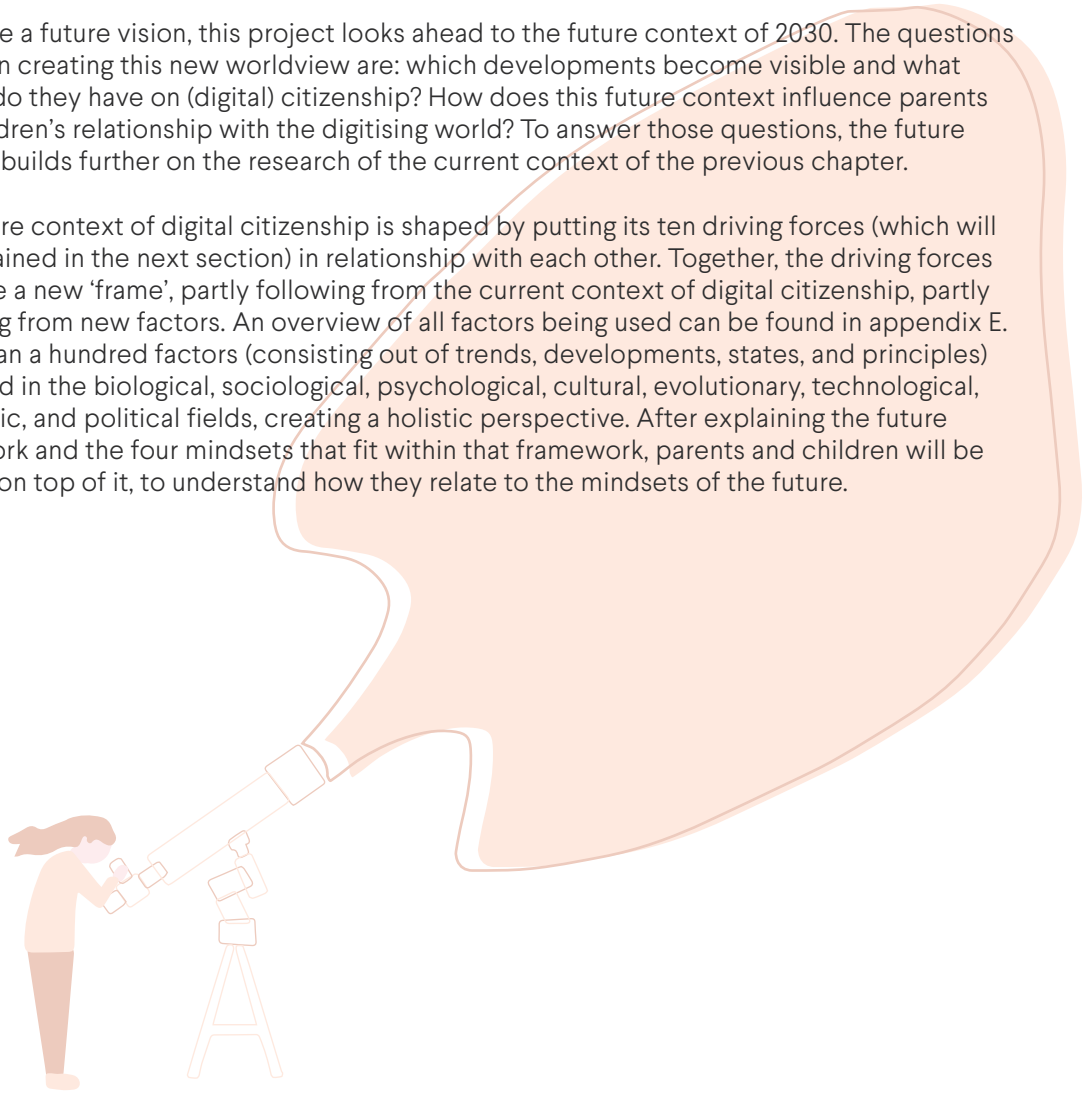
how will we keep relating ourselves to digitisation?

A holistic perspective

To design something that is of value in the future of our digitising world, it is important to create an understanding of how this future, most likely, will unfold and how parents and children will relate to this future. Following the ViP approach, building a future world starts by generating "building blocks", also called 'factors'. Factors are observations, thoughts, theories, laws, considerations, beliefs, or opinions and can be found anywhere (Hekkert & van Dijk, 2011). After collecting different factors in different fields, the future context can be structured by creating different clusters. The different clusters describe the underlying, emerging patterns in the future context of digital citizenship, called 'driving forces'. Those driving forces are used to create the future world view.

To create a future vision, this project looks ahead to the future context of 2030. The questions central in creating this new worldview are: which developments become visible and what impact do they have on (digital) citizenship? How does this future context influence parents and children's relationship with the digitising world? To answer those questions, the future context builds further on the research of the current context of the previous chapter.

The future context of digital citizenship is shaped by putting its ten driving forces (which will be explained in the next section) in relationship with each other. Together, the driving forces describe a new 'frame', partly following from the current context of digital citizenship, partly emerging from new factors. An overview of all factors being used can be found in appendix E. More than a hundred factors (consisting out of trends, developments, states, and principles) are found in the biological, sociological, psychological, cultural, evolutionary, technological, economic, and political fields, creating a holistic perspective. After explaining the future framework and the four mindsets that fit within that framework, parents and children will be plotted on top of it, to understand how they relate to the mindsets of the future.



02.

driving forces of digital citizenship in the future

01. Fear for the unknown

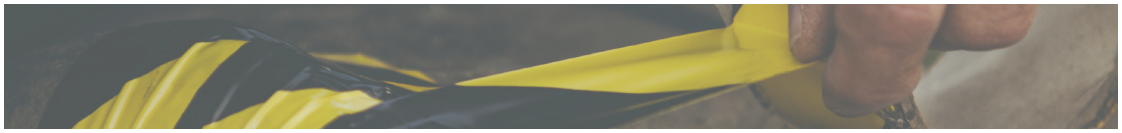
We like it when we are guided through an unknown space, it makes us feel less vulnerable. Within the fast-developing digital space, we find ourselves repeatedly in unknown territory, not knowing yet how we relate to the world around us. Therefore, feelings of fear grow, making us concerned about the impact digitalisation has on our lives and about the things we are losing because of it. The moral panic is causing us to increasingly have the feeling that machines are taking over, making us feel like losing grip on our security, certainty, and control of our own lives.

02. Guided by expectations: trusting your own confirmation bias

Our human behaviour flows from three sources: desire, emotion, and knowledge. What is known about the brain is that it filters the information it finds important and actively keeps information it doesn't like out. Algorithms and the free exchange of ideas are making it easier to be absorbed in our own reality. Selecting information which resonates with our value system can happen without any resistance. The 'computer says yes', making it easier for us to comfortably follow and act upon our own biases, living a frictionless life.

3. Challenging parenting

Between parents and children there is a difference in experience and stage of development, making it harder for families to create a common understanding of the space around them. Parents have the tendency to impose their own worldview on their children, whereas the impulsive brain of children allows them to quickly adapt to and copy things happening around them.



04. The quick-fix mentality

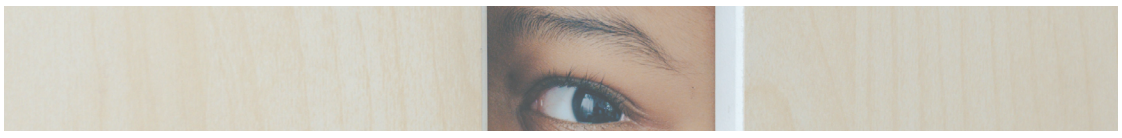
We are likely to purchase things that are quick, easy, instant, and convenient, paying even more money for something because we value time. The world around us is becoming more accelerated, making us less patient and more self-interested. When we have a concern about something, the solution is often found in a short-term quick fix which is not necessarily beneficial for the long term.

05. Benefits of a hybrid identity

The environment has a high impact on how the brain matures and in which direction a person develops. Our hybrid (part physical, part virtual) lives are increasingly determining how we look at others and at ourselves, socialising us in all sorts of ways. The urge to control your own idealised identity increases, which makes us detached from our offline personas. We are keeping up the act of sharing, creating a version of ourselves which can be edited and deleted to our personal wishes.

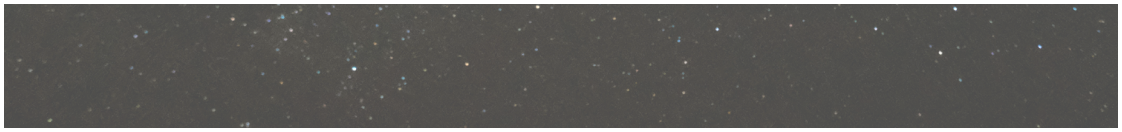
06. Tech as warm single blanket; connected but alone

We expect more from technology and less from each other. Tech has become a warm blanket, satisfying our comfort from the sofa. The contactless age makes us more comfortable with ‘easy’ contacts via social media instead of having a real conversation. “I would rather text than talk” becomes the new standard, making people have fewer real connections and face-to-face interactions.



07. The passion for curiosity

Being open to new things is in humans’ nature. To learn new things, content needs to be active, engaging, moving and should have a social connection. Also, curiosity can trigger our ability to learn and can trigger our flexibility. The passion for curiosity has enabled humans to adapt and push boundaries for tens of thousands of years. It allows us to remember information more easily and helps us to search openly for answers. But it can also make us search forever, encouraging us to find that ‘perfect’ answer.



08. If you cannot see it, you don't understand it

People find it more difficult to estimate the consequences or understand things, when they cannot see or hold it. The abstraction of footprints, sustainable footprints, but also data footprints are leaving invisible traces behind. Making it harder to understand the impact. 'Sustainable thinking' does not always mean 'sustainable action'. We are living a paradoxical existence where concerns do not automatically lead to actions but are accepted with a shrug trading them for small rewards.

09. Looking for self-confidence by competitive lifelong learning

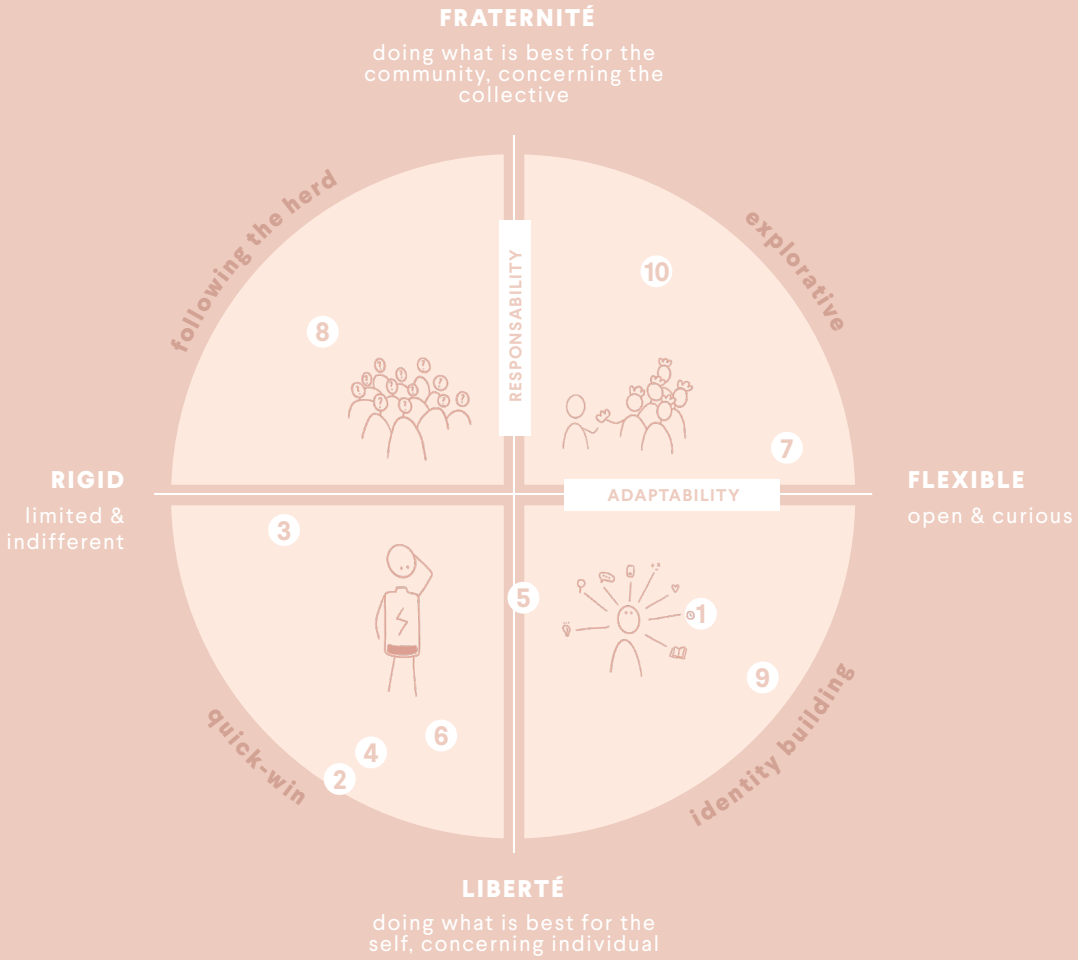
No longer diplomas, but skills are highly important for a successful career. This skills economy turns people into competitive human beings that feel they need to keep learning their entire life. Skills training is increasing, and people are massively taking online competency tests, looking for meaning, feelings of self-confidence and belonging. A big pressure is put on personal performance, making people feel less confident about themselves.

10. Empathy binds us together

Helping others is good for our health and well-being. Face to face interactions and body language help us to experience empathy. A good relationship brings us closer together and positively contributes to our social emotional skills, which we need to deliver emotional engagement and empathy.

03.

the (digital) citizen of the future



01 Fear of the unknown
02 Guided by expectations
03 Challenging parenting
04 The quick-fix mentality
05 Benefits of a hybrid identity
06 Tech as warm single blanket
07 The passion for curiosity
08 If you cannot see it, you don't understand it
09 Looking for self-confidence by lifelong learning
10 Empathy binds us together

The future framework describes the influence of digitisation on citizens in the future. When going through the driving forces, looking for their relationship, opposing forces are appearing. The coherence between the driving forces of 2030 can therefore be described by a two-dimensional framework. The horizontal axis describes the level of people's adaptive behaviour, ranging from a rigid attitude to a flexible attitude. The vertical dimension describes people's responsibility, coming from a *liberté* perspective on the one hand and a *fraternité* perspective on the other hand. Within this framework, *liberté* stands for "doing what is best for the self, concerning the individual interest", whereas *fraternité* stands for "doing what is best for the community, concerning the collective interest".

Four mindsets

When combining the two axes, four quadrants appear. These quadrants represent a particular future mindset or potential behaviour. Like the ViP method states, the quadrants do not represent different people. It is more likely that people would recognize themselves in (any) one of the four quadrants depending on the situation, their mood, the moment, and other contextual factors (Hekkert & Tromp, 2019). Within the mindsets, quotes are being used to express the corresponding attitude and behaviour.

1. Following the herd | "Together, we are strong"

- combining fraternité and rigid

The elusiveness of the digitising space in 2030 puts people frequently in unknown territory. People have a hard time understanding their new environment and how to behave in it, which makes them feel vulnerable and unsafe. Feelings of fear grow, making people more concerned about the impact of digitalisation. People are counting their losses, which overrule the profits of the new space. People are therefore preferring to avoid uncertainties. This moral panic makes people feel like they are losing grip on their own security, certainty, and control of their lives.

When people's safety is challenged, people tend to move with the group, to feel safer. From an evolutionary point of view, this herd behaviour can be explained by the nature of humans. Back in the days, humans could only survive if they enjoyed the group's protection and joined forces. Today, people are finding their comfort and grip in others; with the idea that a group possesses more knowledge than an individual person.

When experiencing new things or being in a new environment, people have the tendency to shift towards this mindset.

2. Quick-win | "I will follow my routines, because that will cost me less mental energy"

- combining liberté and rigid

In 2030 the acceleration of the digitising world is offering our brains a lot of extra and new impulses. People must make more decisions, taking in all these incentives, which costs a lot of mental energy. And when people spend a lot of mental energy, their brain is longing for things that cost less energy. This low-effort, comfort, and peace can be found in people's routines. People will value activities that don't require too much brain effort and where they can follow individual instinct which will decrease the number of decisions needing to be made.

The focus will be on achieving quick wins that cost less energy. The digitising environment nourishes this mindset by developing services that require low effort, making people's lives more efficient. People's individual comfort and desires are increasingly addressed which stimulates their self-centred behaviour and preference for immediate and short-term impact.

When people cannot keep up with the pace of changes, they get exhausted which makes them shift towards this mindset.

3. Explorative | "We can show you who you are"

- combining fraternité and flexible

People who want to be accepted in a group, have the tendency to follow the ideas of the group. This obedience can lead to taking more risks and thinking less about the immediate benefits or effects it has on their individual lives or identity. The fundamental need of belonging pushes people's boundaries, it can trigger people's curiosity, and makes people put themselves out there. Peoples more open and flexible attitude enables them to develop a social attitude towards others and to be more engaging. Being connected and behaving socially offers adaptive advantages.

Social media and other digital tools help in fostering this sense of belonging. It offers 24/7 peer-to-peer support, which makes people more confident. Besides, people are sensitive for vibrant and concrete information which is something the digital environment can offer people on an extensive level. Therefore, digital media become people's frame to the world which makes it possible for them to take different perspectives and see what they would have not seen otherwise. The fundamental need of belonging makes people move into this mindset.

4. Identity building | "I want to discover who I am and show what I've got"

- combining liberté and flexible

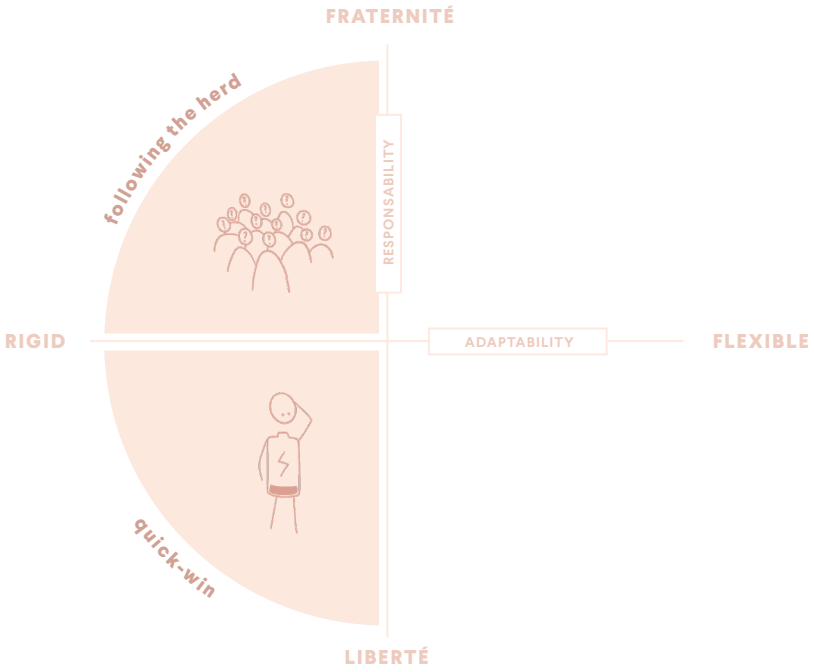
Our environment determines how we look at others and how we look at ourselves. The 'always connected' environment in 2030 makes it possible for people to constantly compare themselves with others which stimulates their urge to prove themselves and to break their routines. The pursuit for improvement and perfectionism, and the recognition and appreciation people receive in return for it, makes people feel better about themselves and happier in the short term. However, the urge to prove themselves also puts a lot of pressure on personal performance, making people feel less confident about themselves which can make them feel more isolated and lonelier in the long term.

The advent of having a digital identity enables people to shape their identity more thoughtfully. They can selectively present themselves online, pretend to be someone else, or use their identity as a unique selling point. Digital media can provide a mirror; how do we look at ourselves?

The infinite access to the online environment strengthens the need of always wanting to improve yourself compared to the ideal images of others from the environment. This makes people move into this mindset.

How do parents and children relate to these mindsets?

When looking at the four mindsets in connection to the relationship between parents and children, it can be concluded that parents will more likely find themselves on the left side of the framework. Whereas children will come more from the right side of the framework. This can be explained as follows.

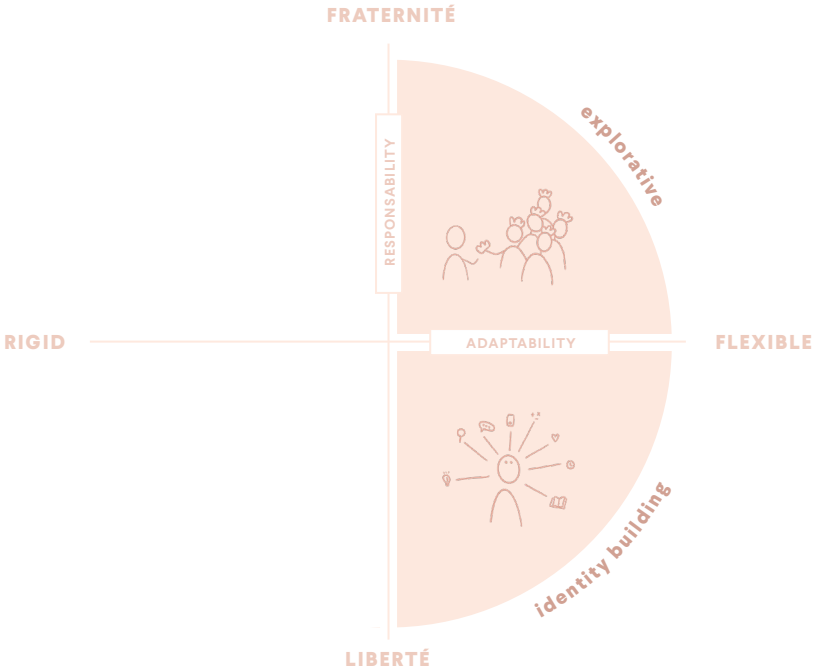


Parents

Parents hold themselves responsible for teaching their children about values, social norms, and accepted behaviour. They are their children's pillars of support, guidance, and love. How a parent was raised, their temperament, their ideas, values, norms, and their expectations play a big role in raising their children.

Parenting overall is a quite challenging job, and the fast-paced era makes this job far from easier. The constantly new environment is adding an extra level of difficulty for parents. Parents cannot keep up with the speed of digital innovations, like their children. It becomes more of an effort for parents to learn new things, process all new information and constantly take responsible decisions at the same time. Besides, parents already experience difficulties understanding the world of their children in general, let alone when there is an extra unknown digital level involved.

Therefore, the digitising environment is making parents feel vulnerable. They feel responsible for helping their children on a digital level, but they cannot not always do so. Not knowing how to deal with the unknown, makes parents have the feeling they are losing control. Which is something they very much like to have over their child's upbringing, control. Therefore, parents will be eager for information and guidance. These uncertainties and fast-pace make parents more tended to follow the examples of other parents and focus more on quick-wins.



Children

The older children become, the less they need their parents for practical matters and the more they need them for social-emotional support. Children become more detached from their parents, starting to look for freedom of action and independence. This daring behaviour fits well with the early stage of children's brains. The prefrontal cortex is still developing, which makes children's actions more impulsive compared to their parents (whose brain is already developed further).

These differences in brain structures ensure that children have a lower critical attitude than their parents. Having a lower ability to foresee consequences makes children more willing to try things. Therefore, children are better at adapting to changes and new environments. The new digitised space will invite children to explore in many ways and helps in discovering who they are. However, the endless access to social media fosters children's strong sense of belonging, which will make them even more susceptible to reward and social acceptance. This leads to an increase in non-resilient identity development.

Conclusion

The development of our digitising space increases the tension between how parents and children perceive the world around them. The upbringing of children is increasingly becoming a shared responsibility. The environment is becoming more frictionless, and the continuous development of skills and knowledge is challenging society's identities. People must continuously prepare themselves for a world they do not know yet. Parents and children respond differently to these changes. Within the role of a parent, adults will more naturally develop a rigid attitude towards their new and uncertain environment. This attitude challenges parent's adaptive behaviour, which makes it even more difficult to understand the world of their children and how to help them. Therefore, children will feel less heard and understood by their parents. At the same time, children are influenced easily by the constant stimuli around them, not overseeing all the consequences. This makes it easier for children to take more risks when missing the support of their parents. Because parents and children will be related to different mindsets, it becomes increasingly harder for parents and children to find a shared understanding of what it means to be a member of this digitising world.

04.

the design statement

What transition do we need to make

Within this changing world, parents and children need each other, especially since our lives are becoming more and more complex. Digitalisation has accelerated faster than our social development, making parents and children needing each other's support more than ever. Therefore, the generation differences should be leveraged so parent and child can learn from each other, creating a mutual understanding. To create this shared understanding, digital citizenship should be viewed from a philosophical perspective. When you want to participate in a new environment, you need to understand that environment. Therefore, society should think about how they relate to their new environment. About how they can interact digitally, taking responsibility and respect of people's rights into account, just like in the physical world.

Due to the accelerated rise of digital technologies, citizens do not always have the chance or time to get used to and discover the impact of their digital extensions. It's time to slow down. Together, we should find a balance in understanding both the positive and negative influences of digitisation. On the one hand, we need to discover how to avoid the mistakes the internet is seducing us to. On the other hand, we need to explore how the possibilities of the internet can make us thrive.

Within that discovery, the goal is to decrease the tension between how parents and children perceive the digitising world around them. This tension can be decreased by building a bridge between the physical and digital world. Bridging the 'two worlds' makes changes and improvements of our digitising environment more imaginable, for both parents and children. Besides, there needs to be a change from one-way traffic to two-way traffic. Parents should not be facilitated to impose more things on their children. Children should not be given the main responsibility to teach their parents in the digital domain. Instead, parents and children should discover the digitising world together.

Accordingly, parents and children should create a shared value set of what it means to them to live in this digitising world. To reach this goal, the design should guide parents and children to move closer towards each other, coming from different mindsets. The design should make the intangibility of the digitising world more tangible, highlighting the blind spots of both the digital and physical world. This leads to the goal where I want parents and children to create a common understanding of what it means to them to be a (digital) citizen. This can be achieved by showing them the blind spots of the world around them through the eyes of the on- or offline world, in an amusing way.

"I want parents and children to create a common understanding of what it means to them to be a (digital) citizen, by showing them the blind spots of the world around them through the eyes of the on- or offline world, in an amusing way."

03 the design qualities

01.

analogies

How can we make that transition, how can the design make an impact?

To achieve the desired impact, to make a change, the design needs to have certain qualities. The qualities are derived from three inspirational analogies. Analogies help designers to find alternative situations that match the desired effect. Out of those analogies, interactions can be analysed, and inspiration can be found.

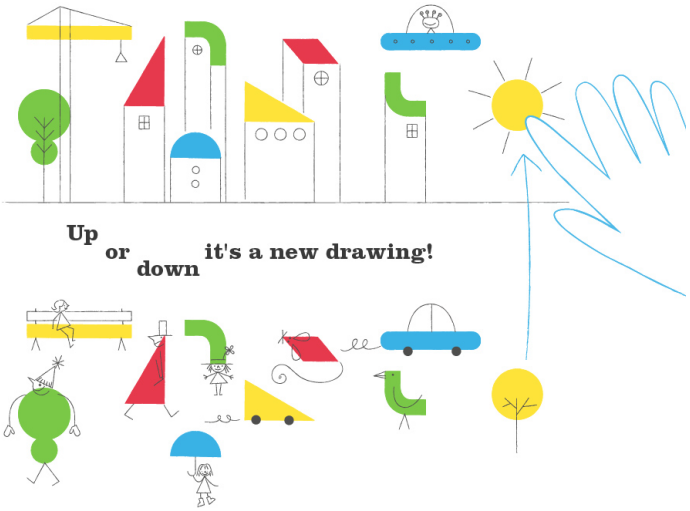
common understanding

The first inspirational analogy that is used for the design is about creating a stronger relationship and mutual understanding between parent and child. The focus lies in discovering new perspectives and adapting to it. To achieve that, inspiration is found in the interaction of parent and child building a soap box car together with random, scrap materials.

The random materials invite parent and child to step out of their comfort zone, discover together and imagine how the random materials can be used for the car. The interpretation of the materials by parent and child does not have to be the same. The goal is to discuss the materials and finally decide together on how to use it. When translating those interaction qualities to the desired impact the design should have, it becomes visible that the design should make both parent and child feel welcome to discuss their interpretation of the world around them. It should make them share their experiences and finally create a mutual understanding of how the two worlds relate to each other.

inviting

The second inspirational analogy focuses on inviting parents and children to bond. Therefore, inspiration is taken from the book “Wat zou je liever”, where absurd and ironic images trigger the user’s imagination. By making the stories so relatable, the book easily makes its users laugh. And what is known about laughter, is that when it is shared, it can strengthen the relationship (Kutz & Algoe, 2016). Through ridicule and communal fun, the bond between parent and child can be strengthened and the common picture of digital citizenship can become clear. So, the qualities of amusement, irony and recognizability were drawn out of this example.



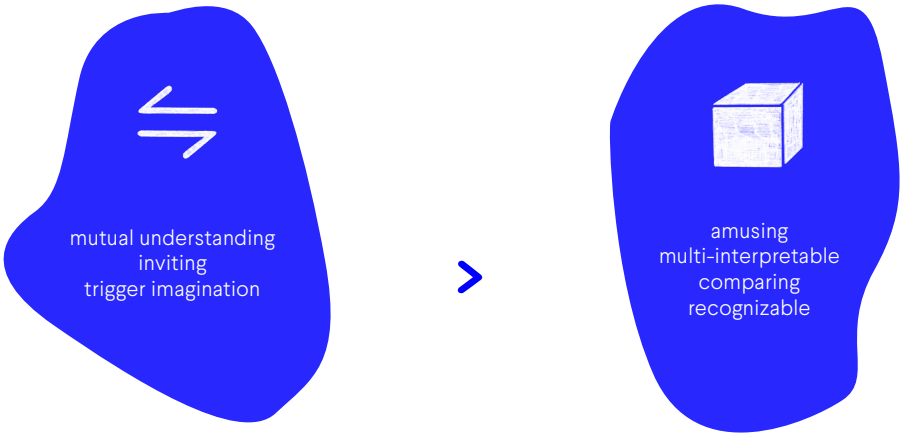
trigger imagination

To understand the digitising environment, and to understand how to participate in it, parent's and children's roles need to be made more tangible and imaginable. By adding elements of relativity and comparison, intangible events in the digitising environment can be better understood, for both parent and child. Therefore, the third inspirational analogy was found in the game Oh! Magic drawing app, which is a digital game for the computer or tablet.

What works very well in this game, is its use of one element that can have different appearances above and underneath a horizontal line. Above the horizontal line, elements behave like they are interacting with the air. Underneath the horizon, elements behave like they are interacting with the ground (street). When switching the same elements from the air to the ground (and vice versa) the meaning of the element changes, but the basic shape remains the same. Throwing the shape over the horizon and its comparing quality works well to think differently about that one specific element. It helps to see different perspectives. This interaction can be interpreted into the design, by making use of this comparing element. It provides guidance in the unknown area.

From interaction qualities to design qualities

To conclude, the interaction the design needs to convey is that it needs to let parents and children find a 'mutual understanding', it needs to be 'inviting' for both and 'trigger their imagination'. The qualities that the product needs to have to create that interaction are: 'amusing', 'multi-interpretable', 'comparing', and 'recognizable'.



04 the final design

01.

bubbel babbel

Out of the design statement and inspiring qualities, a design intervention relevant for the future context is created. Creative sessions, digital prototyping and evaluating the concept in the early stage of the design process (which can all be found in appendix F and G), helped in bringing the design intervention from a concept to a final design.

“Kom even uit je bubbelleven”

‘Bubbel Babbel’ is a conversation box that allows parents and children to discover their digitising world together. The materials inside the box invite parents and children to step out of their bubble and experience the online world through the eyes of the offline world, and vice versa. The box contains fifteen sets of illustrated cards, three conversation guides, six emoji’s which can be placed with the cards during the exercise and a digital instruction (link to instruction video below).

Each set within the box represents an everyday event in our lives. One card shows how the specific event will turn out in the online world and the other card shows how the event will turn out in the offline world. Sometimes this leads to absurd situations in either the on- or offline world, highlighting the inconsistency of the ‘two worlds’. Sometimes this leads to discovering that the on- and offline world is not that different at all. A mix of recognizable events, sometimes taken from the perspective of the parent and sometimes from the perspective of the child, are illustrated to make the cards a fun and interesting conversation starter for both.

The three conversation guides and emojis serve as tools to support the conversation between parents and children during the exercise and invite them to share their own experiences within the events. When all three guides have been used, parents and children have come to a shared understanding of how they relate to the digitising environment, and when they have nothing more to add to the conversation, they can move on to the next set.

Go to instruction video: https://youtu.be/UG3RPUEsmaQ

Fifteen daily events – the distribution of cards

The fifteen events are inspired on how parents and children perceive the on- and offline world around them, which are collected out of the project's research (user interviews and user evaluation). The cards are focussed around on- and offline (rather than digital versus non-digital) events since those two terms are easily understood by and more related to the digitising context of parents and children.

Further inspiration is found in the four overarching interactions people have with their digital environment, as seen before in the research phase: operating devices and applications, gathering information, communicating with others, and creating digital content. These four overarching interactions are used as guidelines for the topics of the cards.

1. Operating devices and applications

This theme is about the effects of digital devices and applications on people's wellbeing when being connected to the internet. Topics fitting underneath this theme are balancing on- and offline, loneliness, belonging, perfectionism, pressure, sensory experiences, screen time and protecting personal data.

2. Information

The information theme is about the effects of having easy and quick access to information and being able to generate information yourself. Topics like fake news, phishing, knowledge dissemination, trusting sources, constant stream of information, algorithms, and easily becoming an expert are part of this theme.

3. Communication

This theme is about the effects of easy communication with others via digital devices. It's about empathy, expectations, person to person interactions, confirmation, respect, miscommunication, bullying, easy opinions, and easy contacts; the social script of the on- and offline environment.

4. Creation

This theme is about the effects of building an online identity. Topics within this theme contain future jobs, identity, footprints, profiling, anonymity, hacking, finding like-minded people, personalisation of products and content, easy creation, gaming, shopping, sports, digital inspiration and expressing yourself.

Based on the overarching themes, a list of multiple events with an equivalent in both the on- and offline world is created (see appendix F.2). Fifteen sets were picked out of this list, trying to create a balanced perspective which covers all four themes above. The balance is shown in reflecting both opportunities and pitfalls of the digitising world and in displaying events from the perspective of both parents and children.

The cards inside the box

Getting attention
theme: communication

This set is about the similarities of not being noticed when asking for attention. It shows loneliness; being ignored in an on- and offline environment.

Pretending to be
theme: operating

This set of cards is about the inconsistency in pretending and getting rewarded for it. Reflected both in an on- and offline situation.

Creating something
theme: creation

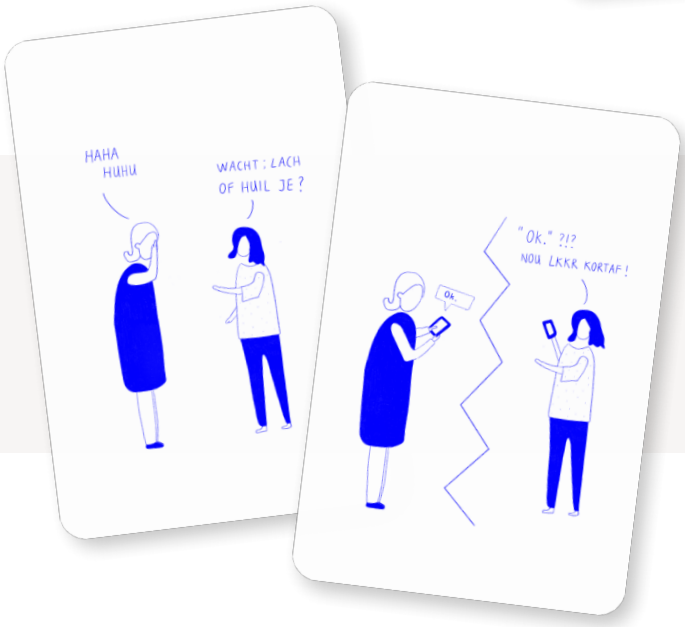
This set of cards shows the conflict in ease and time of creating something together on- and offline.

Shopping
theme: information

These illustrations emphasise the difference between shopping on- and offline. It displays that on the internet things are not always as they seem, and experiences are often less personal.

Sharing location
theme: operating

The 'sharing location' set shows the inconsistency of sharing personal information on- and offline. The illustrations represent how people share personal information easily online whereas offline it's not common to show the whole street that you are on a holiday.

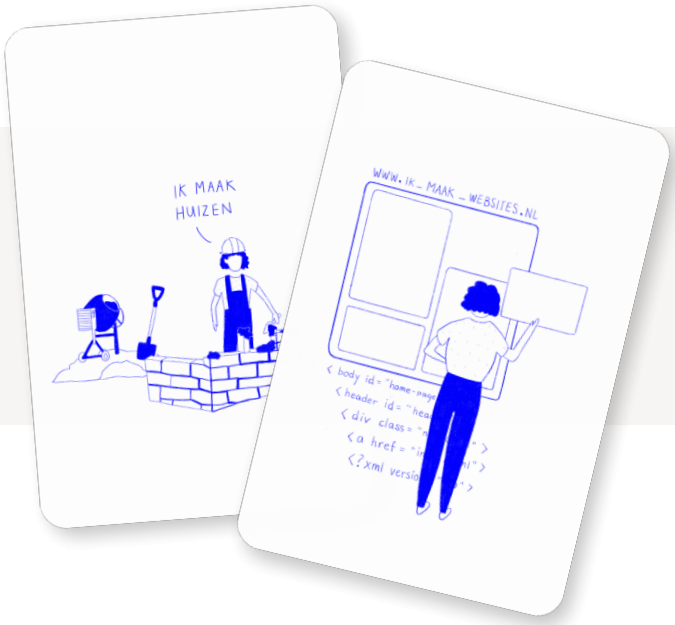


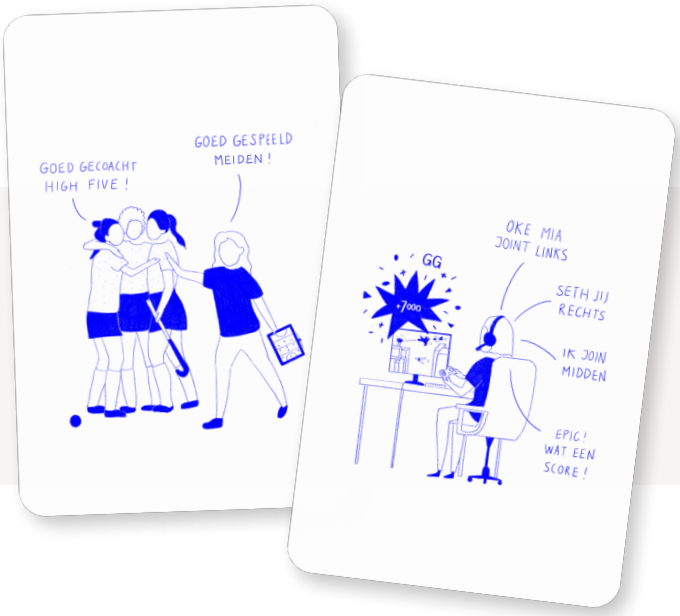
Misinterpretation
theme: communication

These illustrations show the contrast between an on- and offline conversation. It displays the importance of facial expressions and empathy in a conversation.

Building
theme: creation

The ‘building’ set represents the similarities of how people’s environment is being shaped. The illustrations show that website builders can be seen as digital construction workers.





Gaming
theme: operating

This set is about appreciation and recognition in both the on- and offline environment. It shows that winning points in a computer game could be seen as receiving compliments in real life. Also, it highlights the pleasure of working together.

Becoming an expert
theme: information

This set of cards shows the contrast between learning something on- and offline. It emphasises that everyone can become an expert via the internet.

Sources
theme: information

This set of illustrations shows the inconsistency in the search for information. It sends the message that not everything on the internet has to be trustworthy, just like asking a question to a 'wrong' person in real life.

'Stealing' something
theme: communication

These illustrations are about the similarities between taking something from someone without permission in the on- and offline space.

Contacting someone
theme: communication

The 'contacting someone' set is about the insecurity of reaching out to someone. The illustrations show the difference in feeling vulnerable when contacting someone online and offline.

Community building
theme: creation

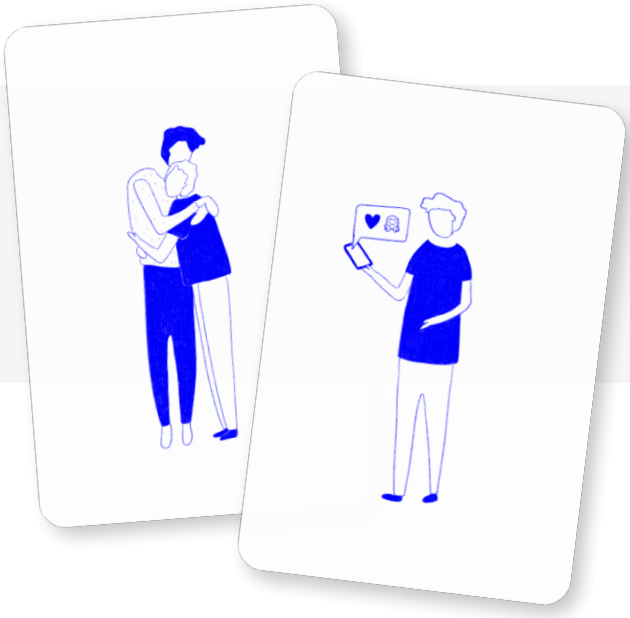
These illustrations show the inconsistency of finding like-minded people. It reflects that it is sometimes easier to find 'friends' online, when your less extensive offline environment falls short.

Personal information
theme: operating

This set of cards is about the paradox of trading personal data for the short-term benefit.

Affection
theme: communication

This set shows both the similarities and differences between affection in the on- and offline world.



“This is exactly the situation between you and me. You always OK me.”

-- Lola (14)

02.

limitations and recommendations

The evaluation of the interaction between parents and children, when using Bubbel Babbel, showed that the exercise brought them closer together. It unravelled situations, ideas, and inspiration they had not yet thought about. When discussing the events, parents and children came from a different perspective most of the time (see appendix G.4). Where parents felt more related to the event in the offline environment, children felt more connected to the event in the online environment. This led to fun and new discussions about how the event could be perceived, revealing parents and children their blind spots. The recognizability in events triggered parents and children's laughter which encouraged them to share their own stories and made it a bonding activity. The guidelines to decide whether an event was shown through the eyes of the online or offline world, or if the event was recognisable helped in creating a mutual understanding on how to fit the digital world in the physical world, and vice versa.

There were also moments when parents and children supported each other from the beginning of the conversation, agreeing on each other's perspectives about the events. This was an added value because it created more variety in the types of discussions, sometimes discovering the event from a different perspective and sometimes discovering it from the same perspective.

Another point of attention is the age restriction of Bubbel Babbel. During the evaluation, Bubbel Babbel was tested with children between ten and sixteen years old. Out of those tests can be concluded that the current design is most appropriate for children starting from an age of twelve. This has to do with the topics chosen for the illustrated cards, which relate best to how 12-year-olds and older perceive the world around them. However, from the project's research can be concluded that the age of nine is also a very interesting intervention moment, since that is the life changing moment a lot of children receive their first smartphone. The strong personal wish to contribute to this transition moment with the design was always there. Therefore, a future recommendation is made to look more closely at this transition moment and create illustrations that fit the perspectives of these families.

A final limitation of the project's design is that Bubbel Babbel is quite an open exercise. There is no good or bad, which could be difficult to deal with, especially for children. A lot of things are currently gamified, to hold the attention of children. For further development, it could be interesting to think about which elements will keep children even more engaged in Bubbel Babbel. An example of this could be to make the cards half augmented reality, half physical. However, making this change also influences the interaction between parents and children during the exercise at home. It becomes, for example, more difficult to look at the same cards at the same time and to point out things physically to each other.

03.

implementation

How does a conversation box like Bubbel Babbel end up in people's homes? To give the conversation box a platform for distribution, it can logically be connected to public libraries. Bubbel Babbel fits well with the future role of libraries in society, which is more focused on digital transformations. Bubbel Babbel is the first tool that compares the physical world to the digital world, letting people wonder "how do we actually see the world?". Bubbel Babbel could therefore be used as the first step in bringing the library to people's homes instead of bringing people to the library, showing the added value of the library in a digitalising environment. Therefore, the opportunity is found in launching the final design at the public library of Amsterdam (the OBA). First conversations about possible implementations were already discussed, which reflected the enthusiasm of the public library in Amsterdam to help realise the design.

Three possible ways to execute the implementation strategy have been devised, which are explained below. All three strategies will contribute to raising awareness for the design.

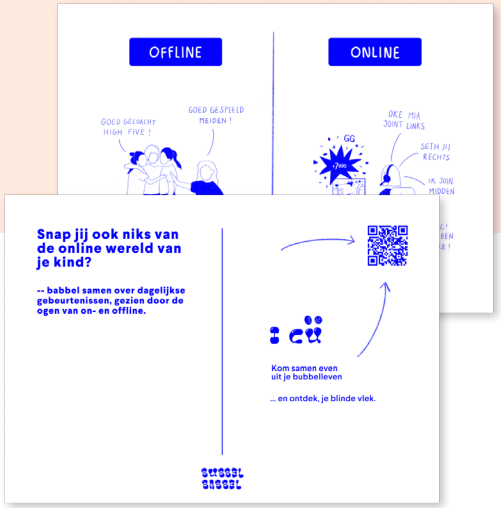
Strategy 1: Exhibit Bubbel Babbel

The first route is building an experience around Bubbel Babbel on the first floor of the OBA. The experience will be in the shape of a small exhibition, called “Open je blik.”. The exposition will present five big-size cards out of the box, but only the offline event card will be physically visible. By using augmented reality (AR), visitors can scan the ‘offline’ card with their smartphones. Their mobile phones show the associated ‘online’ on their screen. In this interaction with the exhibition, people will look at the offline world using their ‘digital’ eyes, their phones.

The exhibition will act as a teaser for Bubbel Babbel, attracting the audience to lend a copy of Bubbel Babbel from the library to take home and use together with their family. They can lend the conversation box immediately at the end of the exhibition.

Go to animated video: https://youtu.be/VbjoTWPKk64

Credits: animated video by Daniel Houwing



Strategy 2: Take-home postcards and promotion website

The second route is to promote Bubbel Babbel by distributing take-home postcards in the OBA. The postcards will display the comparisons as teasers of the cards inside the conversation box. People can take the post-card(s) home. The QR code on the back of the card leads to the website [link to website] about Bubbel Babbel, giving more information about the conversation box and its added value. Thereafter, Bubbel Babbel can either be purchased directly via the website, or lend in the library.

Go to website: https://bubbelbabbel.webflow.io

Strategy 3: Membership age segmentation

The third route is to directly distribute Bubbel Babbel via library memberships. Within 2025, the OBA wants to make every newborn child a member of the public library, and each child at primary school as well. This offers chances for bringing Bubbel Babbel home to children's houses. By connecting the design to the OBA membership, children can receive Bubbel Babbel as a present when turning a certain age.

In the way Bubbel Babbel is designed now, with its specific subjects, a logical intervention moment is when children turn twelve to receive Bubbel Babbel from the OBA. At this age, children are going to high school and are entering the digitising environment on a more complex, more social, and more independent level. The age of twelve is also an important turning point, developmental wise. The child is turning from a school kid into a young adolescent, starting to build its own frame of reference and identity. Therefore, it becomes even more important that parent and child stay connected. The events and exercise of Bubbel Babbel can contribute to this and will therefore, be most applicable from this age onwards.

Since Bubbel Babbel is a conversation starter, parents and children will probably use the conversation box once. To make it a recurring event, Bubbel Babbel can be connected to children's age development in collaboration with their membership. Each year, when children get older, the OBA will send them a new deck of cards with topics matching their new age.

05 discussion conslusion reflection

01.

discussion and recommendations for future research

The research of the project, which is partly based on literature and desk research, shows only a small part of all the research on (digital) citizenship out there. The beginning of the project focuses strongly on the evaluation of current digital citizenship frameworks whereas it could also be interesting to start projects about digital citizenship by diving more thoroughly in the concept of citizenship itself. It could be fascinating to see a more profound comparison between citizenship and 'digital' citizenship, highlighting the differences and the similarities.

For the qualitative research, which consisted mainly of user interviews and a user validation, the decision was made to use acquaintances in approaching participants. Doing the project during a pandemic and within the limited time frame, the search for a broad spectrum of participants was challenged. The limiting variety of interviewees within this project led to a less representative picture of society. More value could be added to the project by interviewing people with a lower socio-economic position as well. By talking to experts who work with or have researched digital inequality, the perspective of the non-spoken target group is considered in this project. However, a more complete picture could be created when hearing the stories from parents and children with a distance to the digital world.

Another limitation in recruiting participants for interviews and user tests within one's own circles, is that people tend to give socially desirable answers. Participants will for example know that one is the designer of the project and don't want to hurt someone's feelings. This act of people's unconsciousness could influence the outcomes of the results of the interviews as well as the evaluation, making the results more positive or socially desirable.

However, within social design, measuring the impact of the design is highly important before implementing it. Within the timespan of this project, it was not possible to assess the design exhaustively. For future research, it could be interesting to carry out a pilot within the public library of Amsterdam, investigating the impact Bubbel Babbel makes over time. To measure that impact, the public library could set up a membership-based pilot study, where half of the members (parent plus child) are receiving the deck of cards for a certain period (matching the age development of the child) and the other half of the members is not receiving the deck of cards. After a while, the two groups could be compared to each other, investigating their difference in behaviour and attitude. Therefore, it could also be interesting to do the pilot study in collaboration with libraries in other municipalities as well.

Another inevitable thing, that needs to be pointed out, is when qualitative research is carried out, the researcher's bias always plays a part. Talking to different people, collecting different perspectives, helps in creating a more holistic view on the situation being researched. Therefore, it is important to unite qualitative research with scientific literature research. By combining those two, new patterns can be found which could make the research very valuable.

Next to collaborating with the public library, the project can be expanded into working

together with phone companies. Therefore, cards could be developed and could become available for families when parents are going to buy the first smartphone for their child. In this transition moment, a design like Bubbel Babbel could perform as a guiding tool for parents and children to have their first conversations of what it means to enter the digitising world.

As already explained in the limitation of the final design, it would be beneficial if a design like Bubbel Babbel also becomes appropriate for the younger ages. Expanding the design for younger children (below the age of nine) could go into two directions: 1) a design direction that follows directly on the design just explained, or 2) a design direction which takes a broader approach. These directions will be explained more elaborately below.

For the first direction, a different collection of cards can be made, addressing the digital world of the younger ones. Topics like playing games on a tablet and doing in-app purchases can be an example of how to bring Bubbel Babbel to their live world.

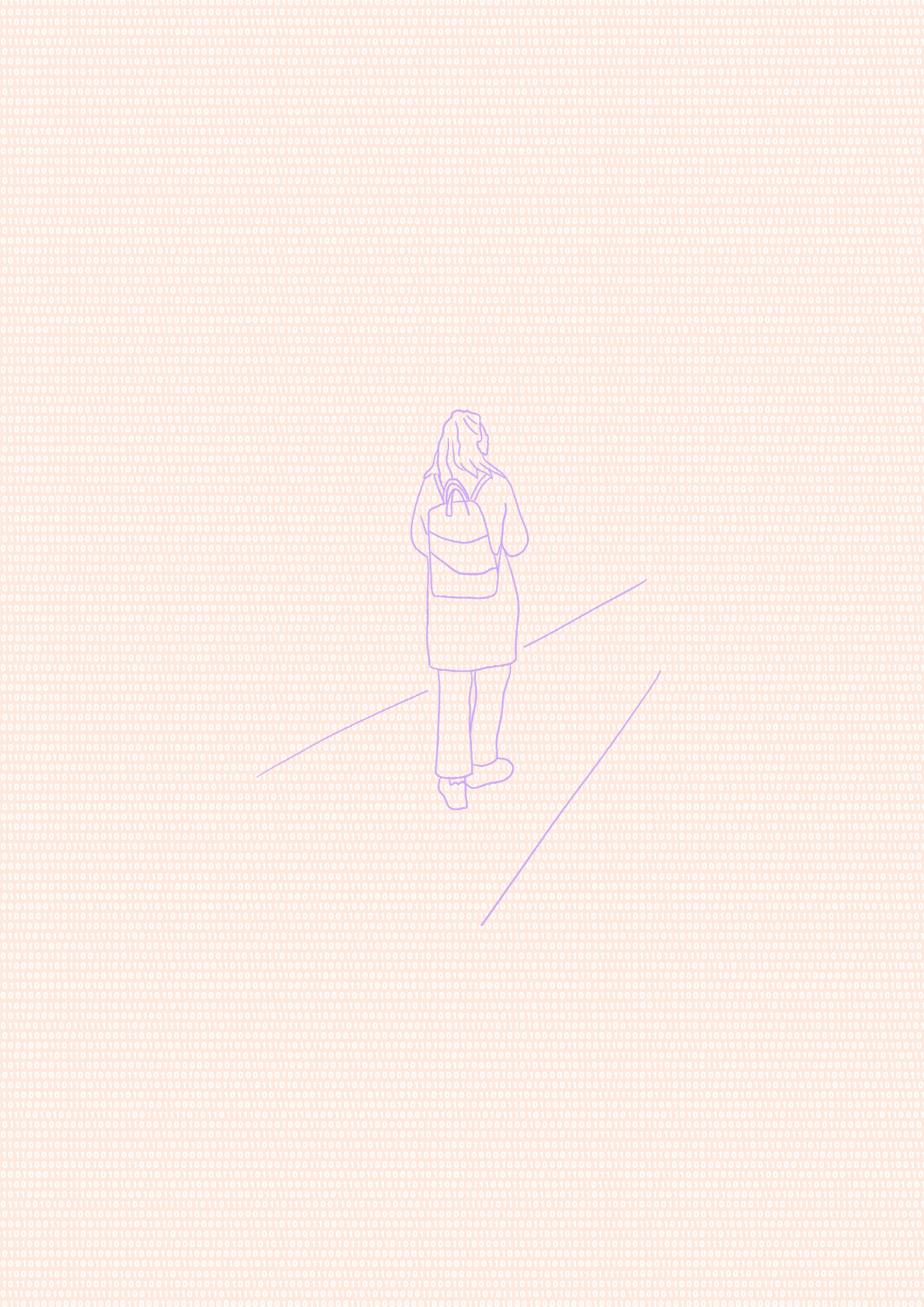
A second direction could be along the lines of explaining digital principles in an analogue way. Children and parents can go on an 'expedition', learning about how the digital world works. Some children, especially when they are younger, see the digital world as something 'magical'. They do not understand that there is something behind it, making it happen. For this project, designing multiple things for multiple target groups was out of the scope. But inspiration can be found in using the same design principle, making the intangible, tangible.

02.

conclusion

This project took a new approach of looking at digital citizenship. It looked at the concept of citizenship and explored how society is related to its digitising environment today and in the future. From the project's research can be concluded that focussing on competences only is not the most promising direction when wanting to turn society into 'better' digital citizens. The digitising environment is developing faster than society can develop, making it more challenging for people to continuously prepare themselves for a world they do not know yet. Therefore, this project focussed on creating a design that can guide society into understanding their digitising environment. A design that stimulates society in thinking about how to interact in the digital environment with taking responsibility and respect of people's rights, just like in the real world. Within creating that understanding, an opportunity was found in leveraging the generation differences between young and old. Bringing parents and children closer together and learning from each other. This project and its outcome build a bridge between the digital world and the physical world, making the digitising world more imaginable for both adults and children. Bubbel Babbel stimulates parents and children to create a shared value set of what it means to participate in a digitising world. This is done by showing parents and children the blind spots of the world around them through the on- or offline eyes. By enabling this in an amusing way, Bubbel Babbel can be seen as a fun and engaging discussion tool for parents and children to use together.

The project contributes to the field of digital citizenship and offers parentheses for further research within this topic. In the short-term, Bubbel Babbel can bring the different perspectives of parents and children together and let them learn from each other. The design invites parents and children to discover their blind spots and change their perspectives. In the long term, Bubbel Babbel could contribute to guiding society in understanding how to participate in a digitising world and how they can contribute to shaping their own digitising environment.



03.

personal reflection

During my six months journey, I have learned that social design is about asking yourself the same question over and over again. “How do I make the most impact?”. And as it turns out: the impact is the design. As a designer you have the privilege to see things from a different perspective. With the project you are doing, or the design you are creating, you can give people access to that privilege. That’s the beauty of using design for social issues.

What became noticeable during the interviews of the project was that parents and children were already benefiting from the conversations we’ve had about ‘their digital environment’. Some interviewees contacted me after the interviews, saying they’ve had a great time and it got them thinking. The people contributing to this project became part of the project. Doing a project together with parents and children gave a lot of energy. The highly relevant and contemporary topic made me want to talk about it every day, every moment. However, this was of course, not possible without turning the people in my social life totally crazy. I became this project.

While I was busy with ‘being’ my project, days passed by. At a certain point, I got stuck. I was too focused on processing all the research, trying to find ‘the problem’. Therefore, I forgot to think about what inspired me about this project. I had to find back my originality, my inspiration. This was a turning point in my project. From that moment on, I stepped out of my bubble and my creativity started to flow again. A bit ironic, don’t you think?

As a designer, you want to improve the world. But how do you do that? That is the biggest challenge you face during a project as complex as this one. Not only did I have to process the huge amount of data I collected in my research phase, but I also had to tell a clear story, once I thought I had it all figured out in my head.

Now that the project is finished, I can confidently say that I’ve learned a lot in the field of social design. That there is a way to combine my two passions ‘design’ and ‘behaviour’ in one field, is beyond the expectations compared to when I started my journey as a student in 2014. Social design is emerging, and I hope many more people will see the relevance of it. Finally, I enjoyed the process together with my supervisory team and the design collective from the OBA. I hope that I have sparked the curiosity of many to explore the field of ‘digital’ citizenship and I am looking forward to my next chapter as a designer.

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