digital me+

Connecting atoms and bits in the process of identity exploration in digital natives.

Sharon C. Williams Nelson
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Original title

Digital identity. Connecting atoms and bits in youth's search of self identity.

The project, on-line

sharonthesis.tumblr.com

shacawine.com/mathesis.html

uid.umu.se/en/uid-13/projects/projects/ixd/sharon-williams/

vimeo.com/67668012

Project Tutor

Kent Lindberg, Interaction Designer, Interactive Institute Umeå.

Project Mentors

Dan Saffer, Interaction Design Director at Smart Design (San Francisco).

Jason Walzer, Interaction Designer at Google (San Francisco).

Project Examiners

Mike Stott, Professor Emeritus.

Niklas Andersson, Umeå Institute of Design IxD Program Leader

Collaboration Partners

Ana Moyano, 2nd grade teacher at Col·legi Maristes la Immaculada, Barcelona (Spain)

Júlia Riera, Principle at Institució Escolar Sant Jordi, Barcelona (Spain)

Joan Bartra, Head of Studies at IES Jaume Almera, Barcelona (Spain).

Special Thanks

This wouldn't exist without my family and all my classmates.

About me

My name is Sharon C Williams Nelson but I go by the acronym of shacawine. I am a Panamanian/Spanish Interaction Design MA candidate at Umeå Institute of Design. I have a background in design engineering, industrial design, storytelling and animation. I believe in reflection, fun and time as the other often forgotten dimensions of design.

Contact info

shacawine@gmail.com

shacawine.com

Introduction / Abstract

Digital Me is the final result of my MFA thesis in Interaction Design. It is a platform for parents, teachers, and any adult that considers him/herself as an educator or a role model of the digital natives. In it they can find tools to empower and support them when bringing up pre-teens that are about to start, or have already started the process of exploration in the search of self-identity.

Digital Me is created for adults. It aims to be informative with the right tone of voice, to provide the tools to empower their role of educators, to keep them inspired and motivated, and to give a basis for community where they can raise concerns and share learnings. The platform contains a series of tools for critical thinking, designed based on two main principles: they should evolve to adapt to the growth of the digital natives; and they should tackle different facets of the crossing between identity search and technology. I focused my design efforts on one of the tools: Me in My World.

Me in My World is a tool designed for digital natives in the early stage of identity exploration, those in ages between seven and eight. It is centered on the current, extended behavior of documenting our lives, but instead of doing it for the purpose of broadcasting personal lifestyles, it focuses in self reflection: documenting for one-self. It does so in a curated process, supported by teachers by being part of the educational system, and by parents by encouraging discussions in the home environment.

Introduction / Background Overview

Early Motivation: goals and wishes

Constant access to the Internet is a behavior that strongly characterizes the times we live in, to the point where our lives have almost fully migrated into the cyberspace. This makes it harder to establish familiarity and continuity in younger generations. How real are we and our lives if we live more in the virtual world than in the tangible world?

My original goal was to understand the impact that the migration of lives to the cyber space might have in the natural search of self definition in the digital natives, and to explore how interaction design can positively affect and curate this process. My wishes are to strengthen the relationship between the digital natives and their parents, as well as with their teachers when the process of growing up is done in a digital context.

Initial Questions

Self-reflection is the first step of the process of thinking of one-self. We might think of us for our physical attributes, or by comparing ourselves to others, or by defining our uniqueness, or by our belongingness to a larger group. If digital technology is changing the way we get to know the world and the way we connect with others, it might also be changing the way we explore and connect with ourselves. But is it leaving behind basic aspects of human decency like character or integrity?

Constant access to media is altering our behaviors to a point where we document our lives and broadcast them for the benefit of others, but not for our own. How do we perceive ourselves when the question "who am I?" is not asked from an introspective point of view, but from the perspective of someone else?

Finally, and about the services based on digital technology, do they underlay a hidden, questionable business drive? Moreover, how do they empower (if at all) the people in charge of giving access to the digital natives; who will use it regardless but maybe in an unsupported way?

Preliminary Inspirational Research

Besides my own reflection, a few isolated stories inspired me to pursue this topic for my final thesis. Some of them are personal, and others come from articles I read on-line.

Story 1: On parent's concern and parental control: The 4 years long distance relationship I have with my little cousin.

Story 2: On using social networks to define oneself: panel discussion of avatars and profile pictures in an attended art exhibition in San Francisco.

Story 3: On digital natives' unawareness around data mining and digital footprints: shared screen-shot of a teen's Facebook profile update with a picture of them during intercourse.
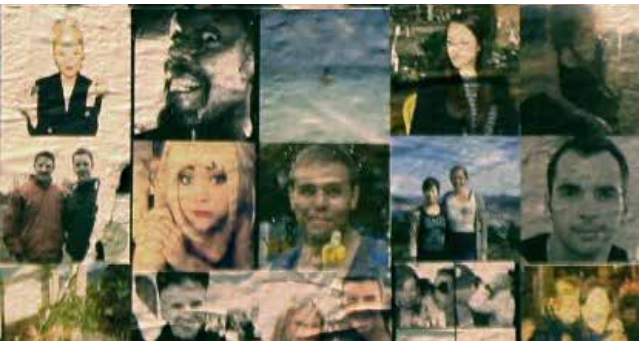
Story 4: On addiction to technology and parental control: teens drug parents to have access to the Internet for a longer time.

Story 5: On educator's understanding of technology: kids suspended for finding teacher's dirty pics on school iPad.

Story 6: On parent's concern and parental control: Gregory's iPhone contract by blogger Janelle Burley.

1 On parent's concern and parental control

2 On using social networks to define oneself

3 On digital natives' unawareness around data mining and digital footprints

4 On addiction to technology and parental control

5 On educator's understanding of technology.

6 On parent's concern and parental control

Methodology / Research Process

Methodology / Research Process

My research approach

I approached the research with the motto "All generalizations are false, including this one"; under the premise that I understand technology and interaction design as a part of a bigger system in which nothing is isolated nor should be overlooked. However I acknowledged the impossibility of getting a deep understanding of everything for the purpose of an MFA thesis project and thus, the result is based on my personal understanding.

The inspirational stories from the previous section suggested me that if there is a problem when digital technology meets identity exploration, it is not an isolated one: it is rather affected by different stakeholders of society. This strongly influenced the way I approached my research. A clear distinction of who those stakeholders are was the first step that would keep me grounded in my original project goal and throughout the research process.

Fieldwork with the influenced

They are the digital natives, the parents and the teachers. This part of the research I conducted in my hometown in Barcelona (Spain), for two main reasons: it made recruiting easier, and it allowed me to interview without needing a translator (I feared that a language barrier would give me less honest answers on self perception due to miss-interpretations, deceit and the personal relationship between translator and interviewee).

Digital Natives

Because by being born in the digital era they have interacted with digital media from an early age. I Designed cultural probes that were used as homework activities and as workshop assets, to learn about their self-perception,

their reflection habits and their relationship with technology. I also organized a play-date with two families to learn about their behavior in the home context. I also looked into my own old diaries to see what things I would write about when growing up, in a process I like to call "selfthnography". *Participants: 27 participants (11 boys, 16 girls), ages 10 to 19, from 2 different schools for the probes, and 26 students (16 boys, 10 girls) ages 7 to 8 in the workshop.*

Parents

Because they grant or prohibit access to devices and the Internet but without it being an actual informed decision. I created on-line questionnaires to learn about their own behaviors around technology, and how they approach their concerns when their kids interact with it. An interview with 4 parents was conducted after the early mentioned play-date. *Participants: 34 parents (27 mums and 9 dads) of 52 kids (30 boys and 28 girls) of ages between 1 and 25 years old; of which 36% are only child and 64% have 1 to 2 siblings; with an average age gap of 5 years.*

Educators

Because they are the ones instructing kids on how to use technology, social sciences and ethics. I reached out to schools to get in contact with educators, and by extension with their students and their parents. I conducted on-site interviews with teachers in the class and staff-rooms, and a couple of observations of computing and ethics lessons. *Participants: 1 Principle, 1 Head of studies, 1 Coordinator of pedagogy, 1 tutor and teacher of Ethics and Social Sciences, 2 teachers of computing and informatics, Dedicated Elementary School teacher and 1 dedicated Kindergarten teacher. I went to two are private institutions and one public high-school institution.*

Methodology / **Research Process**

Desktop research and fieldwork with the influencers

The influencers are the experts in different disciplines that I thought might affect the process of identity exploration in a digital context.

In my desktop research I found some authors that affected my understanding on the topic and the later stages of the project: Jean Piaget on the "Theory of cognitive development", James Marcia on "Psychological development and theory of identity status in adolescents on the theory of development and identity", Lawrence Lessig on "Code and Other Laws of Cyberspace", and Nicholas Carr on "What the Internet is doing to our brains".

In the fieldwork I interviewed academics from Umeå University because they spend an important amount of hours conducting research in specialized areas of their field, which helped me identify the ones that were more related to my project. I explained the influencers the inspirational stories of my preliminary research, and we discussed them from their professional point of view. These experts were from the following fields of pedagogy, sociology, psychology, business, law and technology.

Pedagogy

To see the challenges that education is facing when learning is affected by technology. *Participants: 3 pedagogues.*

Sociology

To see how the issues may affect us and our relationships with our families, our communities and society. *Participants: 1 professor of sociology.*

Psychology

To understand the causes and the effects o technology as a part of personal development and identity search. *Participants: 1 psychology PhD candidate and 1 cognitive scientist.*

Business and Law

To understand what are the rights and obligations when it comes to cyber-crimes, and to see how data mining and knowledge discovery databases are used by corporations to generate revenue based on people's personal information. *Participants: 1 law PhD candidate, 1 police officer and one professor of strategic management.*

Technology

To see if, and how the information and communication technologies, as well as interaction design are dealing with self exploration in the cyberspace. *Participants: 1 professor of informatics and 1 PhD candidate in informatics.*

General findings

Digital media offer great possibilities to empower people in their individual growth, as well as in digital native's closer circles. However I learnt that the ethical aspects of these possibilities have been overlooked, and thus the impact they can have in communities like home or school; leaving adults clueless on how to educate with such a big generational-technological gap.
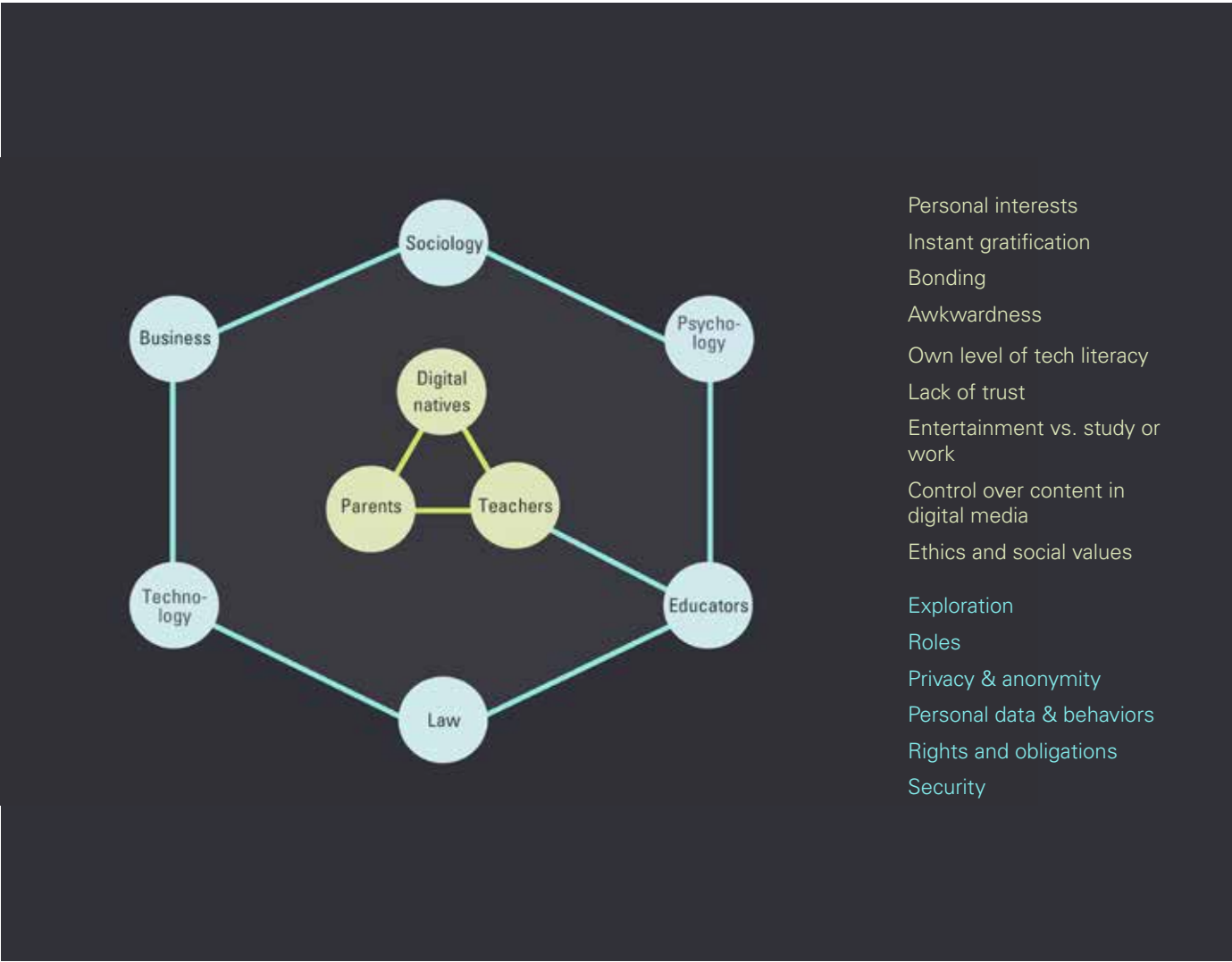
Methodology / Synthesis Process

Playing with somebody, here and now!

Instant satisfaction is found in play and they turn everything into a game with no interest in the past, nor capacity to understand the future.

Perfect and happy boys and girls.

They try to find the thing they are good at, and feel great satisfaction of properly completing a task. They are quite perfectionists in wanting to meet the imposed perception they have on themselves, in their gender and in how they perform in their personal interest or in what they are good at.

Moments and activities are cherished for the people they spend them with.

Celebrations, extracurricular activities, playing video games and special occasions, like having a new brother appear several times.

The objects are appreciated for the activity they enable.

These objects are related to their extracurricular activities, to study or to play in general (toys, games, or devices to create).
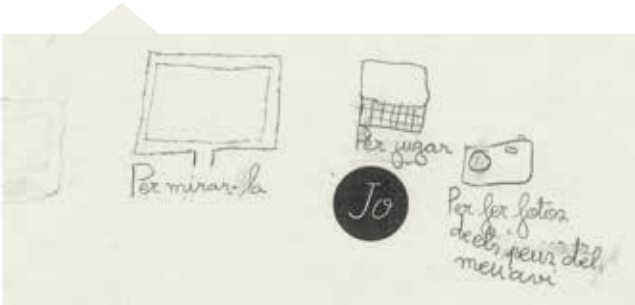
Activities, no reflection.

Self-reflection is not common at this age. Instead, they wonder about things and they spend a great deal of time immersed in contemplative activities like drawing or taking pictures. They struggle thinking of a moment being alone. Even when playing with their pets they feel they are with somebody.

The people around them is admired for their attachment and their level of skills.

Closest family and classmates are the most important people in their lives. They consider their pets as part of their families, and fictional characters, like Harry Potter as people in their circles. Interacting with strangers is not part of their world.

The most important places around them are based on how close they are to them or how special the occasion was.

Familiar places (home, school, sports center), a strong attachment to their own town/city, and recent get away or holiday destinations.

Their concerns when their children access devices and the Internet.

The Internet seems dangerous and their children's protection is out of their control .

Their main concerns are how dangerous strangers might be, how sex and porn are everywhere, and cyberbullying.

Having too much access to digital technology might be affecting their kids' integrity and personality.

They feel their kids are not mature enough for what you might find, that they may misuse anonymity to harm others or themselves, and that addictiveness may affect their brain (without being sure how).

It could damage their family relationship (if it hasn't already).

Mistrust is perceived both ways, so parents need to use rules and their authority, or even invade their children's personal private space.

Parents can be highly concerned, pro-actively curious, or naively detached when it comes to digital technology

Some use time, space, and credential management; control in social network platforms (in older kids), or preventive and tracking controls; others act by being interested or engaging in dialogue. Other parents feel they shouldn't worry now, and act by relegating responsibility.

"We thought a lot about this topic because he plays with is iPod for way too long. We have to set a limit but haven't done it yet. But I am aware I have to do it."

"If they see anything "weird" they let us know."

"It's a very worrying topic. Kids have access to THE WORLD through the Internet and are not mature enough to handle it."

"Everything you can't control worries."

"It's important that they don't think you want to violate their privacy, they should be informed of everything they could find so they are aware."

"We should give them a good humanistic foundation".

How teachers plan or give lessons aided with or hindered by technology.

They struggle with constantly trying to keep up.

The transition from old school methods to new methods, plus educating students about an unfamiliar topic makes them feel they are always behind and in disadvantage in front of their students. Also, the quality of the devices schools can offer is highly subject to institution's budget, and they cannot control students' personal devices and the social segregation they promote.

They have to dealing with inherited and frustrating possibilities.

Teachers sometimes feel they have to fix the problems that come form home, from unconcerned parents who relegate responsibility. Plus, devices give easy access to digital media that is distracting and addictive, and it breaks the flow of the class. On the other hand, technology provides the aid to create a better tailored and enhanced teaching experience, but the systems are usually broken or poorly designed.

"I tell my student: we shouldn't separate the virtual life from the real life because everything is real".

"How come when you buy a simple object, like a flash drive, it comes with pages of instructions, but anyone can access the Internet and do whatever they want in it?"

Insights from the psychologists on personal development and digital technology

Adults should allow children to experience explorations.

First time experiences challenge and encourage the formation of the self, and exploration creates the process of identity formation.

Performing the right roles.

Children distance themselves from parents to explore identities, and parents guide kids to understand the environment and respond to it appropriately and independently.

"Clear roles, specially of the adults around them, are crucial for kids to reach maturity."

Insights from the sociologists on personal development and digital technology

There are expected social roles associated with their behaviors.

In society, there are unwritten norms, costumes or values, accepted standards dictated by culture and immediate family and friends. These give the tools to participate in society: participatory culture is strongly aided by digital media.

"When you know the rules, you can step back and reflect, participate..."

We should be aware of the dis-inhibition effect.

It can be benign (to explore and understand oneself) and toxic (to relief unsavory needs).Crafting an on-line persona has an impact on identity and self-esteem, and it can be dangerous if we accept the dis-inhibited self as the true one.

"Being open came with trust. Anonymity affects the self-censorship that is common in face to face communication."

New technologies come with a certain disbelief.

A new framework of what is "normal" is under ongoing transformation New technologies are usually embraced by open minds, others reject it, and rules help mediate the coexistence of everybody (including technology).

Insights from business, technology and law

It is the self that prevails in the cyberspace.

Personal data that describes individuals and their behaviors has been willingly broad-casted, turning behaviors as part of digital identity. The services providers usually have business models that abuse technology and people's rights, usually via misleading terms of use).

We should know our rights and obligations in the cyberspace.

In relation to aiding self-cultivation and the development of a personality, we have the right to privacy (it protects dignity and limits intrusion, but it gives a false sense of anonymity), and a right to freedom of speech (technology and media are tools of speech in an playground of equality: no authority or status, only ideas).

There are conflicting rules when it comes to being protected against crimes.

Nevertheless, some digital offenses can be prosecuted: forgery and fraud (identity theft), defamation and other forms of Cyber-bullying, and sex related offenses (grooming and child pornography).

Data mining creates an infinite loop that can affect the development of the self.

In the flow of using a service - having on-line behaviors monitored and recorded - having that data aggregated and being profiled - being offered something fits that profile; digital service providers might be feeding the wrong kind of data in the digital natives.

Methodology / Synthesis Process / Direction

My original hypothesis

I started off with the thought that constant access to media through digital devices may be affecting the natural search of self definition in digital natives, as well as damaging the relationship with their parents and teachers.

Design Goals

My design goal is to create tools for critical thinking through the involvement of parents and teachers to educate digital natives for the use of technology.

To achieve my goal I had two ambitions in mind. First, was to challenge the definition of identity by neglecting the difference between its analog and digital sides. This is because, unlike the adults around them, the digital natives don't have that distinction: they have been interacting with digital media from an early age.

Second, was to treat it like a tangible, organic entity that grows and evolves in the dynamic process of self definition. This is because the actions and behaviors we do in the cyberspace leave a trace that is part of our digital identity, which is under ongoing exploration.

Design Principles

Based on my research insights and design goals, I wrote 3 design principles so I could ideate around them. This was very important to keep me grounded in the creative process: the nature of the topic prompted long discussions in early stages, and at this point I was ready to tackle the problem with a more hands-on approach.

The first two principles were written to accommodate for the needs and frustrations of the influenced: the digital natives, their parents, and their teachers. The last principle was aimed at service providers based on the learnings from the influencers: business, technology and law.

Consider cognition

The solution had to take into account digital native's cognitive gap, so their level of maturity would be adequate for them to explore with digital technology and media.

Strive for involvement

The design had to bridge parents' and teachers' generational gap with the digital natives, so they would feel empowered to educate on norms and values in the technological and digital context.

Be transparent

The final design had to consider the cultural, ethical, and legal implications of using technology and digital media.

Target audience

Digital natives cover a broad age range. Keeping in mind my design goal of considering identity as an entity that grows and evolves with the child I decided to focus mainly in those with ages 7 to 8. This was inspired by two learnings from the influencers: the "Theory of cognitive development" by Jean Piaget. According to Piaget, children aged 7 to 11 are in the concrete operational stage: they have the ability to think logically about objects and events with inductive reasoning but without abstract thinking. This decision was made because digital technology expose them to abstract concepts without having the capacity to understand them.

Because an important insight from research was how big of an influence the adults are in the process of personal development, they became as important as the digital natives for the project. Any adult can influence this process, however I decided to focus on the teacher at schools and the parents at home.

The graph below breaks down each principle into more manageable chunks based on specific insights. I used this later used to formulate questions in the ideation stage.

Digital natives	Parents	Teachers	Business, IT and Law
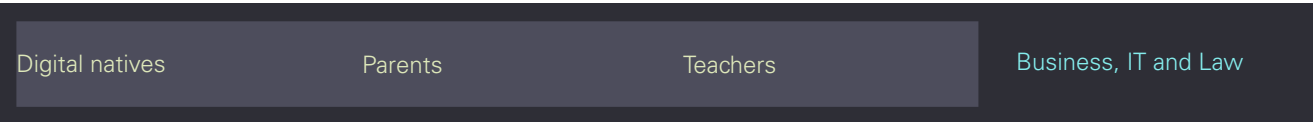
Consider cognition

By conveying and inducing critical thinking on themselves and the world around them.

By teaching them abstract concepts like privacy or anonymity in a fun way.

By encouraging conversation with other adults around them

Strive for involvement

By increasing parent's tech literacy so they feel they are in charge of their child's protection.

By empowering parents so they can educate their children on how to use technology and access media in a healthy way.

By encouraging conversations to improve parents' relationship with their children.

By increasing teachers' tech literacy on technology and digital media.

By providing teachers with the tools to teach norms and values on technology and digital media.

By supporting their role of teachers, both in the staff room and in the classroom.

Be transparent

By considering the ethical implications of how digital products will be used by (all kinds of) people, not users.

By writing terms of use and privacy policies that effectively communicate and protect people's legal needs.

By creating business models that encourage an honest participatory culture.

Methodology / Creative Process
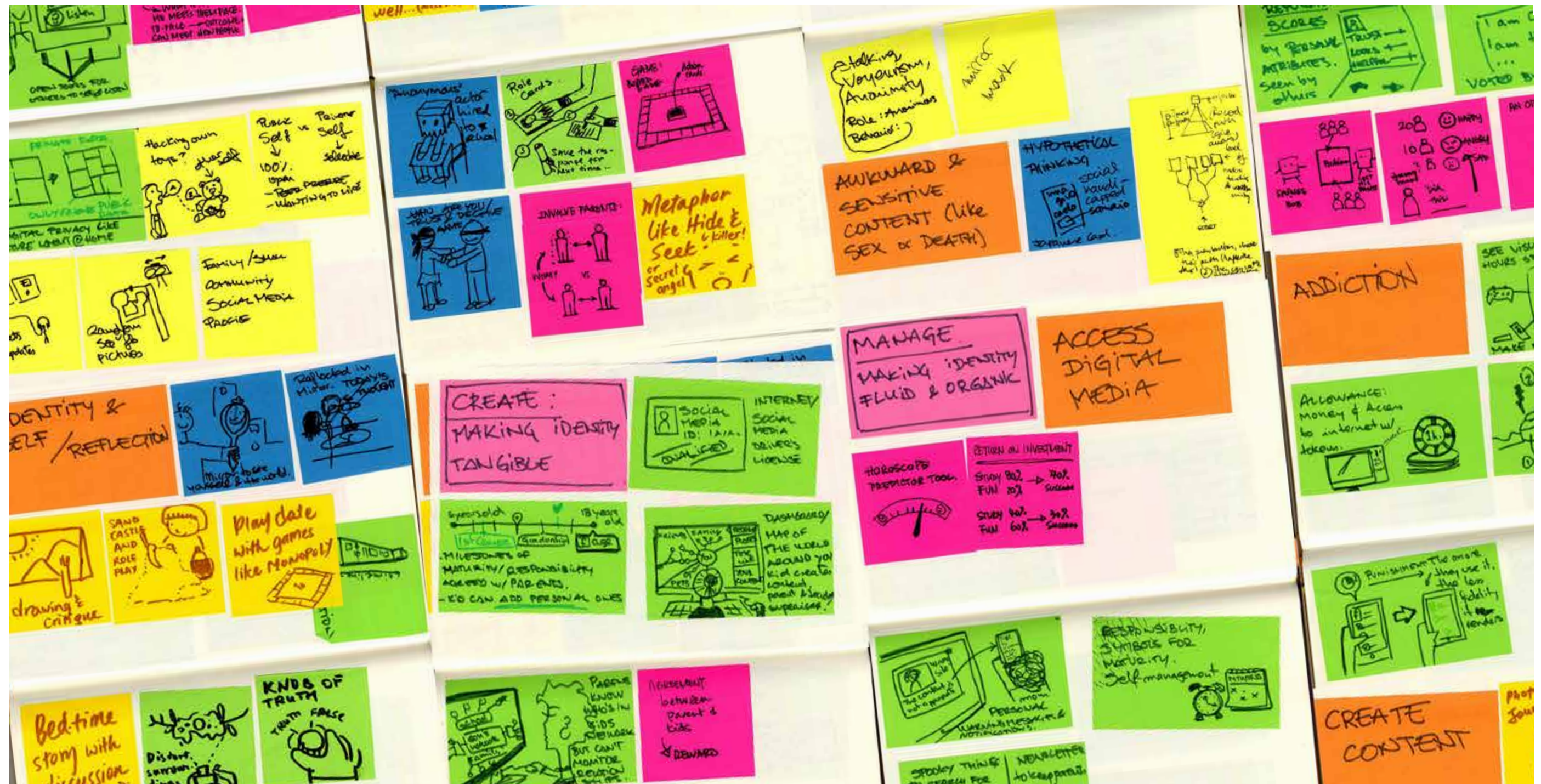
Methodology / Creative process / Ideation

Co-creation workshop

While finalizing the synthesis state of the process, I crafted a workshop to get the first ideas on the topic. I planned to have it mainly with the experts from University and only a few designers to help ease up the creative session, but in the end only the lawyer and the pedagogue could make it.

There were 15 participants and it was planned to last 2 hours with a half hour break in between. It was divided into 3 parts: create characters, make the abstract concrete and share ideas.

Create characters

Participants had to craft a persona and group to create the relationships of a parent, a teacher and a kid. The attributes of the characters were based on the research.

Make abstract concepts concrete

Using the Chinese portraits technique, each team had to come up with an object, a place or an event that expressed or evoked the abstract concepts of Internet, privacy, maturity, awkwardness or community. These concepts appeared during research as areas that digital natives encounter with technology but are not cognitively mature enough to face.

Share ideas

In the end they had to quickly present their concepts to the rest of the group. They could build on each other's concepts based on the personality of their own characters.

Brainstorming

The outcomes of the co-creation workshop gave me an idea on how to tackle the abstract concepts with tools for critical thinking, and they made me aware of the difficulty to design with the friction that exists between people from different generations, with different goals and with their own individuality.

Keeping that in mind, I went through a couple of cycles of ideation-clustering-refining.

Early on I realized that in order for the concept to meet the needs of all digital natives, parents and teachers, it had to come from and live in the school. The same way I approached my research, schools serve as a good starting point because they bring together teachers, parents and kids; besides the clear educational essence of the project. I decided to refine the ideas into concepts that would fit with this notion.

Initial conceptualization

During brainstorming I realized that, while the concepts come from the same principles, they tackle different problems and are equally relevant.

Before further ideating, I settled on creating a platform that would hold a series of tools that challenge different aspects of digital identity. Educational institutions, families, and everybody interested could turn to this platform and learn how digital technology can affect the development of children's identity.

Through this platform, they would also get access to the tools for educating children on self development in a digital context. These tools would communicate with devices at school and at home in a secure way to teach and encourage discovery and self-reflection, and would strive to make concrete the abstract concepts of identity and its attributes, generating and sharing content, the difference between private versus public, anonymity, reputation, awkward and sensitive content, and addiction.

Under this premise, I clustered the ideas and created concepts that could be tools for critical thinking.

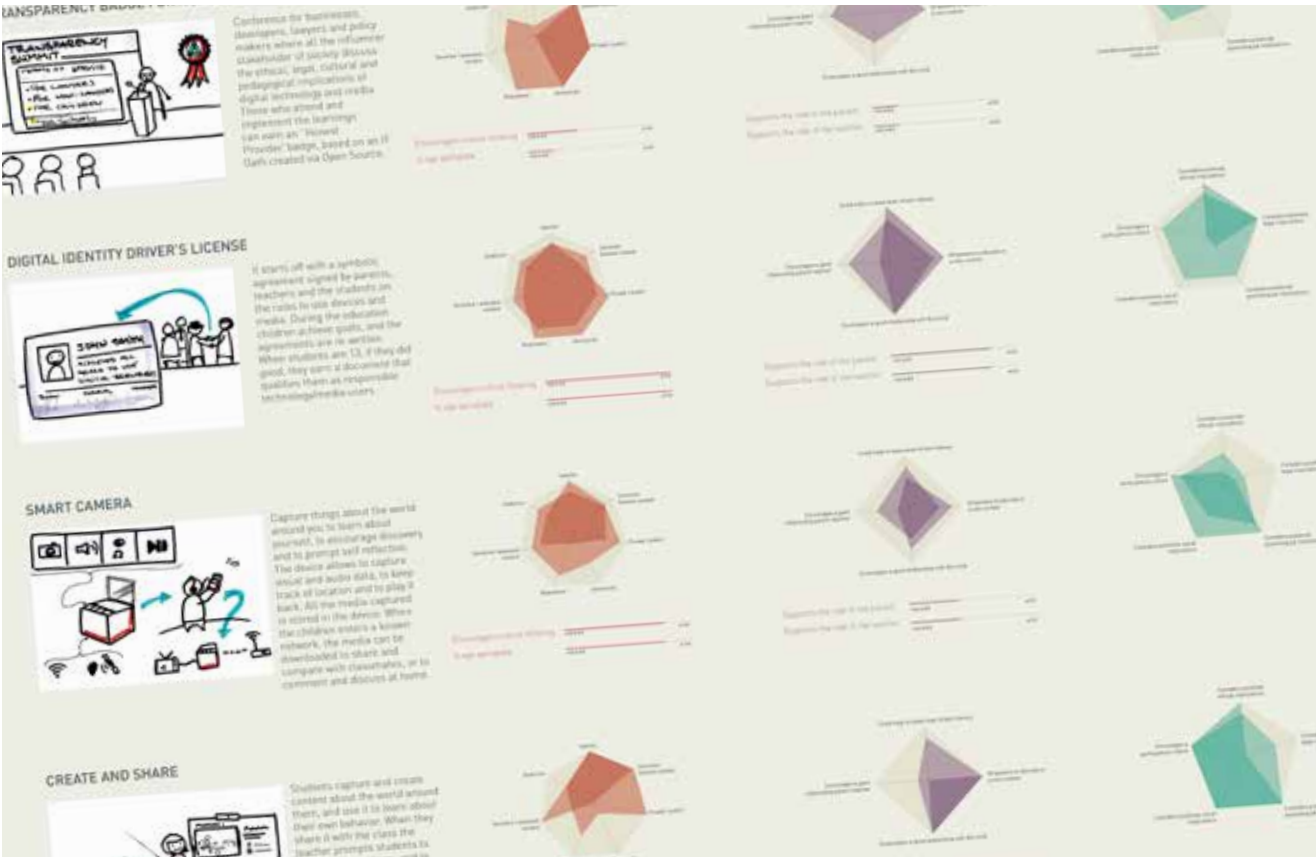# Methodology / Creative process / Ideation

Concept evaluation

I gave each concept a visualization, a description and a name: The Dumb Phone, The Reputation Calculator, The Opinion Remote, The Tracking Antenna, Avatars, The Driver's License, And The Transparency Badge.

Besides discussing them with classmates, tutors and mentors, I sent over the ideas to the experts I interviewed, to the 2nd grade teacher who let me have a workshop with her students, and the parents I interviewed and had the play date with during research. I also had a skype session with the children from the play-date, in which I showed the ideas and explain the experience. The ideas were sent in an interactive pdf were they could rate the general concept of a platform for adults, as well as each concept individually. The rating system was based on the design principles.

1. Consider Cognition

I asked if it is age appropriate, encourages critical thinking, and if it has potential to educate on the abstract concepts of identity and its attributes, generating and sharing content, the difference between private versus public, anonymity, reputation, awkward and sensitive content, and addiction.

2. Strive for Involvement

Here my inquiries were if it could help increase level of tech literacy, if it empowers to educate in a new context, and if it encourages bonding with the child. I also asked to rate how much does it support the role of a parent and a teacher.

3. Be Transparent

I asked how much each concept considers positively the ethical, legal, psychological and social implications, and if it encourages a participatory culture.

I overlayed the responses I got into spiderweb diagrams to see which ones were stronger and how I could work around them into a seamless proposal.

As part of the evaluation process, and to decide which tools I should focus on, I mapped how each concept could evolve with the age of the digital native, or if it should come into place at a certain moment during their process of growing up. To do so, I looked into general learnings that children should achieve by age according to the educational system.

Methodology / Creative process / Concept development

Digital Me

As mentioned earlier, a platform to learn how digital technology can affect the development of children's identity would be the first touch-point of the concept. This gave very good responses in my evaluation from parents and educators on using the same platform to get informed.

I started off by drawing a rough work flow of the journey for this platform. I wanted it to be straight forward in the sense that parents and teachers could find their way regardless of them being first time comers or returning visitors. It is easy to create community in school environments: teachers tend to work together when it comes to sharing resources, and when they recommend a tool to students or their parents, word of mouth goes a long way in sustaining a system and letting it grow. Because of this I divided it into two main parts: an informative one for first time comers, and a semi-crowd sourced one with the tools, support and community for those already familiar with the platform.

The second task was the content of the site. During my research I found a lot of data that would be of great value to give support to parents and teachers. I also found that many of the information sounds very complicated or scary, and that fueled the disbelief that doesn't help improve the relationship between digital natives and the adults around them. Presenting the relevant information, in the right amount and with an appropriate tone of voice was very important for the concept: if it didn't succeed here, parents and teachers wouldn't explore the rest of the platform.

Tone of voice

To determine the right tone of voice of the platform, I defined the name and I explored a visual languages that could give me the feeling of what I wanted to achieve. I wanted it to be approachable and casual, and it should have some balance to appeal both the adults and the digital natives.

I decided to call the platform "Digital Me+". The name addresses the digital natives as the indirect target audience to show clearer who would benefit from the site. The plus sign indicates addition: of "digital "as part of oneself, of the parents and teachers working together with for a better development of the self, and of a series of tools that could work alone or together to enrich the process of self exploration.

"For the benefit of the kids it is very important that parents and teachers work together and help each other".
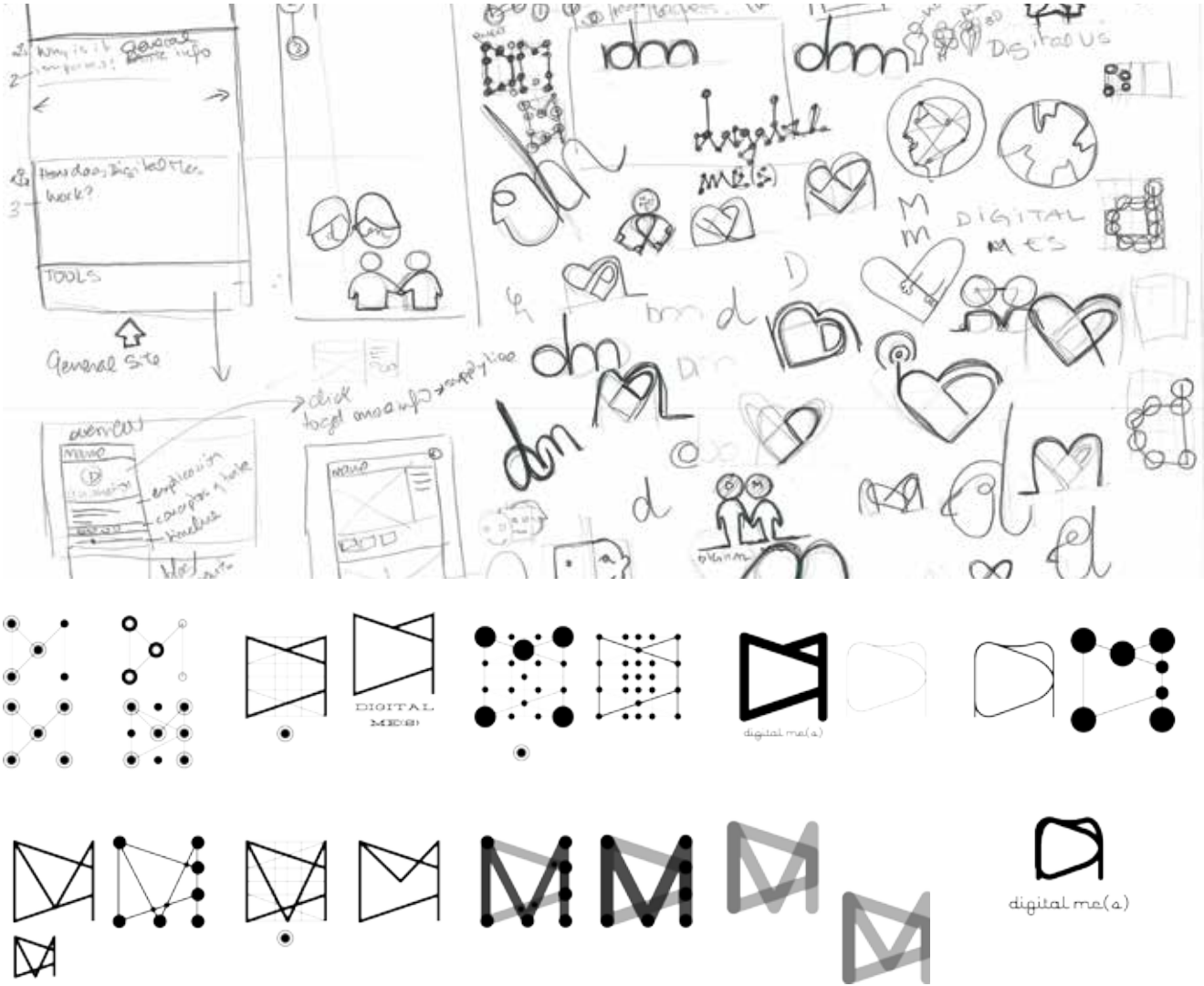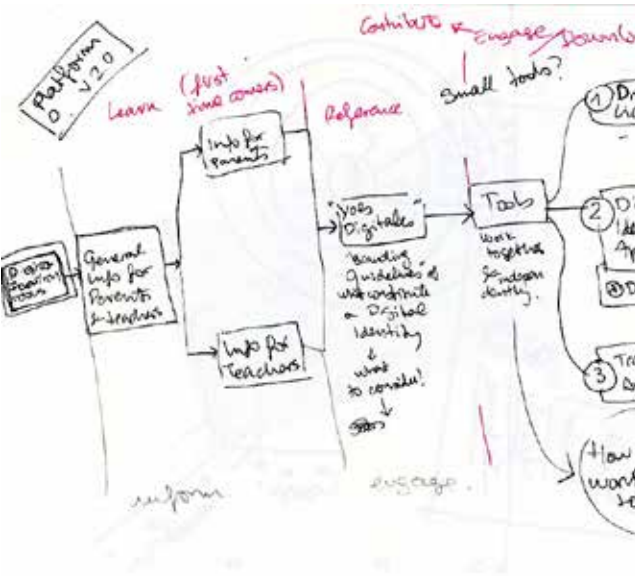
Methodology / Creative process / Concept development

A tool for the digital natives

I developed in detail one of the tools that teachers and parents can get at the main platform. It combines some of the concepts that tested well in the ideation phase.

The core of the concept would be a tool for the digital natives. It would focus on generating content and on learning how to use it to discover about oneself, before starting connecting with others. Even though it may seem an obvious solution, I decided to focus on this because research prove it to be quite relevant: parents today spend a great amount of time using digital technology for entertainment and social media; yet educating on this was the hardest task for them when their children reached a certain age.

Even though social media is about connecting, it includes two behaviors that have been forgotten. First, the data we use to share with others, like pictures or comments, is created with the purpose of broadcasting our lives. Second, that data prevails in the cyberspace and builds our digital identity. For this reason, I wanted to design something for digital natives to generate content or self documenting lifestyles for the purpose of learning and reflecting on themselves, and not for sharing.

Self documenting lifestyles to learn about themselves

Self-reflection is not something common on children, yet when accessing technology they are exposed to concepts that appear only when one has questioned his or herself. Still, young pre-teens spend a great amount of time in contemplative activities that allow the mind to wonder. Cameras make possible one of these activities: taking pictures.

Digital natives would capture and create content about the world around them, and use it to learn about their own behaviors. To do so, they would use their own camera: in

my research I found it was the only digital object they are attached to, that has a clear functionality and that they use for a contemplative activity that can prompt self-discovery and reflection.

Me & My World digital application

I started this with a basic information architecture of the platform, defining each section of Me & My World. "Me" would be the part of the application that allows pre-teens to learn and build their digital identity, and travel back in time to reflect upon their explorations . "My World" would be the part of the application that allows them to capture data about themselves, and to learn how to share it when the time is appropriate.

They would start building their own identity aided by the teacher, who'd bring up concepts like real names, user-names, avatars, passwords, gender, ethnicity, nationality, religion, addresses, etc. By simply tagging each picture, they could associate places, people and activities to it, and learn, share and compare with classmates, or to comment and discuss at home.

I put together a main flow of wire-frames for testing. This time it would also be done remotely with the teacher, to see if the content and the tone was appropriate for the age group, and if she could use it to teach her 2nd grade students. At this point the wire-frames were at a quite advanced stage but still look low-fidelity to keep the focus on the content. I also sent her a simple version of a blueprint to get her opinion on how the experience would be for all the people involved. The reactions I got from her were very positive.

Inspiration

My main inspiration was the learnings I got from the cultural probes, so I followed the structure I used in them when framing the platform. I was also inspired by a few social media services and their missions.

Path's "smart journal that helps you share life with the ones you love" was useful in the smart journal perspective of it, and gave me ideas on the kind of things adults capture today about their own lives. Even though it is similar to Facebook, they are very different in they way the state their goal. Facebook's mission is to "Give people the power to share to make the world more open and connected", which is completely opposite to my goal of generating content for oneself.

The service Klout measures "influence" based on user's presence in social media: likes, mentions, numbers of friends, etc. This was valuable in my process in a way that it allowed me to see how to be aware of on-line reputation. Likes, mentions and hash-tags are easy to count but fail to acknowledge ethics and detect toxic behaviors, so this would be something that had to be curated by an actual person.

For the visual language, my main inspiration was the cover of the book "The Little Prince": It puts the child on top a planet, which is a very literal translation of the name "Me & My World". During refinement, I changed the idea of a planet for a floating island for practical reasons, but it kept the same principle and it made it look a bit more outstanding. I used flags and banners to indicate the "personal landmarks", and gave it a geometrical, wrinkled paper look to accentuate the educational aspect of it.
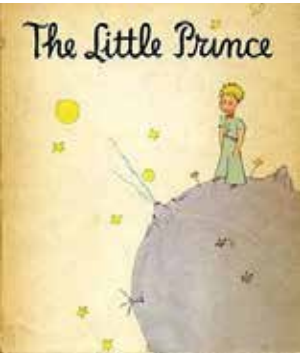
# Methodology / **Creative process** / **Concept development**

Security

Because the content would be generated by small children, how to keep the data safe was something important to define. The tendency today is to have everything in the cloud in services like DropBox, iCloud or Google Drive. Using cloud storage for the concept was the obvious solution because digital natives would access the platform from different places; but it had an issue: parents and teachers have a hard time understanding and trusting it, which was going against the principle of being transparent.

So I decided to go for a desktop application and a tangible device that would act as a personal, "hardware login". This would make it easier for parents and teachers to educate digital natives, and they would learn how to deal with accessing personal information from different places in a secure way.

Because children would be the end user, security was a deeper issue, this one related to how forgetful and unconcerned they can be when it comes to taking care of things. The tangible device, or "hardware login" would have flash storage in it to hold children's pictures and the data they'd had associated. This device would travel with them from home to school in a daily basis, so the chance of losing it was quite big. This had the danger that if someone found it, they could access the personal information in it, so in the concept development I had to find a solution for it to be personal and nontransferable.

The form language of it had to address both problems in an appropriate way, for teachers, parents and the digital natives, and it had to relate to that of the digital platform so they look like they belong together.
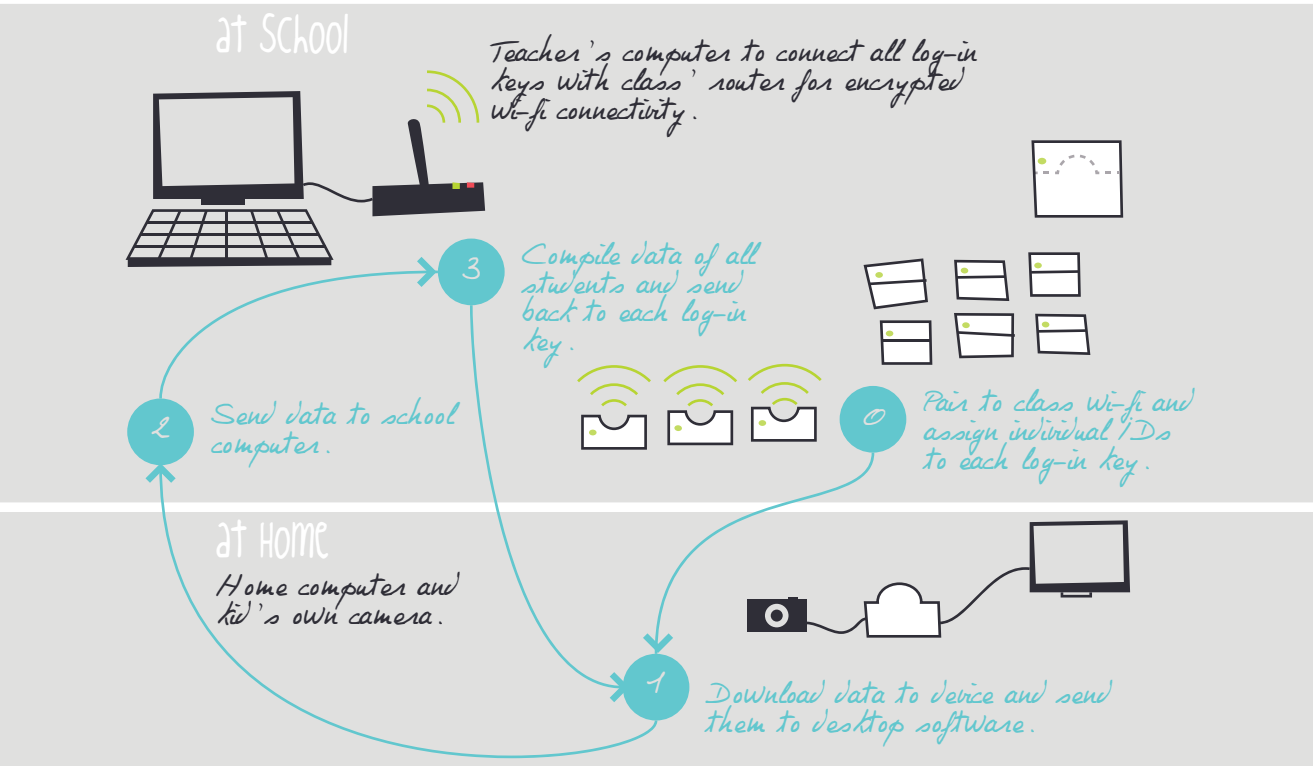
The Software
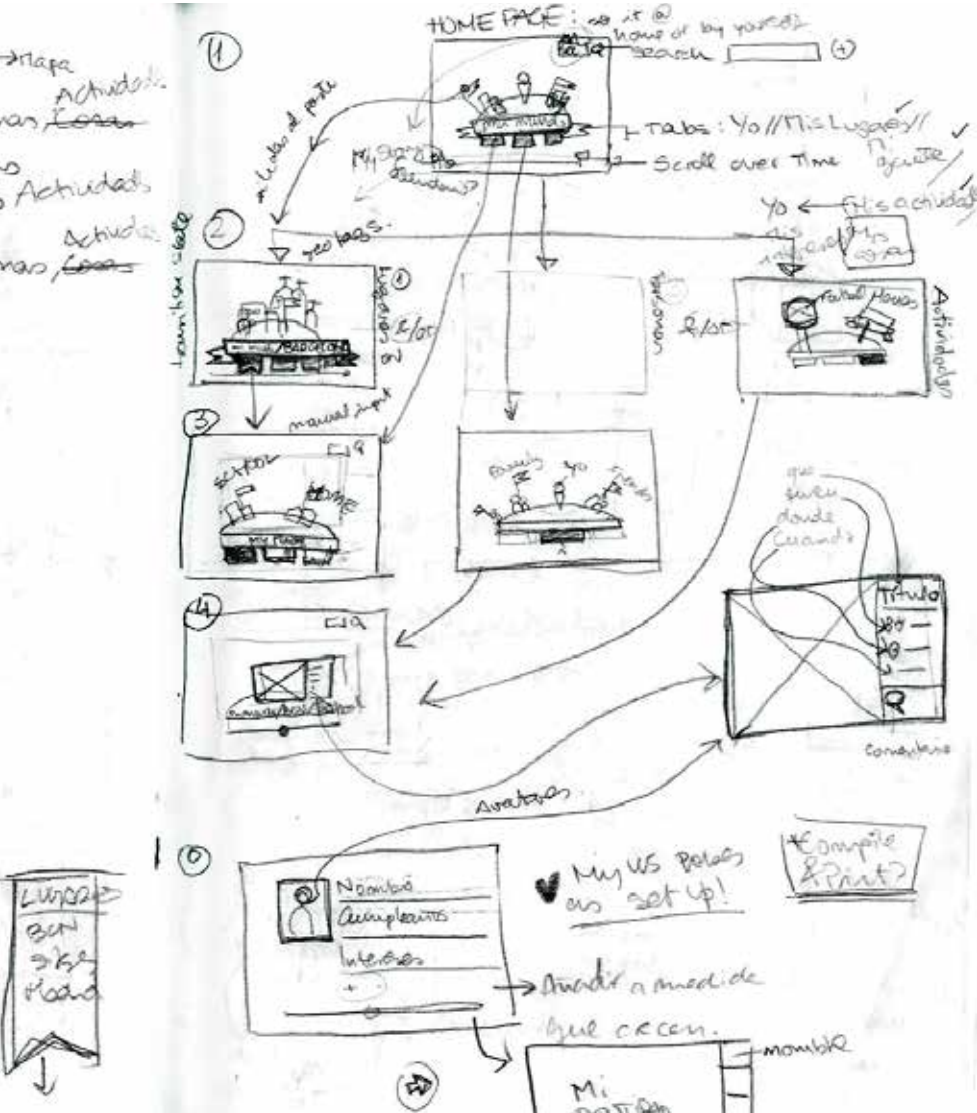
"I think it is very appropriate and needed, although it will depend on how parents will exert control on this. I agree it would be more effective from school, since we teach without judging and that would have a better impact when they are teenagers. In terms of age, I think that the same way we treat drug prevention, it can be more useful at an early age because the concept stays in them even though it doesn't affect them directly, they see it more objectively and with a more positive approach. But definitely it is better to have a bit of control over them than let them be with their free will, they should be educated. It's like the topic of sexual education and the consequences of a good or bad communication between parents and their children."

-School teacher

at School

Teacher's computer to connect all log-in keys with class' router for encrypted Wi-fi connectivity.

3 — Compile data of all students and send back to each log-in key.

2 — Send data to school computer.

0 — Pair to class Wi-fi and assign individual IDs to each log-in key.

at Home

Home computer and kid's own camera.

1 — Download data to device and send them to desktop software.

Methodology / Creative process / Concept development

The environment of the UI was created in the 3D software Cinema 4D. Its elements are virtual representations of the kid's world (people, places and interests) with 2 levels of information. The idea of them being 3D was to allow for engaging transitions when drilling down from groups, to subgroups, to details; and interacting with the 3D elements is possible in this process. The low-poly visual style tested great in allowing for a simple representation of all the things that could be found in kid's world and mind, and in creating a rich visual experience that leverages in kids the feeling of being monitored by parents and teachers.

The iterations of the wireframes didn't change much in essence, but in its visual representations; from the metaphore to the icon styles. These were inspired on the look and feel of the 3D world, using a flat icon style.
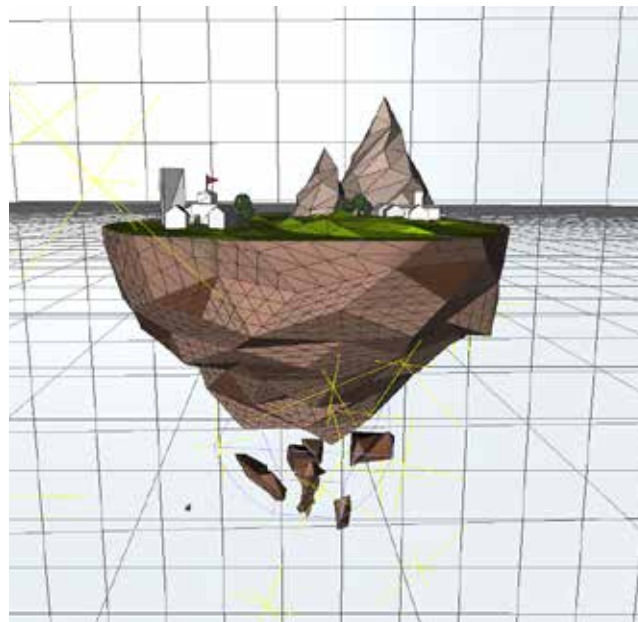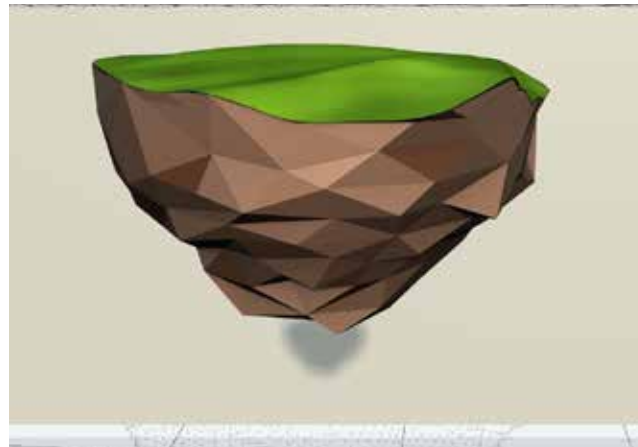
Methodology / Creative process / Concept development

The Hardware

I took a very crude approach for the development of the digital key, for two main reasons: one was to make very clear that, as an interaction designer my focus was on the digital experience; and two was to prove feasibility with today's technology.

The first reason is answered in the simplicity of its shape: a cube. To translate a ¨digital log-in¨ into a physical one I decided to make it like a 3D puzzle. As for the second reason, its shape would be inspired in the low-poly style of the interface, allowing for having different keys with the same appareance to provoke a sensation of security.

The details of production would not be specified, but I imagined that 3D printing would be a very interesting approach to it for a school environment.
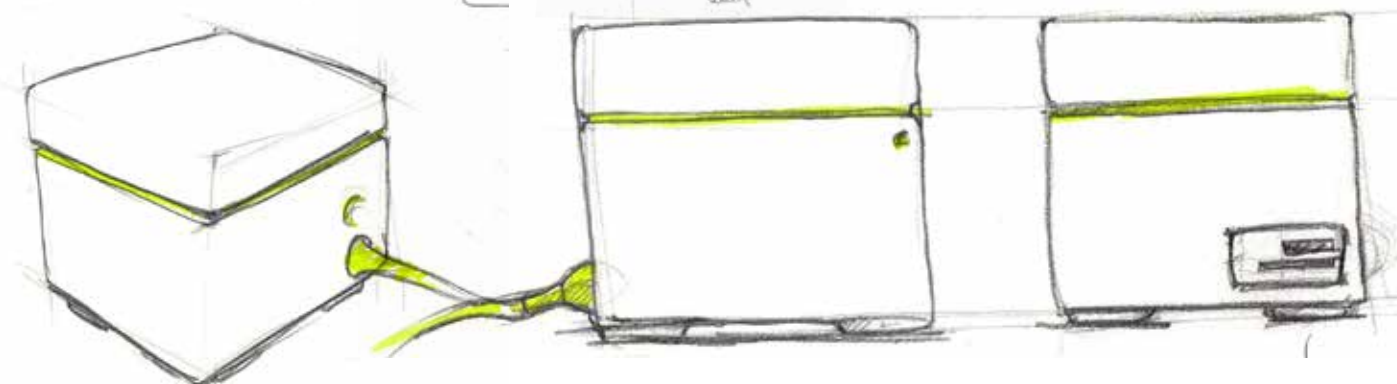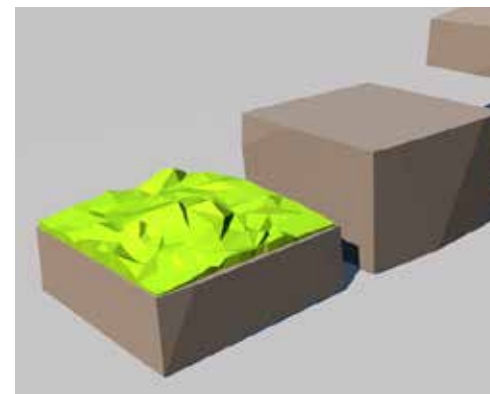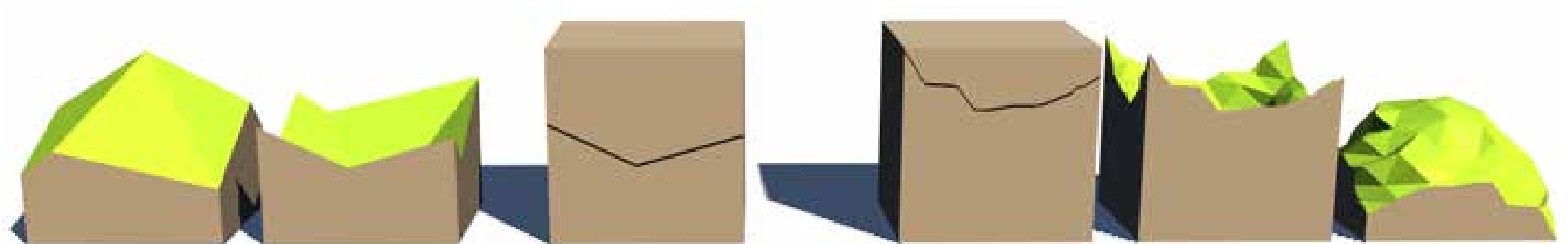
Result / Digital Me+
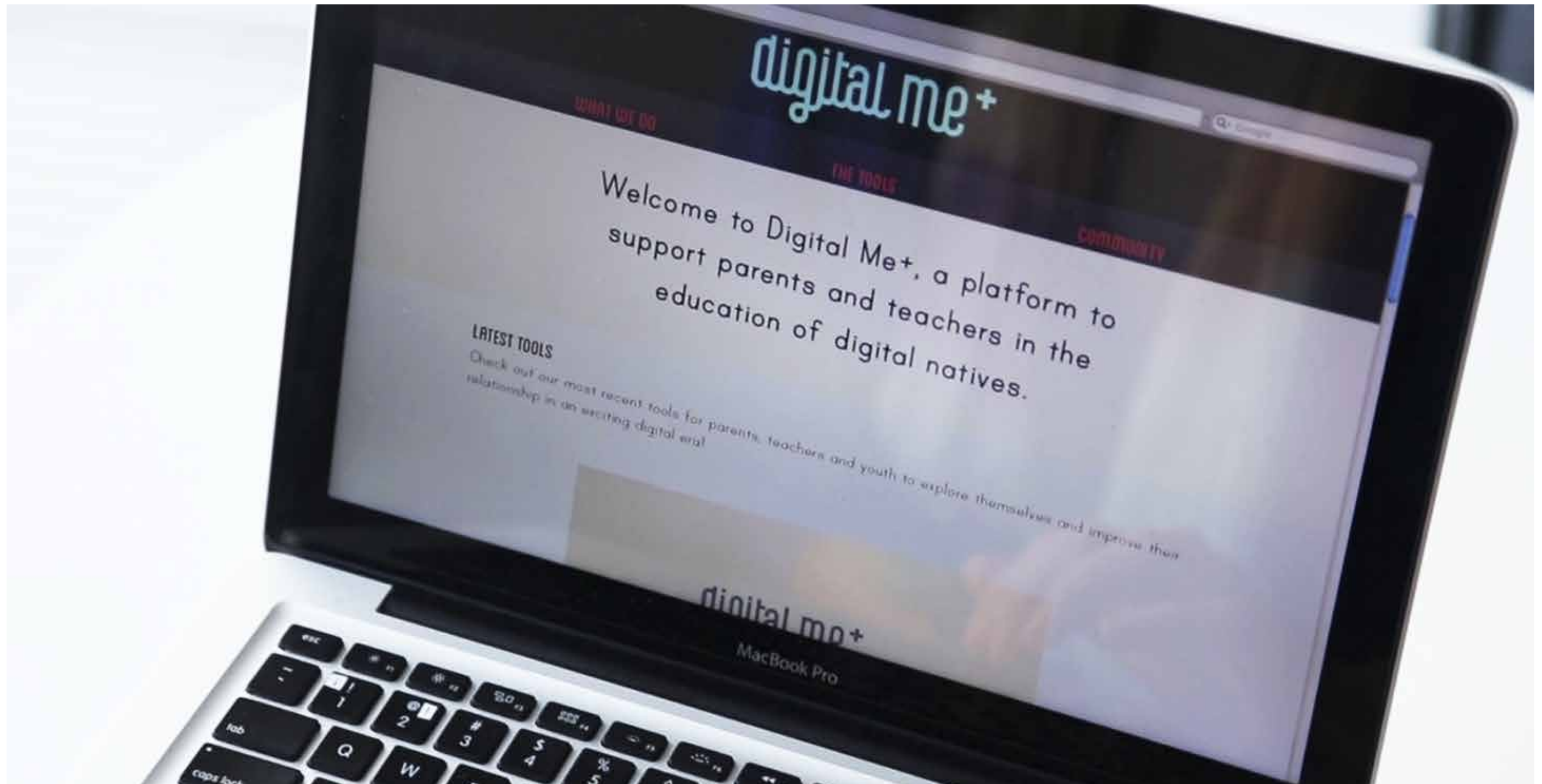
Result / Digital Me+

A platform for parents and teachers

Digital Me+ is a platform to support parents and teachers in the education of digital natives. From the homepage, its architecture is divided into 4 parts:

1. Explanation of the purpose of the platform

2. Overview and details of the tools

3. Page for community

I focused on the first 2 pages only, and on the tool I called

Me & My World. All pages have a header with the logo, a navigation bar with access to the other pages, and a footer with general project information.

Home page

It displays a gallery with the most recent tools for parents, teachers and youth to explore themselves and improve their relationship a digital era. The gallery shows a cover image or a teaser video.
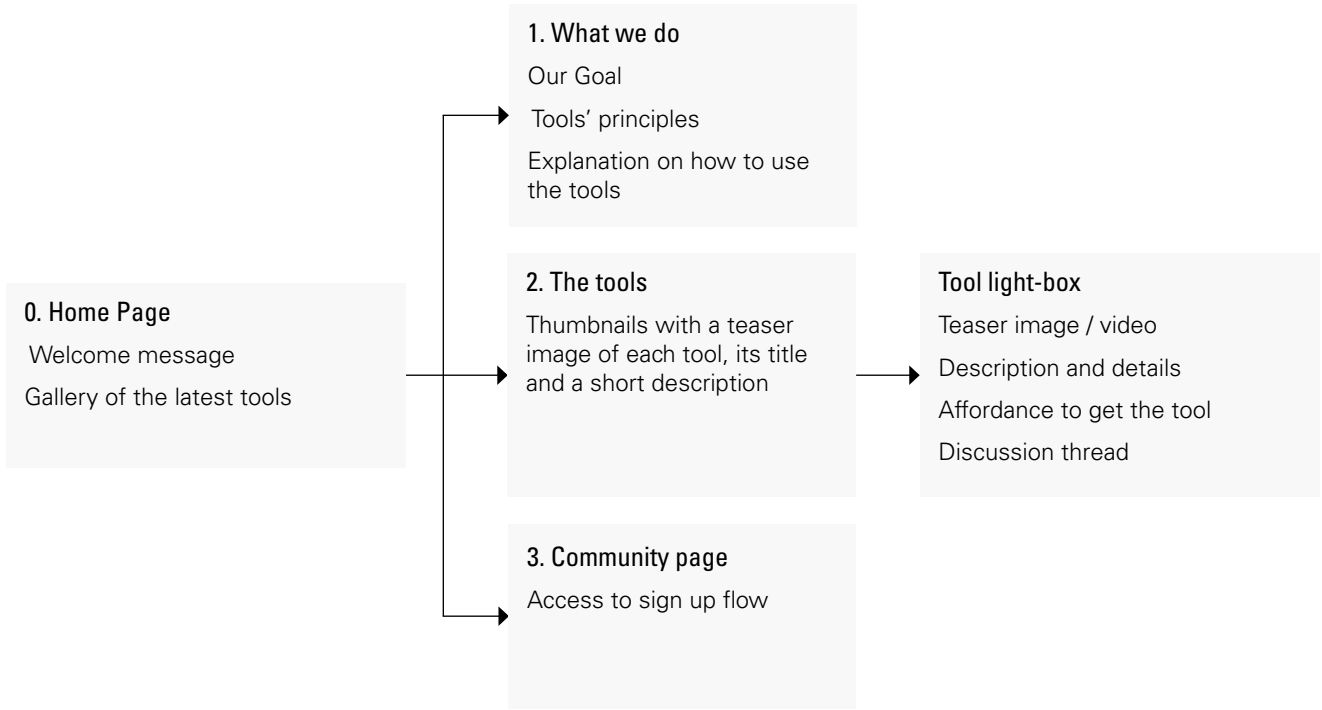
What we do page

It introduces the purpose of the platform. It gives a bit of a background on the reason why the platform exits, and it applies the design goal and principles I used during the process in the way it presents the tools to parents and educators.

Here is also explained that the tools are part of the educational program of study by growing with the children so the impact of the learning evolve as they grows along with their identity; and that they measure achievements by unlocking goals depending on each children's development and the assessment of the adults around her (parents and teachers).

1. What we do
Our Goal
Tools' principles
Explanation on how to use the tools

2. The tools
Thumbnails with a teaser image of each tool, its title and a short description

Tool light-box
Teaser image / video
Description and details
Affordance to get the tool
Discussion thread

0. Home Page
Welcome message
Gallery of the latest tools

3. Community page
Access to sign up flow

Age	7	8	9	10	11	12	13	14

A — Learn & Create
B — Manage
C — Share
D — Migrate & Be independent

Identity | Create and Share content | Private vs Public | Anonymity | Reputation | Sensitive Content | Addiction

Result / Digital Me+

Tools page

This page offers an overview with thumbnails of the tools. Once clicking on them, a light-box shows more detail. This would allow for a faster navigation when browsing as well as a more thorough description if parents or teachers want to know more.

The information inside the light-box is scrollable for a more seamless experience. It is mainly divided into a descriptive information section, with a name, a teaser image, an abstract of what the tool is about, the identity attributes it could teach, how it could evolve over time as the digital native grows, and a more detailed description with features and functionalities. At the end of the section there is an affordance to test and to get the tool.

The second part of the light-box aims at creating community by simply sharing questions or comments on their opinions or how they have used the tools.

Community page

I decided not to focus on this part of the flow as I felt working it was more relevant to work on the tools. However, I had a general idea of how it could work. Parents and teachers would access it by signing up. This could be done either by having an account, which has the possibilities of keeping track the comments thread, of the tools used or even to customize them; or by using already existing social services like Facebook. As convenient as this possibility might be, extra caution should be applied here: parents and teachers would need to be very aware of not sharing personal data that could relate them to their students in order to protect their privacy.
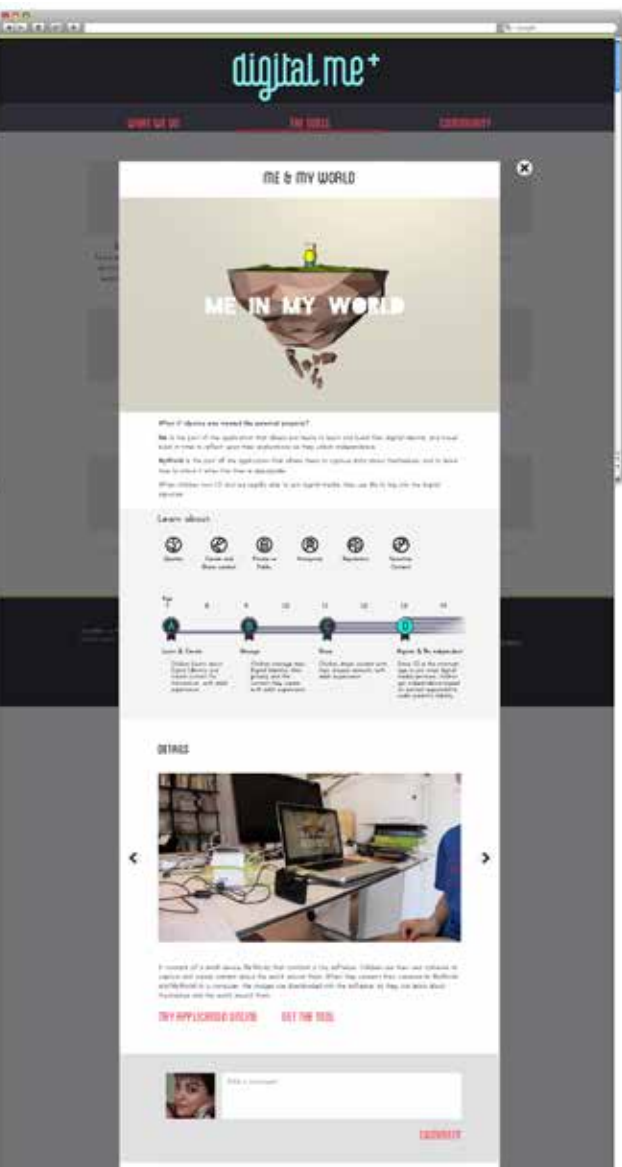
Result / Me in My World
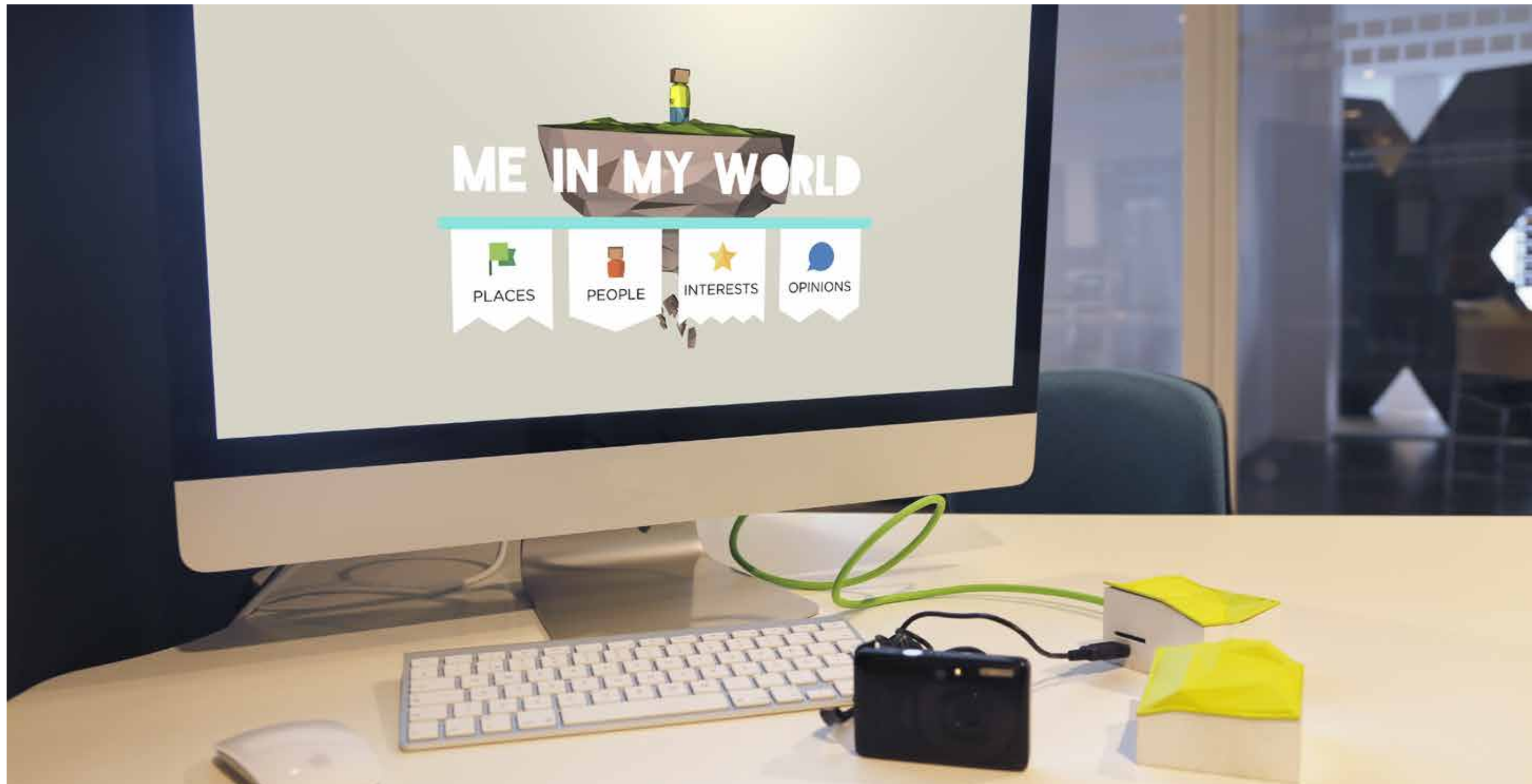
Result / Me in My World

A tool to explore identity with digital media

Me in My World consists of a small device that gives access to a software acting like a physical log-in key.

Digital natives use their own cameras to capture and create content about the world around them. When they connect their cameras to the key, and the key to a computer, the images are downloaded into the software. In this way, the physical log-in key gives them access to the computer application they use at school and at home.

Elementary school teachers learn about Me in My World and order it from the Digital Me+ platform. After a few set-up steps, they give a personal, nontransferable physical log-in key to each student. From this moment on, Me in My World stays and evolves with them until they reach 13 years old, when they are legally able to join the social media services:

- Learn and Create: Children learn about digital identity and how create content for themselves with adult supervision.

- Manage: They learn to manage their Digital Identity, their privacy and the content they create with adult supervision.

- Share: Children share content with their closest network, with adult supervision.

- Migrate and be independent: Since 13 is the minimum age to join most digital media services, children get independence based on earned responsibility under parent's liability.

Me & My World has potential to educate digital natives on the abstract concepts of identity.

digital me+

AT SCHOOL

ME & MY WORLD

AT HOME

ME & MY WORLD

EDUCATORS

+Learn about DigitalMe(s)
+Order Me & My World for students
+Download App for Teachers

+Receives devices
+Assigns one to each student and pairs their wi-fi to the class intranet.
+Install admin application in class computer

+Teach about identity and opinions to class

DIGITAL NATIVES

+Get own device with software in it

+Learn about identity and set up profile and discover what other classmates do

+Plug into computer, downloads pictures, tags them and fills in info about herself
+Share learnings with parents

PARENTS

+Download App for home computer

+Install App at home computer
+Educates, supervises and prompts opinions

Result / Me in My World

The Hardware

The physical log-in key is divided into two parts: a home dock and a portable token. These two parts have to be connected in order to grant access to the software and the data. The way they fit together is digitally and physically unique for each pair, making each key a one-of-a-kind. Each one of them comes with an ID number that the teacher assigns to each student when she receives the keys for the class.

The static dock stays at home, and digital natives use it to download their pictures and see them in the application in the computer. The portable token they bring back and forth from home to school. They use it to learn and access their data at school, and to discover connections with their classmates.

Technology

The technology in it should allow for a seamless and safe experience. It uses:

- RFID tags to recognize that the two parts belong together

- USB port and SD card reader for the children to download their pictures from their own devices (cameras, video-game consoles...)

- Built-in Wi-Fi antenna to connect to the encrypted intranet in the classroom at school.

- Integrated USB cable to connect the home dock station to the home computer.

- Flash memory to store pictures and their associate data.

SD card reacder

USB port

USB connection

Wi-Fi antenna

Wireless pairing button

LED indicator

Battery

Memory storage

RFID tag

RFID Reader
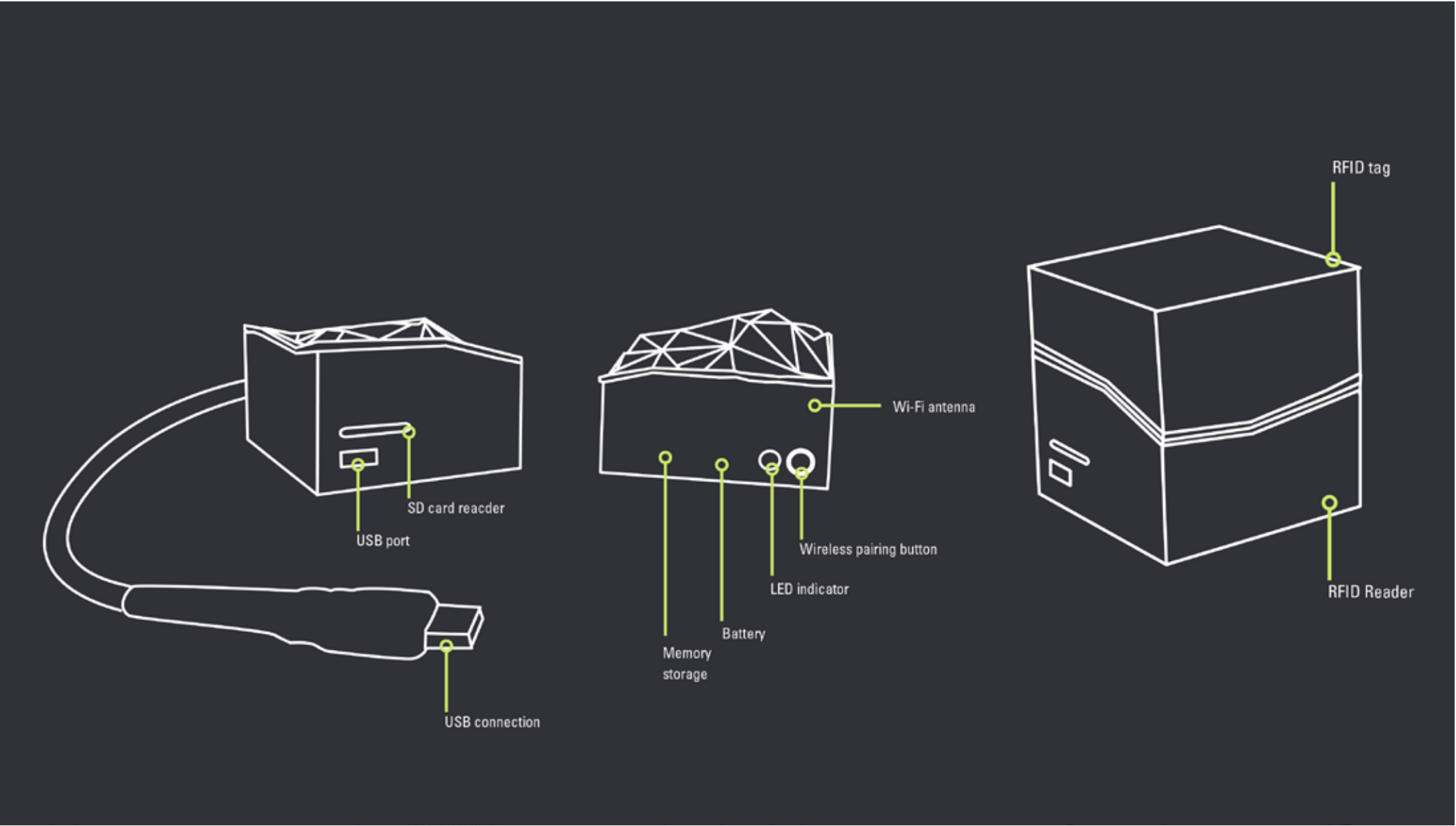
Result / Me in My World

The Software

As soon as the physical log-in key is connected to a computer, it launches a desktop application. I focused on the main flow of exploring the data so digital natives can learn about themselves. It's worth mentioning that there is a process of tagging pictures with people, places and interests when a camera is plugged to the log-in key.

Home page

It gives an overview of "Me and My World". "Me" is represented by an avatar, and is the part of the application that allows digital natives to learn and build their digital identity and travel back in time to reflect upon their explorations as they unlock independence. "My World" is represented by a floating island and is the part of the application that allows them to input data about themselves. The sections under it are Places, People, Interests and Opinions.

The home page also allows for direct navigation through a search and time-line tool.

Overview Pages

They are two layers of visual representation of Places, People, Interests and Opinions; clustered based on how the pictures were tagged. For example, under People we can find the cluster of Classmates and the cluster of Family; and under it we can choose to see pictures of grandma or the cat.

Detail Page

The process of drilling down to a detail page would be the equivalent to check boxes in a filtered search. At the end, the detail page shows a gallery of all the pictures that have the same tags, and they can be navigated chronologically.

Opinion Section

The detail page works slightly different in the Opinions section. The Opinions section is tailored by the teachers to educate on the aspects that can affect identity development in a digital context. Its goal is to teachers educate the abstract concepts of Internet, privacy, maturity, awkwardness or community; concepts that digital natives encounter with technology but are not cognitively mature enough to face.

Using hypothetical situations, things that happened at school, inspirational images or videos from the net, teachers would prompt students to give their opinion by expressing how the situation made them feel, or how it made feel the people involved in it.

This tool can be used in a way that teaches anonymity and reputation in an age appropriate way.

Me

It holds all the information that represents the digital identity. These areas are taught at school and discussed and explored at home. Parents and teachers find support on how to educate in this context in the on-line platform Digital Me+.

The topics go from Personal Identifiable Information (full name, pseudonyms, user name, physical characteristics like avatar, face, looks, and other biometrics, gender, age or authentication); to other information related to identity like ethnicity, nationality, language, religion, sexuality, reputation. It also includes the information related to behaviors & digital footprints like browsing, communicating, broadcasting lifestyles, or sharing content.

Result / **Me & My world**

0. Me & My World Homepage

1. Overview Pages: Me pages
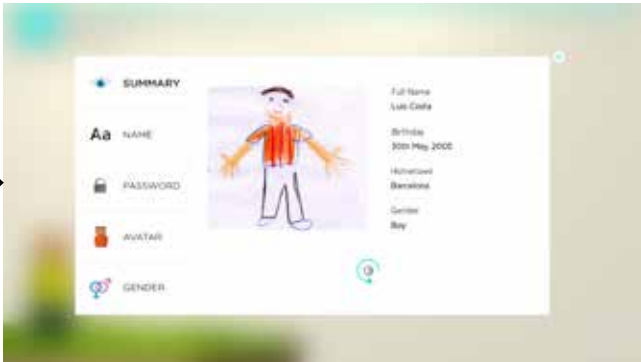
Places Pages
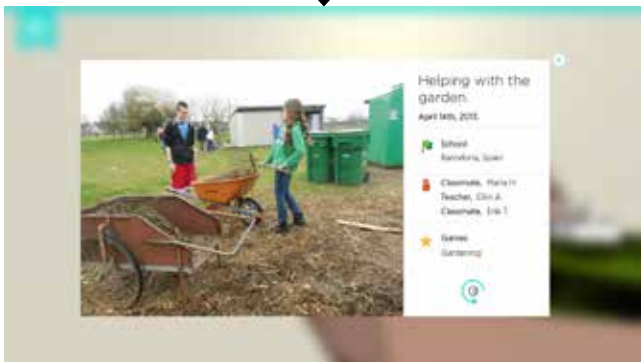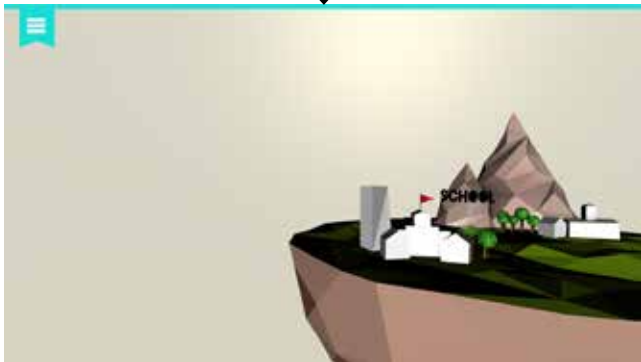
People Pages
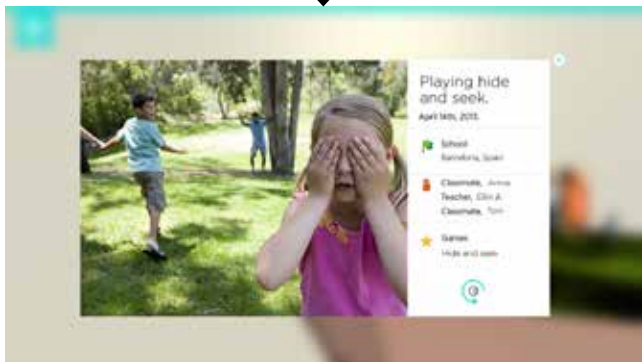
Result / Me & My world

Interest Pages
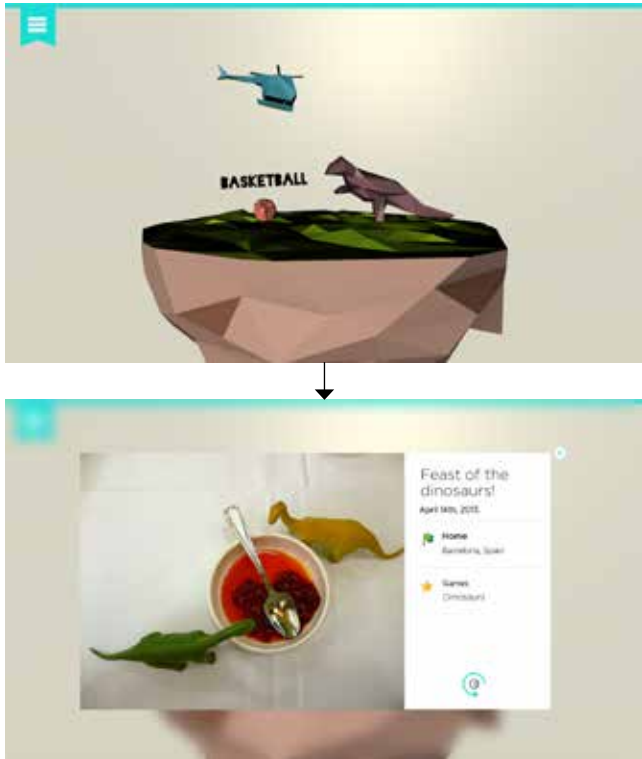
Timeline

Global search

Options Bar
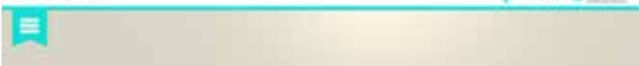
Result / Me & My world

General flow

Tagging pictures page

Importing pictures page

1.Overview Pages

Launch application

yes

Is key plugged to computer?

no

Plug Key to computer

Splash / Welcome screen

Is Camera connected to the computer?

yes

no

0. Me & My World Homepage

Me Page
General Overview

Me Page
Identity attribute
(eg. Avatar)

Places Page
Geography
(eg. Umeå)

Places Page
Architecture
(eg. School)

People Page
All Groups

People Page
Detailed group
(eg. Family)

Activities Page
All Groups

Activities Page
Detailed theme
(eg. Basketball)

Opinions Page

2. Detailed Page
Light-box with pictures gallery

Result / **Personal reflection**

When I first started thinking about digital identity for my thesis topic, I was curious about in what ways technology is affecting the personal development. Early on the research phase I started to pay attention to the stories that had kids and digital media as the central topic. I found tons of stories, and the people who knew what I was working on sent me stories too (to this day I still receive links to articles on newspapers or magazines). This was a good thing in a way that it reinforced my believe of it being a relevant topic in today's society.

Unfortunately the stories were not happy stories, and like the person who reads too many sensationalist news I grew skeptical and with a very negative approach towards digital technology: for an IxD MA candidate, that is a problem. One of the interviews I had with Eva Svedmark, a PhD candidate in the department of informatics at Umeå University, was an eye opener and a key turning point on the way I addressed the process from then on. She reminded me of the ethics of design: "A knife isn't designed to kill people, but a good designer would consider this sort of things".

I was also concerned that the negativity of the stories I

found on my research, and the heavy presence of legal issues in them would drag me away from the original focus, the kids; so I had to start looking at it with optimism. Designing for kids is not an easy task for all the things that should be taken into consideration during the process, and coming up with a solution that is appealing for them is also part of the challenge.

The combination of these concerns made me turn to critical design. It interested me because it focuses on studying the impact and possible consequences of new technologies, and outlines new goals and areas of interest for designers. Also, doing critical design is great fun!

I am the kind of designer who is in love with the process. I really enjoy trying and coming up with new methodologies that fit the needs for each project, goal and user. Because of the fast pace of the project this had to be done efficiently, so I approached the research phase more like an inspirational journey in which I always walked the same path, but with different companions to have distinct

experiences every time. Where the insights met is where I planned to focus on the phase of developing a concept.

This approach made the fieldwork research fascinating. With that excitement I dove into analysis and synthesis of findings, and halfway through it the negative feelings started appearing again: the quantity of information was too overwhelming for one person to digest alone, regardless of how comfortable I might be with huge quantities of information. This bad feeling stayed with me until I had defined my design goals and principles. From then on the traditional design process went as expected, with the phases of ideation, development and refinement one after the other.

As awkward as it is to write a reflection before the project is done, I feel very satisfied with it so far. During the process I got to do the things I might not do again when I am no longer a student, and I got to wake up some dormant personal skills I hadn't used in a long time. The methodology of the thesis as an MA project I perceived as

somewhat unrealistic, almost like an experiment. In about 4 months, me and my classmates are, for the first time during our education, project planners, recruiters, researchers, strategists, service designers, graphic designers, product designers, prototypers, storytellers, etc...

It is also the first (and last) time we are all working by ourselves in completely different projects. Even when working alone, is part of the culture at school to help and assist each other, but this time, helping each other hasn't been as fluid as we are used for it to be. This is certainly something I really missed in this project. During this education we've learn that design is a multidisciplinary field, and I have experienced it with exceptional group dynamics among the rest of my classmates.

This combined with the workload and the internal and external expectations on the en result, puts us on the edge of ourselves, making the thesis project not only a professional, but also a profound, personal test.

My emotional journey

Pre-project phase   Research Phase   Synthesis Phase   Definition of goal and principles   Ideation and concept definition   Refinement
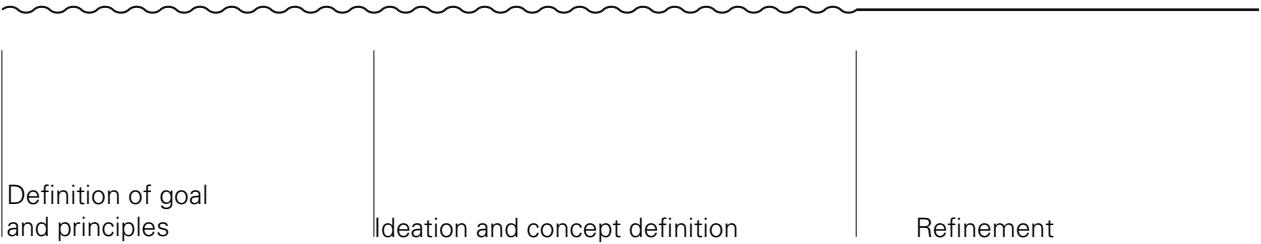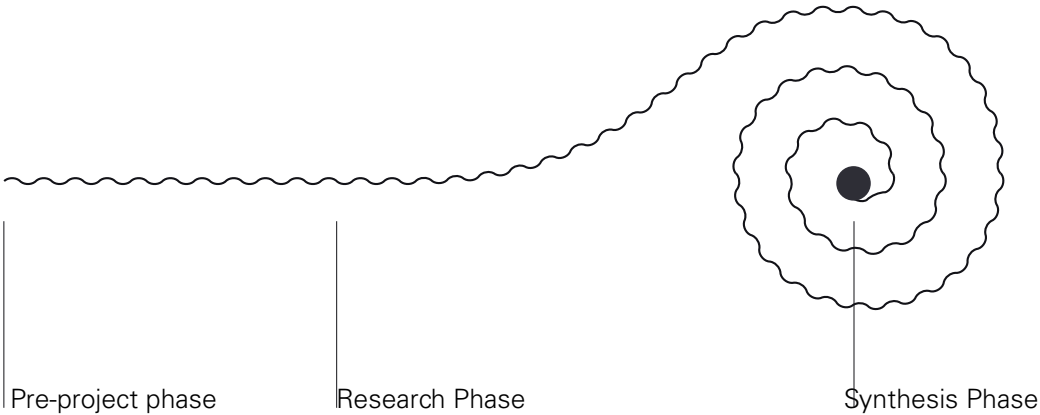
References & Appendicces
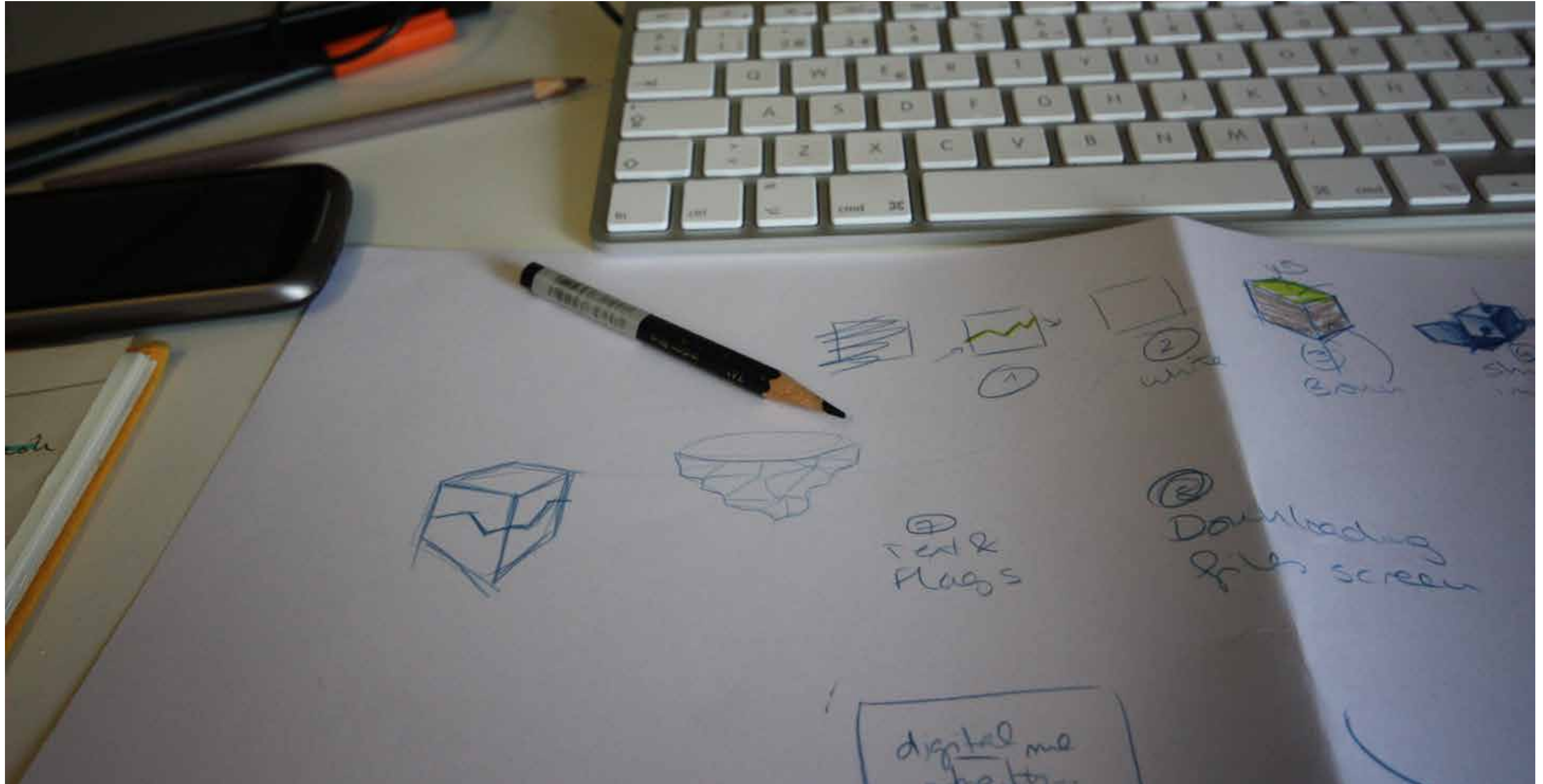
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Appendices

Timeline

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

JAN — KICK-OFF (23) · INSIGHT FROM EXPERTS IN UMEA · DESKTOP RESEARCH ON IDENTITY

FEB — INSIGHT FROM EXPERTS, TEACHERS, PARENTS AND KIDS IN BARCELONA · INSIGHT FROM EXPERTS IN UMEA · RESEARCH GATEWAY · DESKTOP RESEARCH ON ONLINE PLATFORMS · ANALYZE RESEARCH MATERIAL

MAR — ANALYZE RESEARCH MATERIAL · PLAN IDEATION WORKSHOP · WORKSHOP · SYNTHESIS RESEARCH AND INITIAL IDEATION MATERIAL · HALF WAY PRESENTATIONS · IDEATION AND CONCEPT DEFINITION

APR — IDEATION AND CONCEPT DEFINITION · WIREFRAMING FOR TESTING · CONCEPT PRESENTATION · 5 WEEKS BEFORE PRESENTATION · VISUAL STYLE DEVELOPMENT AND USER TESTING · REPORT WRITING · REPORT WRITING

MAY — REPORT WRITING · REPORT DUE · UI WIREFRAMES AND ANIMATE TRANSITIONS · BUILD PHYSICAL PROTOTYPE · SCENARIO MOVIE · UI WIREFRAMES AND ANIMATE TRANSITIONS · EXAMINATION PRESENTATION · EXAMINATION · EXHIBITION PREPARATIONS · TALKS REHEARSAL · TALKS MATERIAL · UID DESIGN TALKS

■ DESIGN PROCESS PLAN

■ DEGREE DEADLINES

Appendices

Research: Who I talked to

Micaela Adolfsson,
Karin Nordbrandt and
Karin Jansson

Pedagogues

Bildmuseet, Museum of
Contemporary Art and
Visual Culture, Umea,
Sweden
In person interview.

Simon Winter
Cognitive Scientist and
Interaction Designer

Infontology, an online
live discussion on how
technology is changing our
reality and culture.

Discussion via email
correspondence.

Eva Svedmark
PhD Candidate in
Informatics
Umea University, Umea,
Sweden.
In person interview.

Simon Lindgren
Professor of Sociology
Umea University, Umea,
Sweden.
In person interview.

Jan Leidö
PhD candidate in Law
Umea University, Umea,
Sweden.

In person interview and
ongoing email discussion.

Anna Croon-Fors
Professor of Informatics,
Director of the Center for
Gender Studies

Umea University, Umea,
Sweden.
In person interview.

Celia García Colominas
Mossa d'Esquadra
Police department of
Catalonia, Spain.
In person interview and
ongoing email discussion.

IES Sant Jordi faculty

Júlia Riera
Principal

Fina Vilardell
Tutor of students of ages
14 to 16 years old, teaches
ethics and social sciences.

Jordi Rosés
Teacher of informatics for
students ages 6 to 16.

Chelo López
Teacher of kindergarten
students ages 3 to 4.
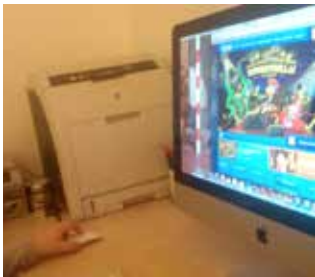
Playdates and Interviews

Children:
Early beginner informatics
enthusiast.

Parents:
Open minded and
concerned.

Fabrizio Ferraro
Associate Professor of
Strategic Management
IESE Business School,
Barcelona, Spain.

Training course "Creating
and Nurturing your Social
Network. The art of
building long-term mutually
beneficial relationships.

Col·legi Maristes La
Immaculada faculty

Ana Moyano

Dedicated teacher for
students ages 7 to 8.

Institut Jaume Almera
faculty

Joan Bartra
Head of studies,
responsible of informatics
department.

Albert Obiols
Coordinator of pedagogy.

Appendices

Interviews and observations

Appendices

Cultural Probes

Basic Demographics. In the workshop, I asked the kids to draw themselves in the back as a warm up.

Mapping their relationship with objects, places, moments and activities

Mapping the relationship with the people around them.

Sharing their idols and their reason for admire them.

Mapping their relationship with electronic devices.

Sharing how they see themselves in the real world when at home, school and by themselves, and how they see themselves in the digital world when interacting with friends, family and anonymous people (only the older kids)

Sharing what characteristics define them, and who they share them with (only the older kids)

Appendices

Cultural Probes
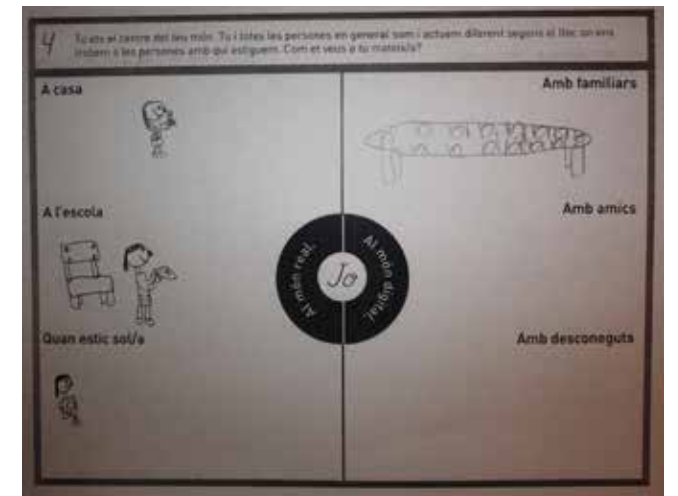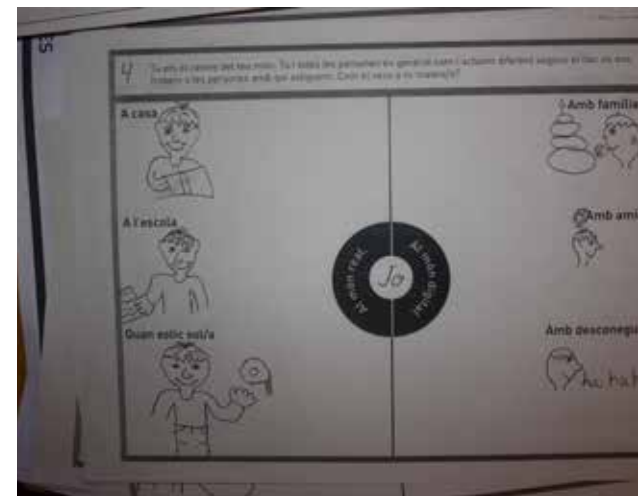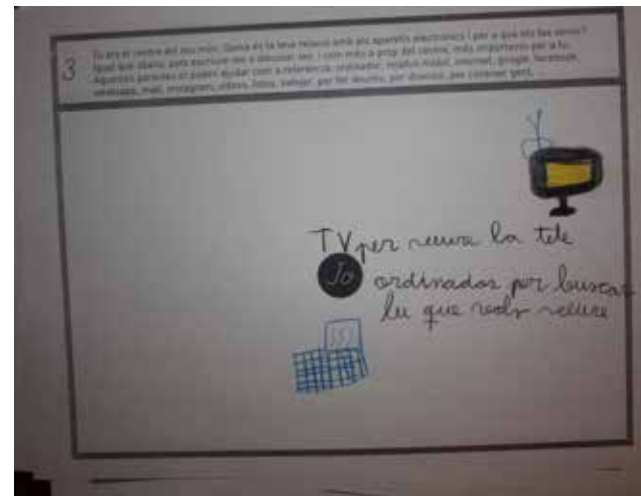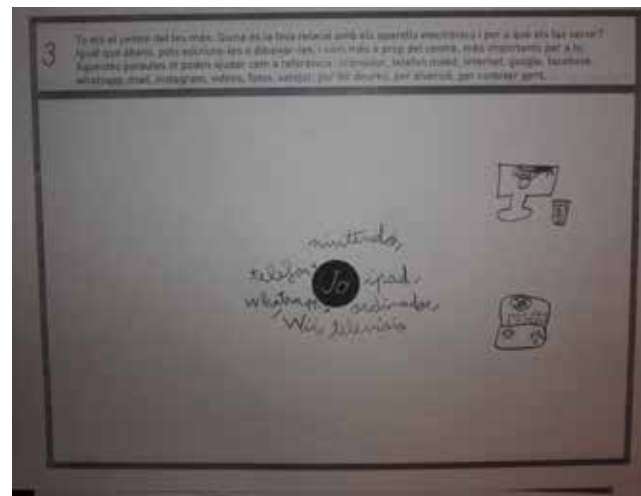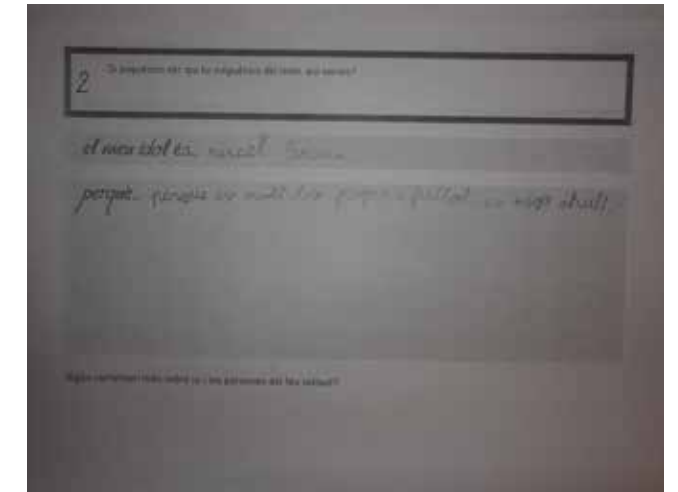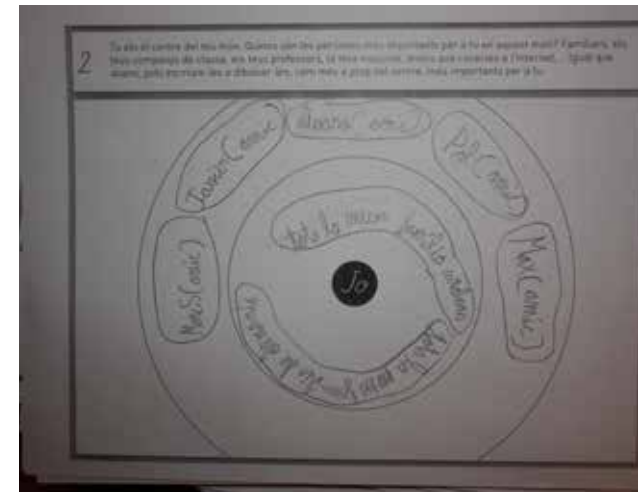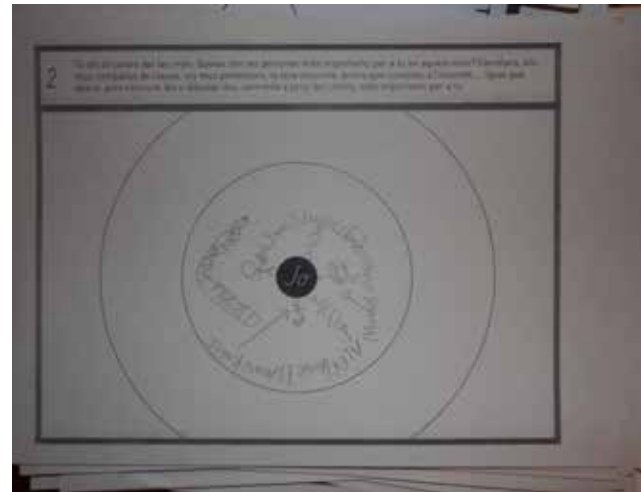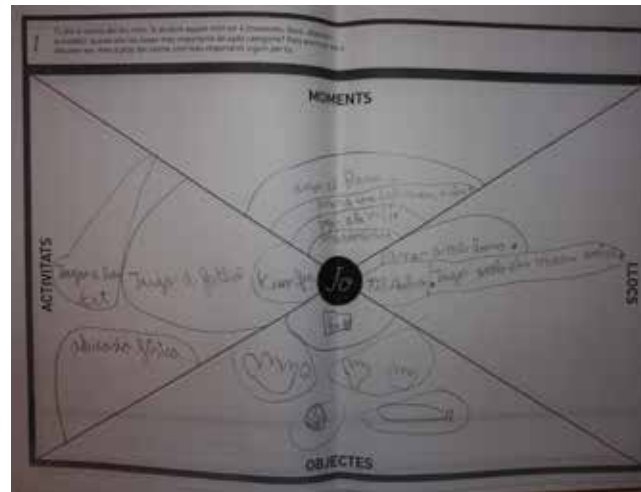
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Synthesis
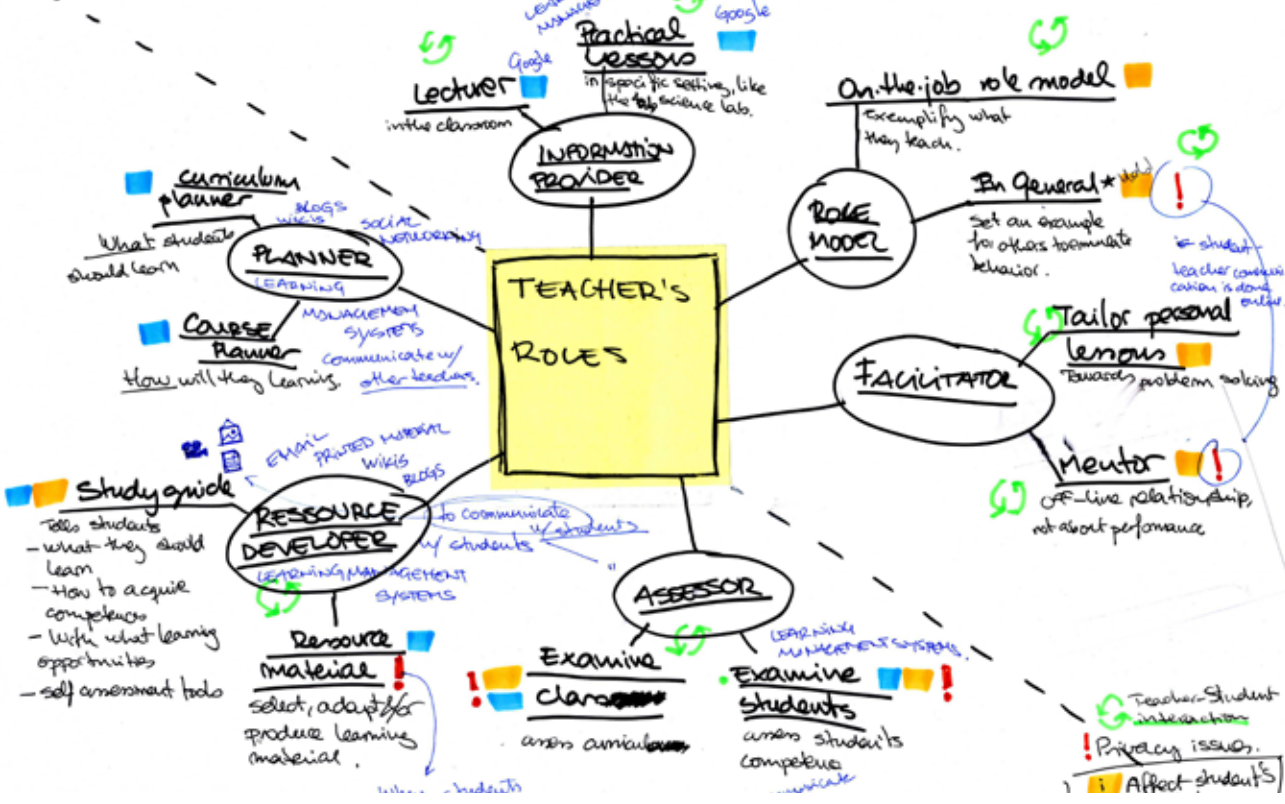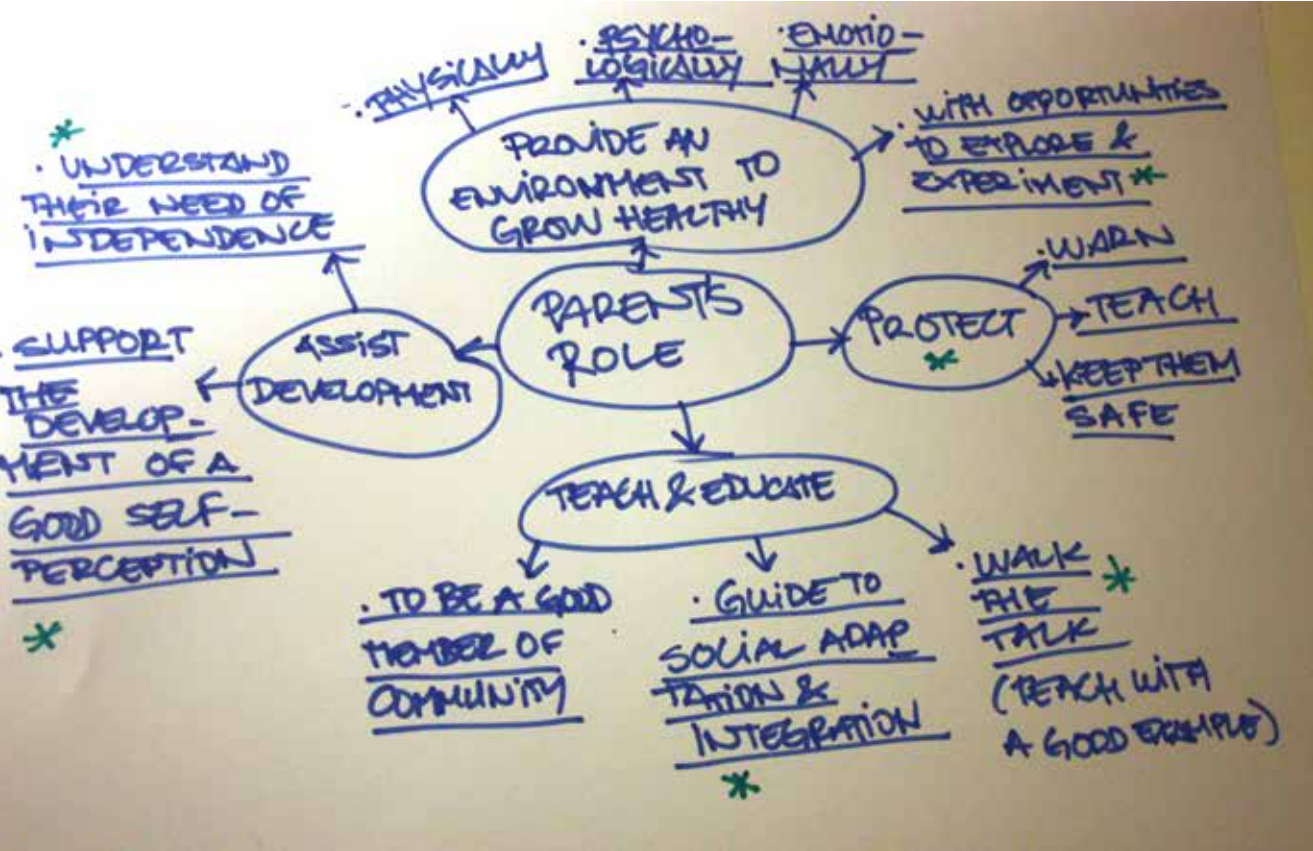
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Ideation: workshop assets

Youth

Girly girl ———●——— Manly boy
Very Social ———●——— Very Individual
Very Active ———●——— Very Idle

Parents

Tech Savvy ———●——— Tech Challenged
Engages proactively ———●——— Strict with Rules

Teachers

Proactive curiosity ———●——— Disapproval
Dissintierested indiference

is a very ACTIVE and SOCIAL 8 years old who loves

You can see she is a very GIRLY GIRL because she is always

is a very IDLE and INDEPENDENT 8 years old who loves

You can see he is a very MANLY BOY because he is always

is the mum of an 8 years old. She sees herself a bit CHALLENGED when it comes to technology, because

That makes her feel

When educating her 8 years old on the use of technology and media, she IS VERY STRICT WITH RULES like

because she believes that

is the dad of an 8 years old. He sees himself a bit CHALLENGED when it comes to technology, because

That makes him feel

Anyway, when educating his 8 years old on the use of technology and media, he ENGAGES PRO-ACTIVELY by

because he believes that

is a 2nd grade teacher. What he/she loves more about his/her job is

The school he/she works at is trying to be more "modern" and is implementing new digital methods: which makes him/her feel CHALLENGED and addresses with DISAPPROVAL, like by

is a 2nd grade teacher. What he/she loves more about his/her job is

The school he/she works at is trying to be more "modern" and is implementing new digital methods: which he/she addresses with DISINTERESTED INDIFFERENCE, like by

maturity | ma·tu·ri·ty
noun
- the state, fact, or period of being mature by responding to the environment in an appropriate manner according to the circumstances and the culture of the society one lives in.
- The status of maturity is distinguished by the shift away from reliance on guardianship and the oversight of an adult in decision-making acts. Maturity has different definitions across legal, social, sexual, emotional, and intellectual contexts.

community | com·mu·ni·ty
noun
- a group of people living in the same place or having a particular characteristic in common.
- a feeling of fellowship with others, as a result of sharing common attitudes, interests, and goals.

awkwardness | awk·ward·ness
noun
- the quality of being awkward by causing difficulty; or being hard to deal with.
- causing or feeling embarrassment or inconvenience.
- emotional state of intense discomfort with oneself, having a socially unacceptable act

privacy | pri·va·cy
noun
- the state or condition of being free from being observed or disturbed by other people.
- the state of being free from public attention.
- the ability of an individual or group to seclude themselves or information about themselves and thereby reveal themselves selectively.

Appendices

Ideation: workshop

Idea evaluation

THE CONCEPTS

COGNITION. INVOLVEMENT. TRANSPARENCY.

TRANSPARENCY BADGE FOR HONEST SERVICES

DIGITAL IDENTITY DRIVER'S LICENSE

SMART CAMERA

CREATE AND SHARE

AVATARS

THE OPINION REMOTE

THE TRACKING ANTENNA

REPUTATION SCORES CALCULATOR

Platform diagrams

Digital Me Wire-frames (1st iteration)

Me & My World Wire-frames

Sharon C. Williams Nelson
MA Interaction Design
Umeå Institute of Design
Umeå University, 2013