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# Kitchen tools for enhancing parent-child relationship

Master Thesis by Yi Zeng - May 2014

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“The parent-child relationship is one of the longest lasting social ties human beings establish.”

-----Kira Birditt



# A c k n o w l e d g e m e n t s

I'm very thankful to these following contributors for their time, support, advices and kindness during this design research project.

Vibeke Sjøvoll  
Maryam Tallbanpira Khattak  
Frank Antonsen  
Ingunn Strand  
Kristine Haveland  
Lene Kilde  
Marita Lund Koppang  
Martin Ingvaldsen  
Panwei Zhang  
Qi Shi  
Kids from SFO,Kjeller

# Contents

Acknowledgements	4	Observation	35
<b>Abstract</b>	6	Analyse	37
<b>Introduction</b>	7	Brief	38
Background	8	Early Concet	39
Quality time	9	Concept	42
Research Question	12	Sketch	44
Structure	13	Idea	46
<b>Theory</b>	15	Mock-up1	47
Child development	16	Test1	48
Culture Difference	18	Test2	50
Mother&Father	19	Analyse	51
<b>Method</b>	20	Form	52
Observation	21	Inspiration	53
Interview	22	Mock-up2	56
Co-design	23	Test2	58
Giga map	24	Prototype	59
Context of experience	26	Test3	62
<b>Insight</b>	27	Test4	63
Observation1	28	Material	65
Observation2	29	Final Model	67
Observation3	30	Semantics	68
Interview	31	Sustainability	68
Mirror	32	Colour	69
Reflection	33	Safety	69
Cooking	34	Cookbook	70
		Discussion	71
		COE	72
		Further Development	74
		Conclution	75
		Reference	76

# A b s t r a c t

The relationship of parent and child involves the full extent of a child's development. A positive parent-child relationship has extremely important impact to the happiness and success for the child's development. It helps the child to develop empathy and compassion for others. As a design student, I want to find out how I can support this relationship through my design acknowledge. This design project aims to gain a better understanding of parent-child relationship. The goal is somehow to help building a better communication for parents and children in a daily life. By learning parent-child relationship in a psychological perspective, I will focus on doing interviews, to observe and testing with families, and observe food making situation. Finally, my project concludes in the design and development of a kitchen toolkit both for children and adults. This tool may help and motivate the family, intergenerational, to take part in the food making process in the kitchen on a regular basis. This tool should motivate and help families to be able to share valuable quality time in hectic days with interaction through cooking.

# I N T R O D U C T I O N

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# B a c k g r o u n d

The parent-child relationship consists of a combination of behaviors, feelings, and expectations that are unique to a particular parent and a particular child. A large amount of literature and theory converges on the notion that it is the relationship between the parent and child that is critical for the positive development of children. Children's physical and emotional status, as well as their social and cognitive development, greatly depends on their family dynamics. Weak relationship can cause different psychological problems like social and educational problems for children. (Maryam Talbanpira Khattak, BUP) Children's childhood emotional and physical experiences strongly affect their future adulthood. "Healthy child development has been identified as one of the key determinants of health and resiliency in adulthood." (Nicole, Jane, 2001)

Every parent and child deserves to live in a loving and happy family relationship and the relationship between parents and children is something that concerns everybody in different ways during a lifetime. From being a child yourself to perhaps having your own children and/or getting involved with other family members children or friends. It is a theme that concerns and easily engages most people and this also includes me. At the same time, the relationship between parents and children means a lot to the society as well.

Being in a positive and healthy surroundings is very important for children's well-being and development. This positive surroundings make children feel loved, appreciated and respected. A warm, safe and loving relationships between adults and children supports the positive development of the child's self-esteem and self-respect. This also affects the development of the central and fundamental aspects of personality. When the child feels comfortable and confident in its existence, it is usually open to the influence and much impression. Then it can embark on daily life's little and big tasks and challenges with interest, confidence and courage. (Aud, 2013, s41)



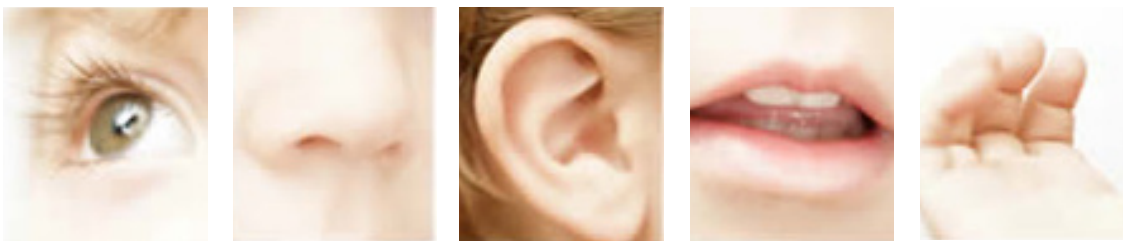
## Quality time

One has the impression that kids are very busy with organized activities in their spare time and are often driven hither and thither after school. Parents have to work long days and moments where the whole family meets and sits down together is becoming shorter as the working day is becoming more and more hectic.

Child needs a personalized touch and care to thrive and feel safe. Children crave time with parents because it makes them feel special. All children have a need for closeness and quality time which is adult's undivided attention. The most important factor for quality time is parents who are physically and mentally available to their children. Children don't want to feel rushed by a flurry of activities when they are with their parents. (Nickels, 2013)

When parents give children time, what they are doing together means not the most. The most important thing is that they are together and does something jointly. However many children today seem eager to have some time with the parents alone, just for themselves. Many troubled and attention needed children receive too little individual and undivided attention in daily life. In such cases, the child may feel that negative attention is better than no attention. Then the misunderstanding between child and parent will occur. (Aud Fossen, 2013, s.42)

"A central aspect of quality time is togetherness. Togetherness has to do with focused attention." (Gary, 2012) Such togetherness gives a room for the child and the adult can share thoughts and experiences without constant interruptions from others. People like each other because they do things together. (Cialdini, 2011) Through the high quality togetherness and communication a good child-parent relationship will be created.







“Really, what is most important to the child is having their parents’ attention.”

---Dr. Margret Nickels

# Research Question

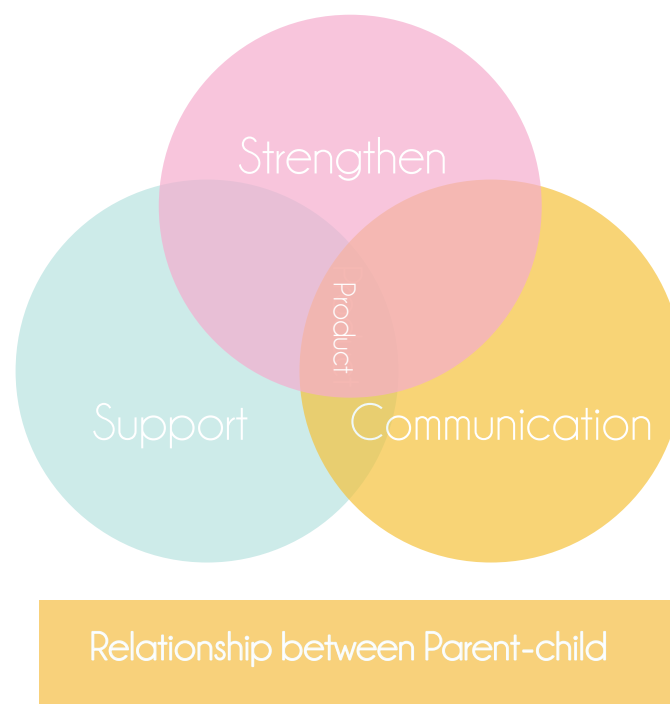
Lots of studies and reserches have been done about the parient-child relationt ship, however most of them are done in a psychological and education perspec- tive. As an design student, can I support and enhance this social interaction through designing a product? During this design project, the research question I have chosen to work on are as follows:

How can one support social interaction through design in the perspective of the parent-child relationship?

Research shows that the best parent-child relationships are characterized by lots of positive communication and interaction. Good communications build mutual respect between parents and children. It helps to talk on a regular basis about many different things, not just when there is a conflict.

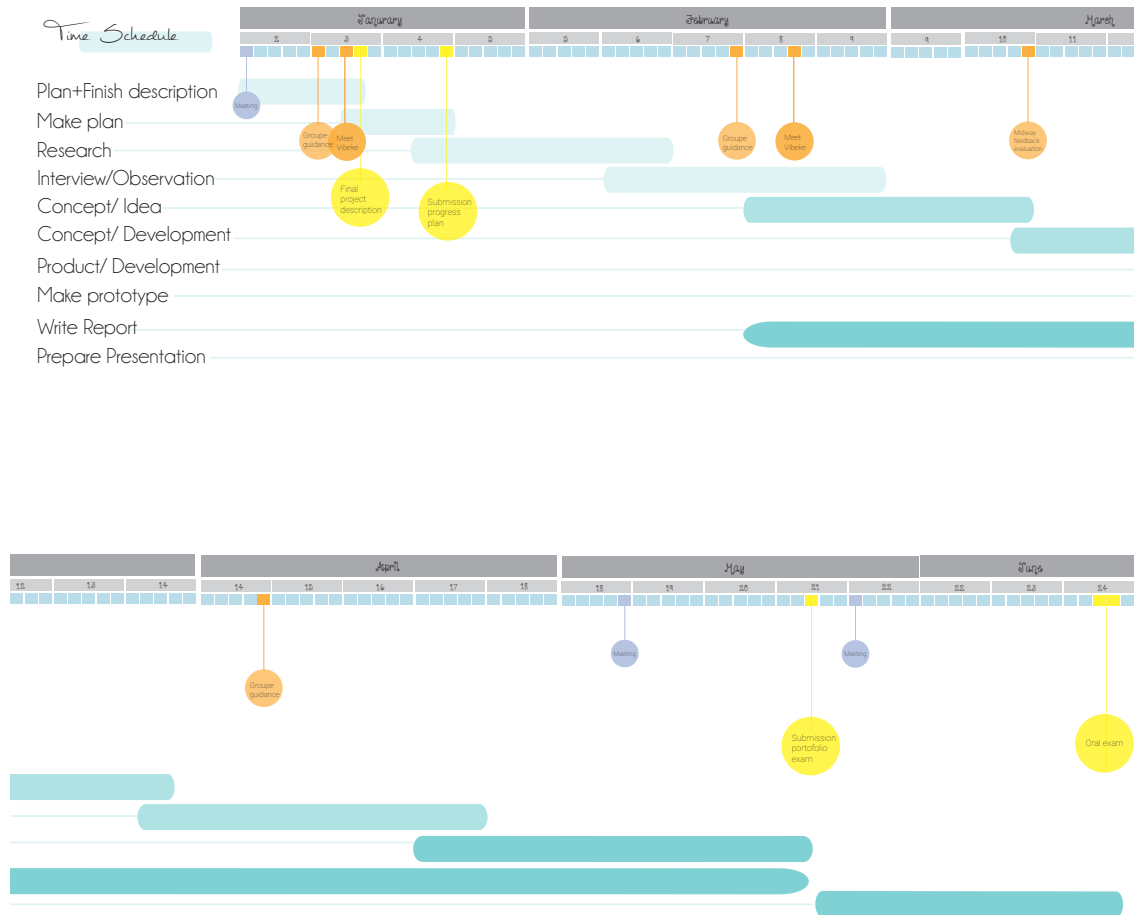
Children base their views of themselves and the world on their daily experi- ences. One of the most important experiences adults can provide for children is to talk with and listen to them. Through these daily interactions, children and adults can develop relationships that help children to learn about them- selves and the world. (Sara, 2003)

After all, for a parent-child relationship to blossom, communication is a must. So this research question is focused on the communication between parents and children.



# Structure

This project start with a open research question about the relationship between child and parent. I began to focus on the research part, most from psychological area. Interview and observation are very important aspects related to my research question. Based on the theory and findings from observations, criteria were developed and the design process started. Several concepts had been created and discussed. After testing models at school and home, final model was developed. The illustration below shows how the process actually unfolded.

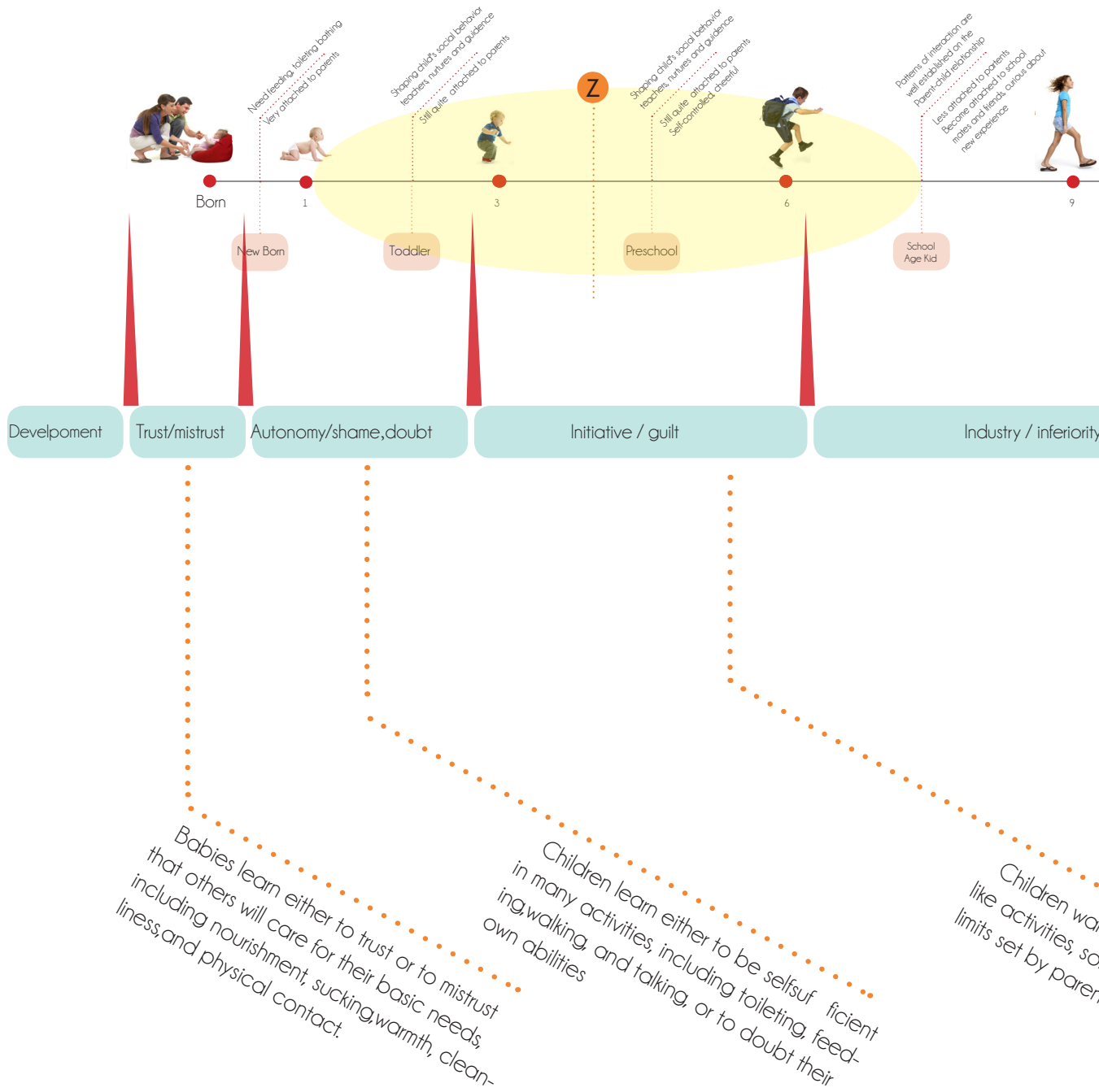




T H E O R Y

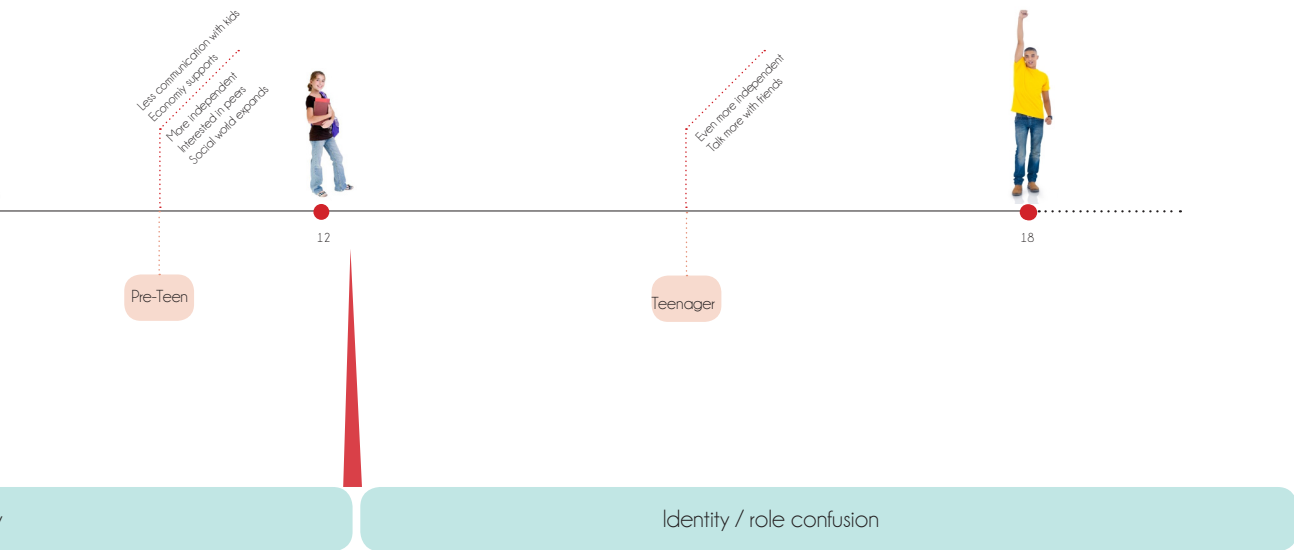
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# Child Development





In this project, I choose the user group of the child will be kids between 6-9 years old. A period where they start to become less attach to parents to less attach. They start to think logically, more independent, it's a time to established the pattern of interaction on the parent-child relationship.



Children busily learn to be competent and productive or feel inferior and unable to do anything well

Adolescents try to figure out, "Who am I?" They establish sexual, ethnic, and career identities, or are confused about what future roles to play.

Children sometimes undertake many adult-like activities, sometimes overstepping the boundaries and feeling guilty

(Berger,1988,s.37)

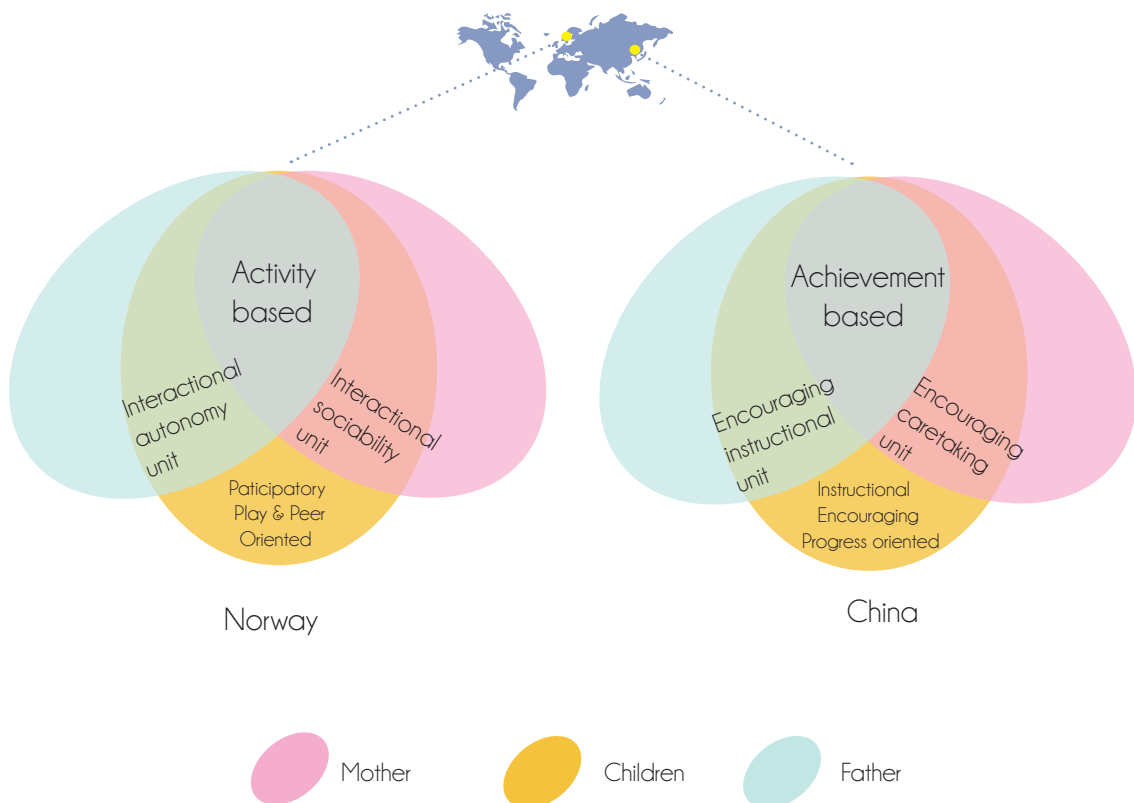
# Culture Difference

Children's socializing relations are constructed and structured by children's experiences as well as culture, traditions and social circumstances. Culture share certain ideal and norms about how family relations ought to be, who should be included as important people in a child's life, how and where these relationships should be played out. (Randi,Marit,2012, s116)

Since this design reserach is Norway based, as a Chinese, one should have a better understanding of this two different cultures and what is the difference in relate to the family relations. The article of socializing relations in the everyday lives of children finds that the learning styles and positioning of the child in everyday lives is participatory, play and peer oriented in Norway and instructional, encouraging and progress oriented in China.

About the value of doing things together, norwegian families are more related to the daily life as like leisure, sports or common chores while chinese family do things together which related to school or educational settings.

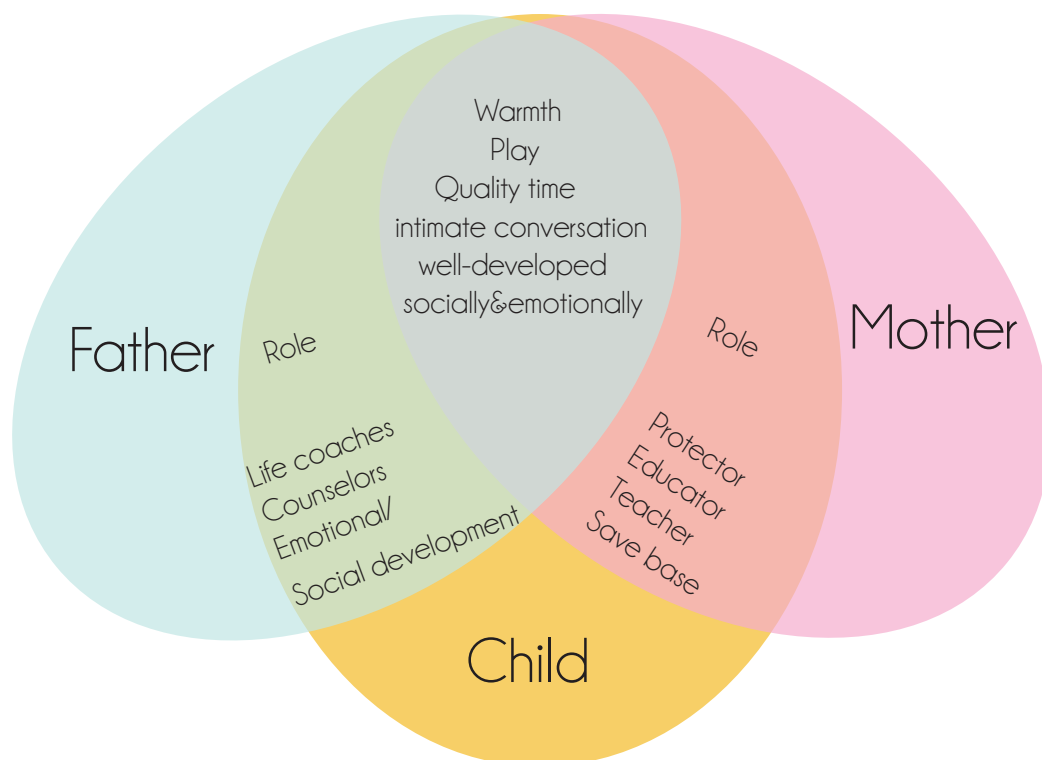
Research also shows that norwegian families put high value on time spent together in activities. This give the reseracher some entry points of the research problem. (Randi,Marit,2012, s115)



Randi,Marit,2012, s129

# Mother & Father

In one family, mother and father have different roles and responsibilities. Based on these differences, the different communication will be created. And there are variety of family structure like marriage family, single parents, stepfamilies etc. But either mother or father, there are some common roles to the kids like give warmth and quality time, play together so that kids will get well-developed socially and emotionally. I don't want to design something either just for mothers and kids which is very feminine or for fathers with kids which is very masculine. I'd like to design something which both of parents like to engage in. (Damon, Dermand)



M E T H O D

# Observation

“We know that the relationship between child and adult is important, but it is only through examination, interview and self- observation that one can form a complete picture of a situation or needs. Learning by doing. One can hear and read about how to ride, but you do not learn until you actually do it!”(Maryam,BUP)

From the perspectives of a designer doing resarch I see things with other eyes as a researcher, and often seeks for something specific. When parents talk about their children, this is from parent’s point of view. And when kids talk about their parent, this is from kid’s point of view. These are just one-way opinion. But the research is going between them two, so they may not reflect some essential problem area.

Since I have a different culture background, all my research have been done are Norway based, and I don’t have the child-parent experience, so observation is extremely useful for me to get better understanding and more findings. Through observation, I can discover children’s interest, the different way of child-parent communication, children’s psychological needs and existence problem.

For getting an even better understanding and insight in the communications and relation beetween parent and child, I chose to observe in natural contexts. One chooses participant observation at a home with a family that the researcher intervenes in the environment. This allows one to gain information one wouldn’t have otherwise had access to and behaviors remain relatively natural, thereby giving the measurements high external validity.

Naturalistic observation, also known as nonparticipant observation, has no intervention by a researcher. It is simply studying behaviors that occur naturally in natural contexts, unlike the artificial environment of a controlled laboratory setting. Importantly, in naturalistic observation, there is no attempt to manipulate variables.(Dr. Price, Dr. Oswald, 2006)

The second observation has been done in a different way which research had been nonpaticipant in the observation. Nonparticipant observation can measure what their behavior is really like. And researcher won’t interact with or influence the observation. In such way the researcher is observing real-life.

# I n t e r v i e w

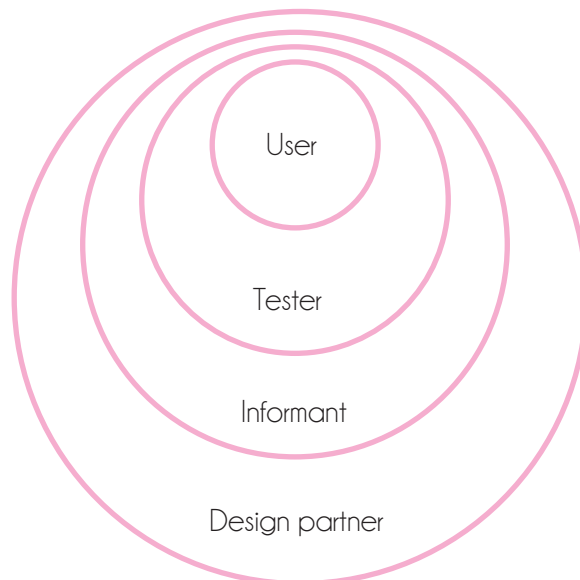
Personal interview has been used several phases as well during the research project. Both for the beginning for mapping out the problem area and later for model testing to prove the concept and get feedback. This kind of interview has more flexibility, for instance, one can skip irrelevant questions, and both respondent and oneself can ask for clarification. Specially in this project, many children have been interviewed. Questions should be simple and easy understood. If children hasn't understand, more clarification will be given. One also can control the order of the questions if that is important. During the personal interview, one can hve random discussion with respondent when one found some interesting points. You never know what ideas child will suddenly pop up. The interview provides the chance to unfold or clarify ideas in a discussion.(Pertti,1970)

# Co - design

7 to 11 years—Children in this age group are generally very expressive in sharing their ideas and dreams, and they're not biased about how the world should work. Methods involving friendship pairs work particularly well for this group. Jakob Nielsen recommends this approach specifically for children who are 6 to 8 years of age. (Nielsen, Jakob. "Children's Websites: Usability Issues in Designing for Kids." Alertbox, September 13, 2010. Retrieved March 31, 2012. )

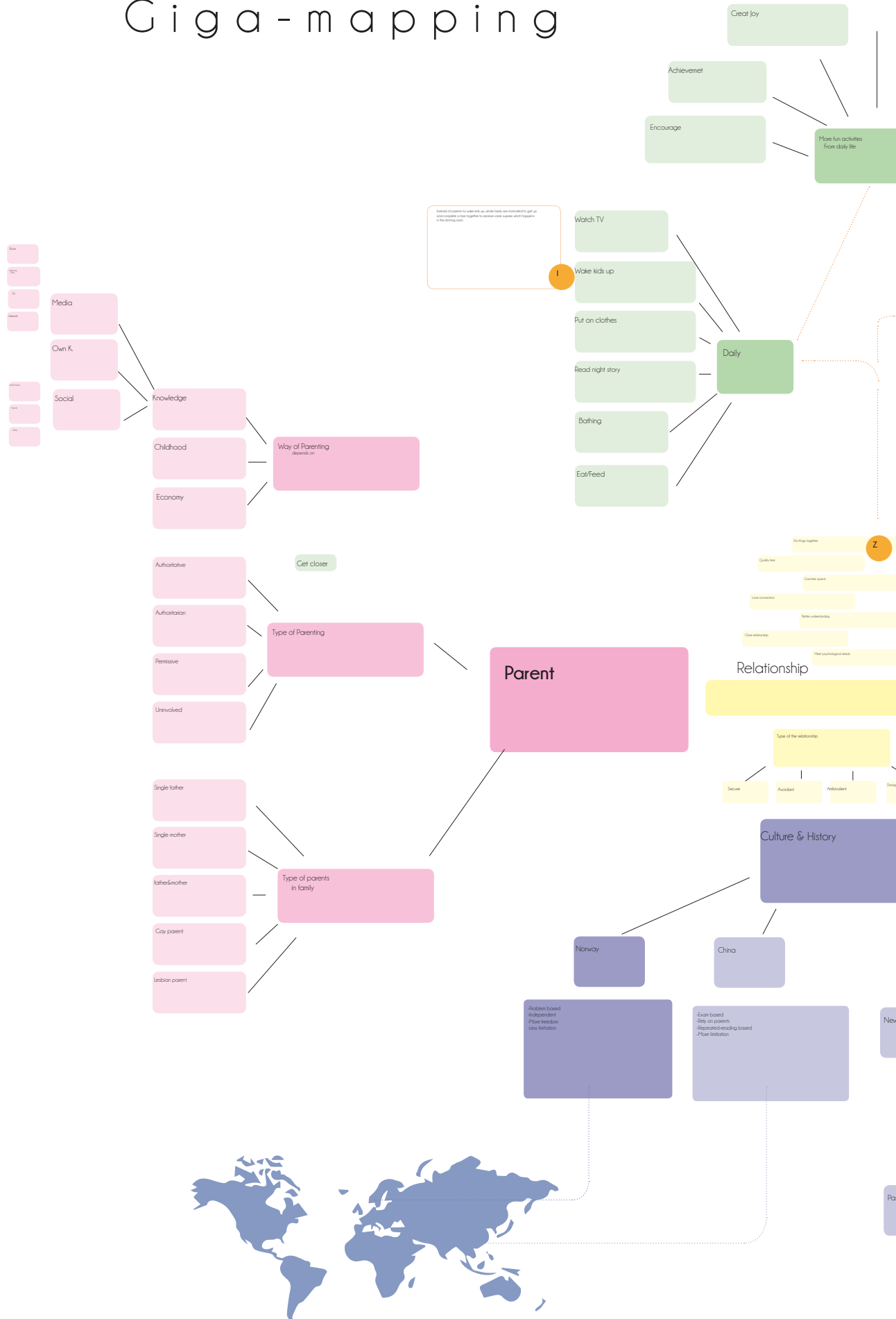
Listen carefully to what children are saying. Generally, children will come to the sessions with a high degree of enthusiasm and have the expectation that they will be heard, as well as preconceptions about how you'll use their ideas. It is important to communicate clearly that you will not use all of their ideas and that most ideas get transformed radically during the design process. Throughout the co-design process, it is also important to make sure children are feeling comfortable with the way you're asking them to share their ideas. (Catalina, 2012)

The children as...



Alison Druin's roles for children in designing new technologies

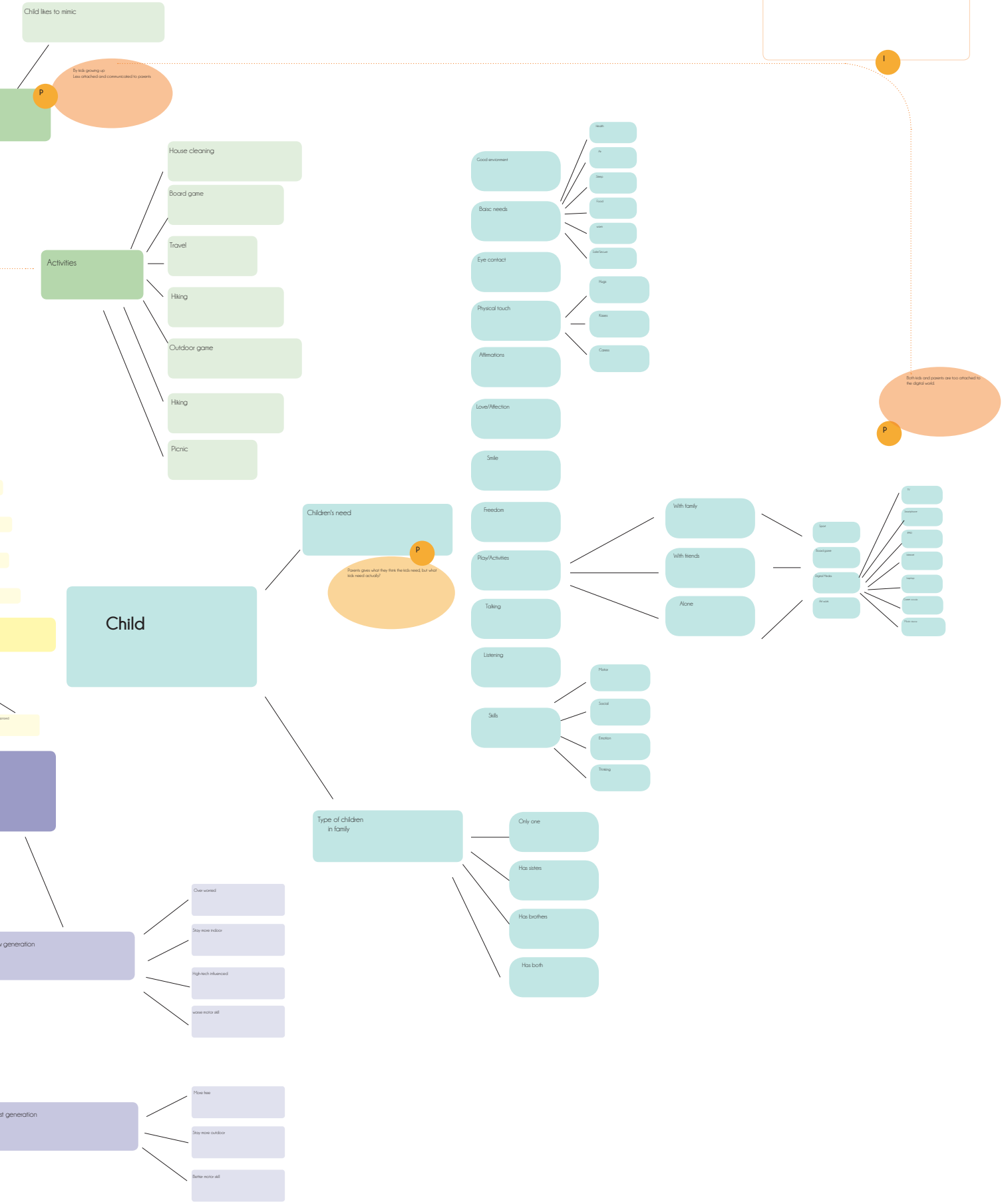
# Giga-mapping





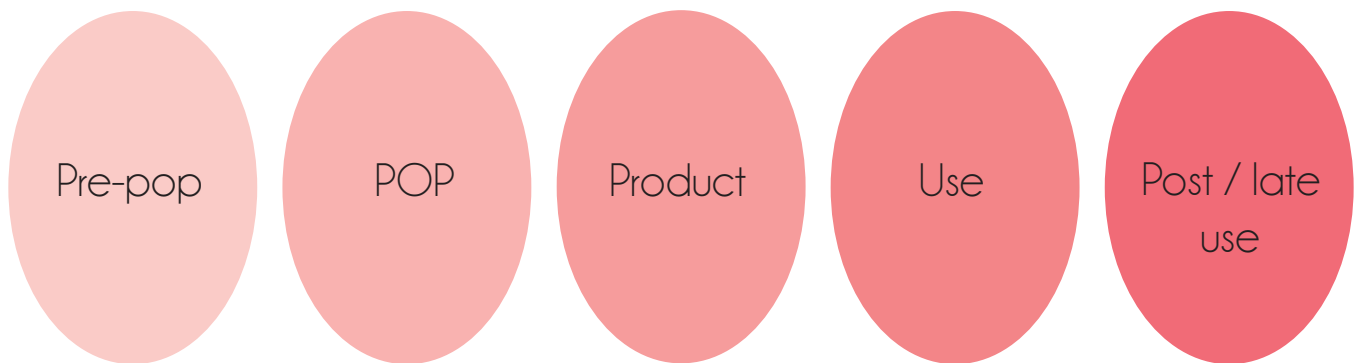
Giga mapping is a design method, which have been introduced and used for the previous project. As a preparation of master project, the GIGA map of parent-child relationship from previous project will be used for inspiration and concept development. During this project, the GIGA-mapping will continue be used as a method to visualize concepts and data from observations and interviews.

Based on digital device, bring children and parents to do task together to achieve a common goal in a daily life.



# C O E

COE, context of experience is a method that have focus on the extending the product's life by looking at different steps of ownership of a product during a purchase process. (Gulden& Mostue, 2011) By analysing the relationship between product and the user in different steps, one will get to know how to achieve the long lasting relationship.



I N S I G H T

# O b s e r v a s j o n 1

The kid was eager to help mother peel and cut carrot. The kid is showing researcher his drawing and DIY stuff and always wants researcher play together with him. The first observation was not so easy. Research get into the context and difficult to write notes and do the normal observation.

As the researcher it's a challenge because one loses objectivity. One can easily get into the situation and forget one's own role. One form opinions and change your behavior accordingly. Plus one is likely to influence what one is measuring. That is, one probably influences the data because of interacting the observation. As the researcher it's a challenge because one loses objectivity. One can easily get into the situation and forget one's own role. One form opinions and change your behavior accordingly. Plus one is likely to influence what one is measuring. That is, one probably influences the data because of interacting the

## Observation 2

“I feel guilty about my kids. It shouldn't be like this. They deserve more. We should do more activities in everyday life. But both of us don't have time and energy for that.”

I started to observe by dinnertime and kept observing until bedtime. Except during the eating time, the Ipad got the biggest focus from the two boys. The main communication happened by the dinner table while they were eating together and when mother helped the 8 year boy to do some homework. The only happy laughter I noticed, was during the dinnertime. It just happened once, and was when the boy got permission to light matches.

The conversation by the table had an interesting aspect, which I could focus on. During the whole eating period, the mother was concerned about her boys school life, however with no response from the children. The mother was nagging them about eating vegetables and the nutrition values, but the two boys seemed to pay any attention at all. Both of them are kind of picky eaters.

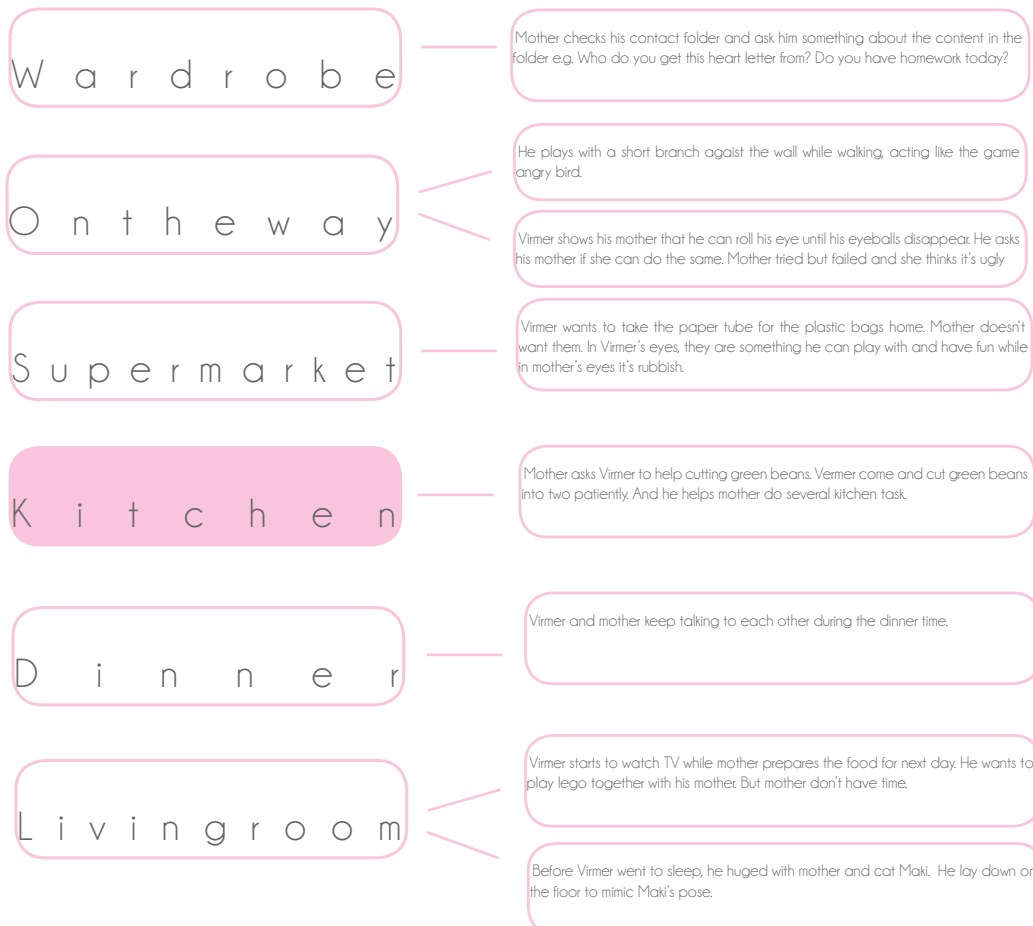
The family do communicate, but in this case without much joy. They do communicate about daily tasks for which they need to, but this may not be high quality communication, not much joy anyway. For a nonparticipant observation, one doesn't know the cause of this behaviours, nor does one knows if any observation is representative for what normally occurs. So later on, after that the boys went to bed, I interviewed the mother to get to know more about the background. She said that she actually felt sorry for the kids because they should have done more family activities together, but because of daily stress and pressure from work and home, everyday life became a routine. They didn't have time or the energy to find much interesting to do together with the kids in ordinary weekdays.

# Observation 3

In order to get more data, I followed another family that is a single mother with a 7 year boy. I watched them from school pick to bedtime. The chart shows that communication occurred in the different locations.

Preparing food and having dinner is the main communication situation. The boy used to help mother with the cleaning work and also preparing food in the kitchen. Mother gave the boy some tasks to do. The reaction when he got the tasks could change. He was positive about the food preparing and negative about cleaning and table setting. After dinner, he started to watch TV while mother was preparing food for the next day. The boy is very fond of playing Lego and he wanted to play with his mother, but she did not have enough time for that.

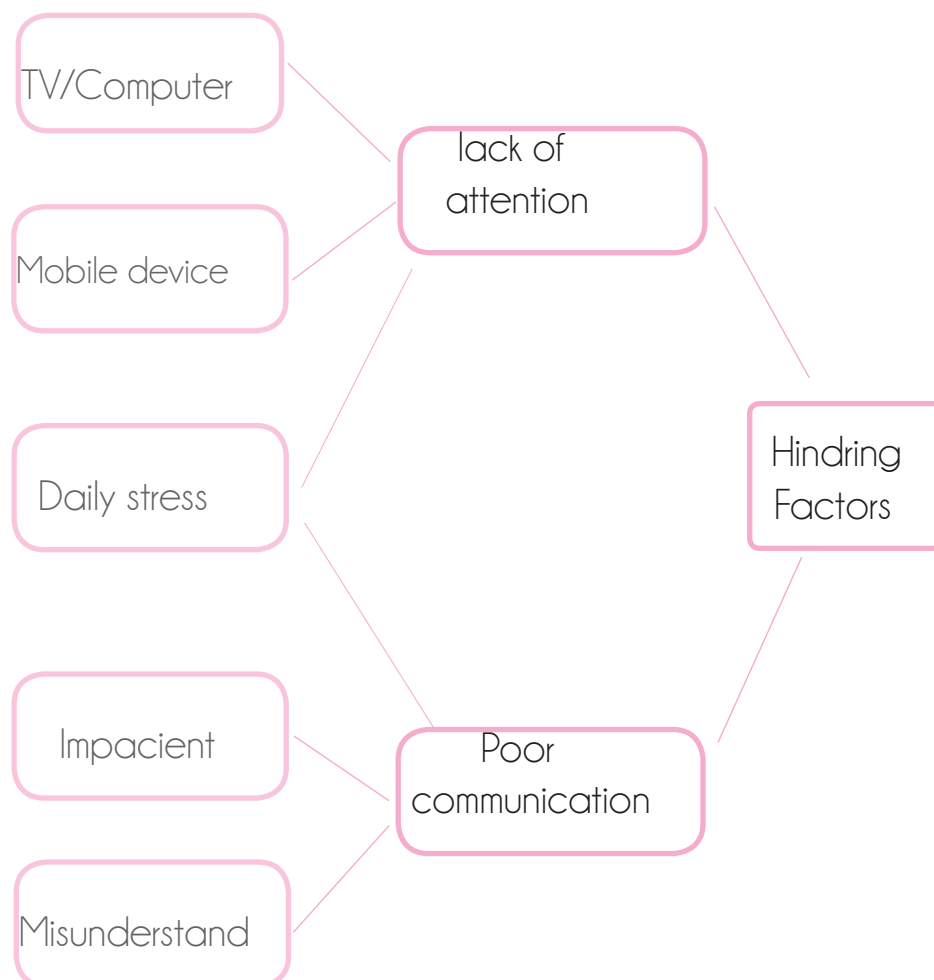
Later on, I also interviewed the mother. Since she is a single parent, she is alone with all the housework. Therefore she felt there was less possibility for quality time together with her son than she wished. But she is trying to learn and motivate her son to participate in the daily housework. I recognized that the mother and son had a good relationship.



# Interview

Interviewer: Maryam Tallbanpira Khattak  
Works at BUP, Norway  
(Child and adolescent psychiatric polyclinic)

Maryam mostly work with children, but since children are small, she also works a lot with parents and to supervise them. She is doing play observation, kindergarten observation, takes development tests, and play therapy with children. Much of her work is to help parents understand their children better, especially by strengthening the connection between parents and children. Through interview, one got the point of the existent problem. The chart below shows the main factors which hinder the development of a good parent-child relationship.



# M i r r o r

As an observer, I followed the daily process of a family from after school until the kids went to bed. I did this three times. Something interesting happened every time the kids went to the bath room for washing, brushing teeth etc. I noticed that when the children stood in front of the mirror, this was a happy moment for them, every time. They looked at the mirror and the mirror looked back with the reflections of them.

The mirror helped creating a moment of the joy. When the mother with her son stood in front of the mirror, they naturally made funny faces, and the mirror doubled the smiles and reflected happy faces back to them. When a father with his kid stood in front of the mirror brushing teeth, the kid's laughter made the father laugh as well. The mirror was the instrument that led to those short moments of happiness.

Why did the mirror create these moments of joy? The natural feature of the mirror seems to attract attention in a positive way, especially when kids are involved. As a media for eye contact, the mirror creates a vision communication, and it may also create a sense of safety.

By using the method of GIGA mapping, I mapped out different situations related to the mirror. Its reflection properties can be experienced in series of other contexts also, as windows, water surfaces etc.





# Reflection

Based my observations about situations in front of the mirrors, I saw that reflection is a key word. What is reflection? By mapping out different situations of reflections, I found that mimicry is a common reflection, where kids reflect what they have seen from parents. Children love to mimic. A child learns by mimicry. Most children, unless they are severely aerated, are very good mimics. And they look at the adults and they try to use the adult as a pattern for their own actions. This is natural.

The figure shows that there are many situations in which children like to mimic, like playing, eating, cleaning, cooking etc. Observations I did showed that most kids like to be in the kitchen area with adults. They are willing both willing to help and also use the same kitchen tools as their parents use. With the help of some people from BUP, it proves that kids do like to work in the kitchen. And combine with the 3 food package, one finds that food is human's basic-needs and making food is routine based and happens in every body's everyday life.

My focus starts at the kitchen situation. Making food is a daily task for adults, and kids are interested in the kitchen task. Is there something that I can design to motivate and assist such interaction in the kitchen? What if the kids mimic what their parents do in the kitchen, the way they work, how they use kitchen utensils and what they make? Will parents give their children an opportunity to be part of a good food making process?



# C o o k i n g

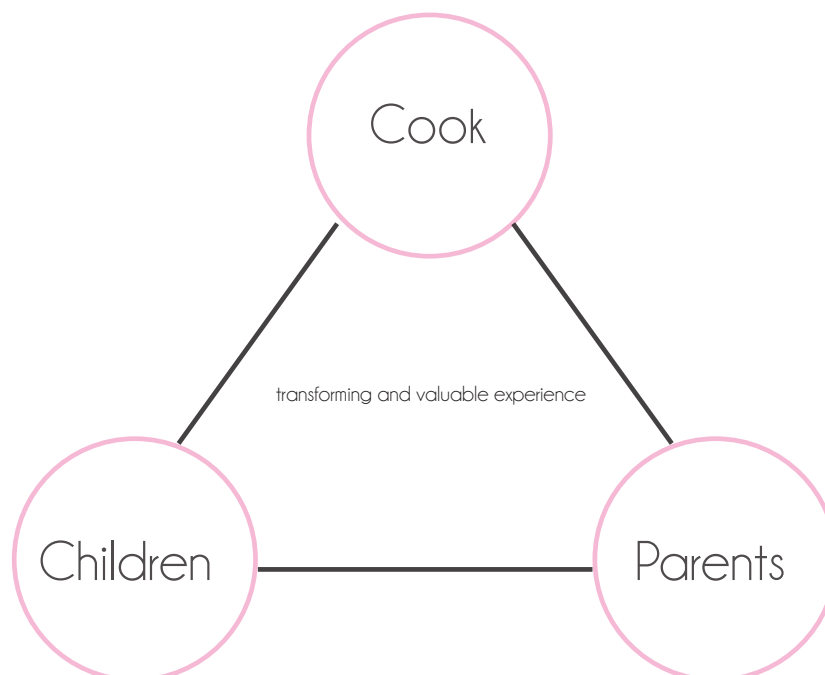
As one strat to focus on the kitchen, one also start to research and analyse the benifits about children join the cooking process.

The food stimulate our senses which create a long lasting memories of time spent in the kitchen. Good aroma from the kitchen makes people happy and thus spread joy. When people are relaxed and happy, it gives good conditions to develop ties between parents and children. In such a positive atmosphere, in a kitchen with limited space, there are good opportunities to listen and share. And the sense of accomplishment after completing a task will also enhance the the family relationship.

“The more a child has a hand in preparing their food, the more likely they will be to try it. It gives them a sense of ownership.”( Graham)

From observation 2, both kids are kind of picky eaters who don't like vegetables. Although their mother was keep telling them about the nutrition and benifits of the vegetables, they don't listen to her. Getting kids cooking provides a great chance to talk about the origins of food, nutrition and food production. The food can stimulate a child to be more curious, adventurous and try more foods. (Ana,2013) And they will learn that melk are not from supermaket.

Great moments in the kitchen allows for positive and good communication.



# Observation 4

To find out more about the situation in a kitchen where both adults and children were participating in the work, such a situation was observed. The two children who attended were also interviewed after the cooking process.

The children: Peder 8 years old

Kamilla, 11 years old.

Dinner course to be made was fish and chips.

I noticed that the kids more or less attended and were interested in the whole process. They had to be asked to be involved and participate, but when they first started, the interest was not an issue. It was probably a factor that the situation with the captures etc, may not be quite natural for them, and thus follow the greater interest and participation, - and smiles?

It was quite a big difference in how the kitchen equipment would be used and seriousness in relation to work,- as expected. The oldest girl was very serious and would constantly do things right and was eager to choose and use the right tools. Mostly she would only use the tools properly and she would not play with it. The boy, however, he found many silly ways to play with the equipment. He hammered and banged on the carrots, he tried gladly utensils that were not suitable for his use, just for trying it! Much of what he did was a breeze, but he enjoyed himself! Only in one case did the girl the same, inspired by her younger brother.

I put a fair amount of tools on a table, but only the boy picked something here and there in a few cases, mostly to mess around with. It should be said that also the boy wanted a finished result, but because of play and fun, it took a bit longer with him. Both children were delighted with the result and they set the table and looked forward to sit down and eat.

At one point I started playing music, but was a little surprised that it had no particular effect either positive or negative for the mood and work. I may have noticed that the voices became a bit louder and communication at times could be a little more impatient between the children when the music was on.

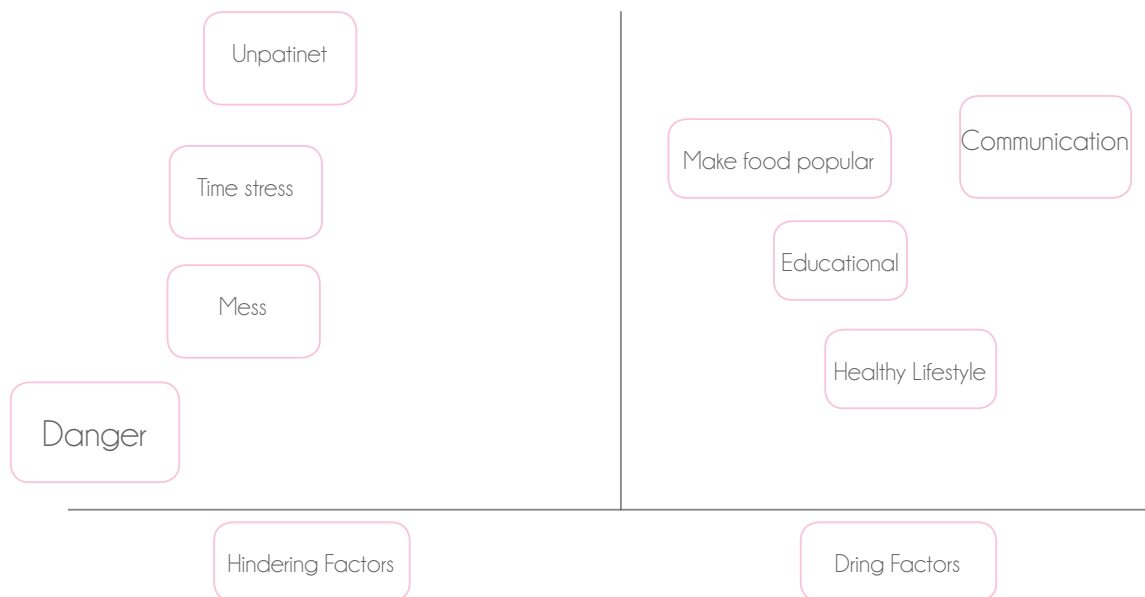
The choice of music will most likely be an important factor. It was perhaps a bad sign that I joined and liked the music more than the kids did? If the effect of the music should be measured again, it probably should be an option for the kids to choose the music themselves?

An interesting observation was how the mood can be transmitted between "working" children. When the boy suddenly played air guitar on some kitchen utensils, laughing and dancing to, it took only fractions of a second before his sister did the same thing! They danced and amused themselves in exactly the same manner, in line!

Children's ability to concentrate longer periods of time is limited, and that was clearly apparent in this case. The youngest boy was playing a good chunk of the time, perhaps up to 50%, while the slightly older girl only played a few times, and then usually as a result of inspiration from her younger brother.

# A n a l y s e

A few decades ago, it was common for kids to participate in the cooking process, where all shared family recipes and ingredients. But now it is not so common any more. Most often is the situation such that the food is cooked by one of the parents without any child participating. Only about one fifth of the children in my target group participates in the food making process at home. (Time use survey in 2010, SSB). So what is the hindering factors make it uncommon to get kids cooking? Through the interview and observation, the fig below shows some main reason.



# B r i e f

Create a product/experience to enhance the communication between parents and children

## Must

Users: 6-9 years old kid and their parents

Target group: Parents who want to involve children in the kitchen

Support family relationship

Enhance the communication through visual contact and interaction

## Should

Create emotional attachment and curiosity

Consider of children safety issue

Create an experience which parents and children can do together

Both parents and children are seen and heard

## Can

Applied both in the kindergarten and home situation

Based on app / without

multi-functional interactive product

therapy approach

A playful kit

# Early Concept

These concepts had been done in the early process. They have both positive and negative aspects in relation to the research question.

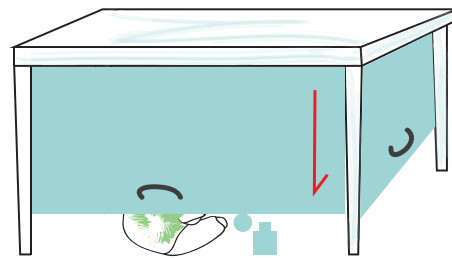
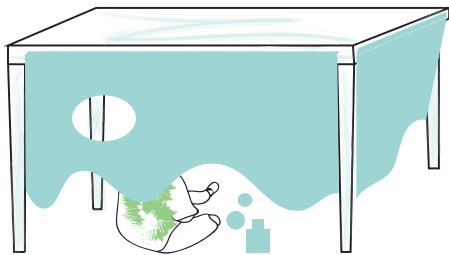
The thing I want to design is not a play or a toy that they only have the chance to create a space for communication to improve the child-parent relationship in a situation when they want to play with the product. But this design is engaged into daily life, routine based and has a strong bond with everyday life. So the communication will happen naturally in a process of daily routine, meanwhile this lays a foundation for a long-term good relationship.

The early concepts are mostly focused on the function and what the result can bring to improve the relationship. Concept 1 is too finished. Children like to create their own tent. Concept 2 is too little interaction. Concept 4 belongs to another category.

## Concept 1

Inspired by the daily objects (familiar with) from home, turn them to be a play--- bond to connect children and parents.

Multifunctional table  
---a table turn to be a tent



## Concept 2

A family lamp which can set together or separate. Children can bring the lamp to the playground.



## Concept 3

### Matpakke

Drawing with food



Packed lunch--- a bond of parent-child emotional communication

Support and strengthen the parent-child communication by create a new experience of matpakke.

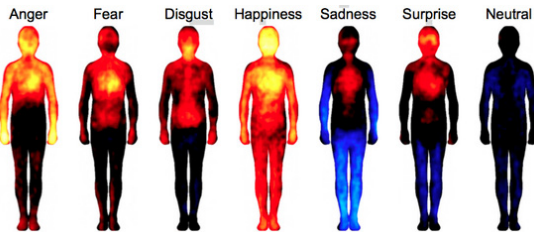
- Communication through matpakke
- Child and parent make matpakke together
- Child learn about health and nutrient content
- Emotional attached
- Make the process joyful





## Concept 4

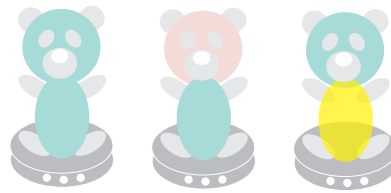
A Interactional teddy bear which can tells the mood of child/ child can express own feeling through the bear



subjects felt sensations increased (warm colors) or decreased (cool colors) for a given emotion

PLAY SITUATION

- body language
- light/sound effect
- movement
- colour
- 



## Concept 5

### Garderobe redesign

A better garderobe  
Give a space for parents and children  
(Be together, give attention and stress free)



# C o n c e p t

After I've chosen kitchen area as my new focus, I started to think about the possibilities in this area. How to create a product/atmosphere/situation to facilitate the better communication/relationship between children and parents?

Concept 1: Food cooking reward system children

A reward system for cooking to encourage children to cook, discuss and compete with friends for weekly and monthly super chef.

Concept 2: Kitchen utensils redesign

Redesign kitchen tools with special features to involve children to kitchen and motive them to work together with parents.

Concept 3: Playful & interactive kitchen

Create a joyful kitchen atmosphere. Making kitchen not only for daily cook but also a fun place to stay and experience by changing the color, sound, light or picture of the surroundings.

Concept 4: APP Let's cook together

An APP which can help parents have ideas about how to cook together with own kids.

Concept 5: Kitchen bench for both adult and kid

A flexible kitchen workbench adapts different anatomies of family members.

Everyone needs to eat. Although not everyone cooks at home, kitchen utensils are daily objects which people, both adult and kid are very familiar with. To involving and encouraging children come to kitchen and cook together with parents, the kitchen utensils are tools which they need to use anyway. While there are a lot different variety of kitchen tools in the market, there must be some new ideas about interactions among parents, children and kitchen utensils that can improve the communication. Even though kids don't cook so much or don't cook at all, but they have the impression of the utensils more or less. The concept what I can redesign utensils based on the original ones to attract kids of their interests and curiosities has been chosen for the further work.

Idea1: Children style utensils design

Idea2: Thermochromic utensils  
Change colors of the handles

Idea3: Utensils with sound/light effecton  
Making sound or light according to the movement, like cutting, mixing etc.

Idea4: DIY kitchen tools  
The handle and the head of the tool will be seperate. They will get the same tool head. And a group of different handles. So parents and children can choose the handle they like to put on. You give the option to the children. The world is not limited.

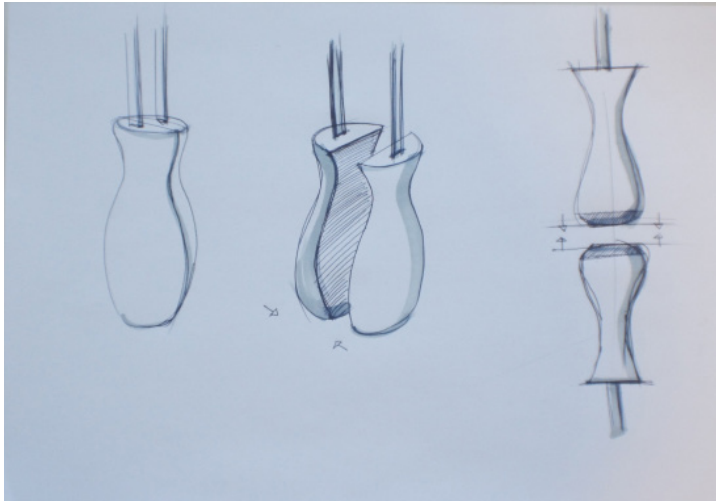
Idea 5: Mimicry Utensils  
The same appearance  
Different size

Idea 6: "Together" compact utensils  
Two utensils can set together and easily apart...

Idea 7: Modeling/shaping handle  
Kids are very creative and like to play and knead soft material like plasticine. The observation one did earlier shows that kids have different ways of gripping tools. The idea is the handle of the kitchen tools are made of soft material which kids can shape and form the handle by themselves.

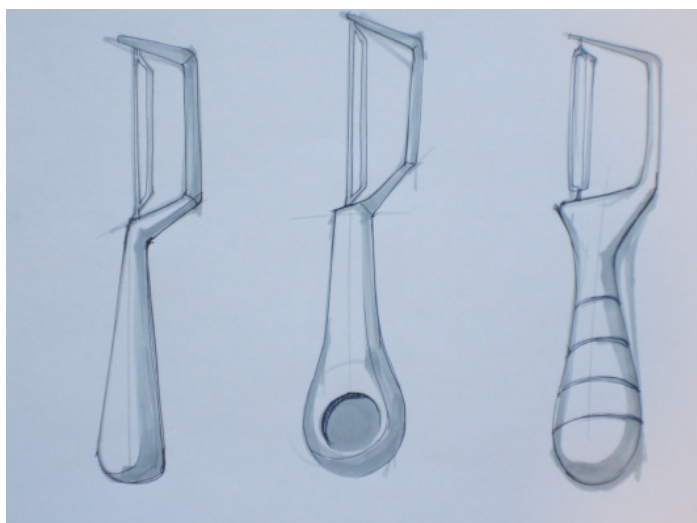
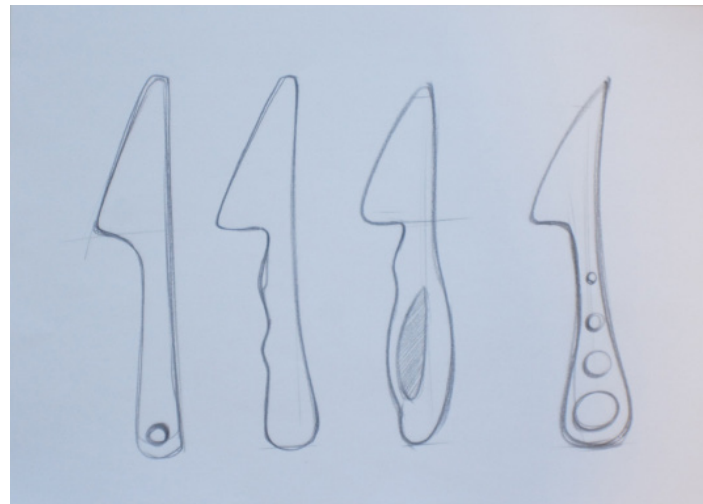
# S k e t c h

Sketch for different koncept

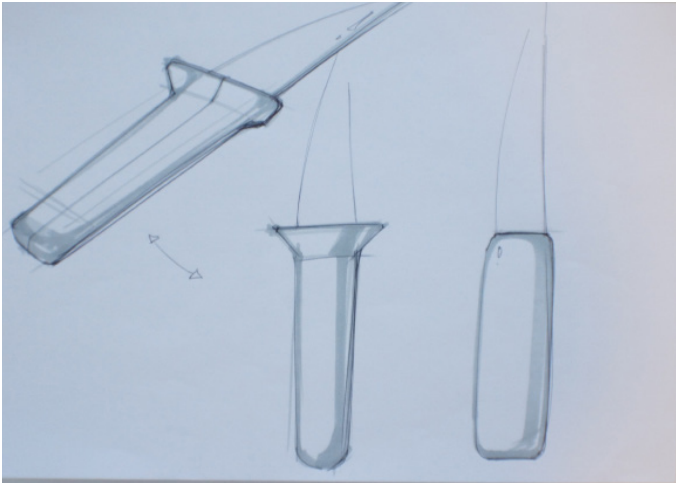


Together by magnet

Child style

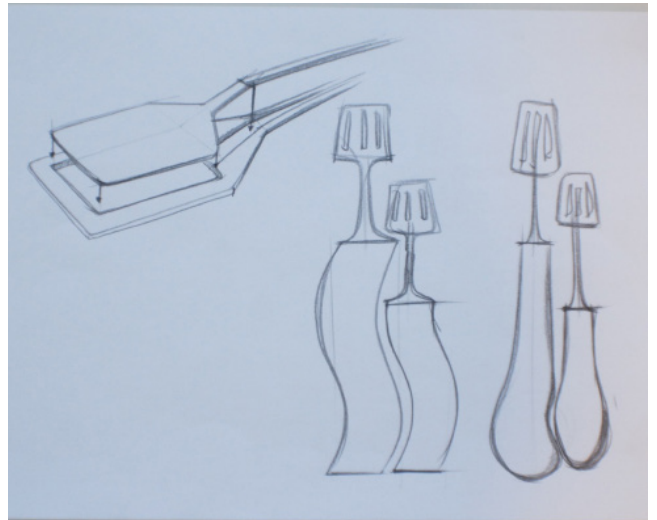


DIY utensils, can change handle

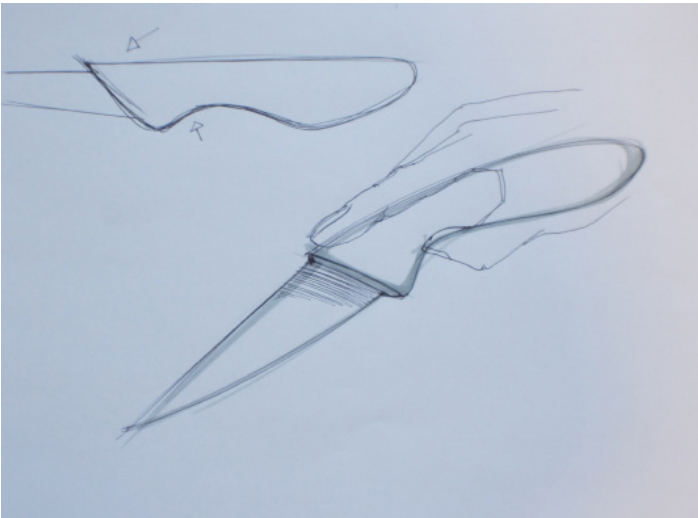


Utensils with sound/light effect

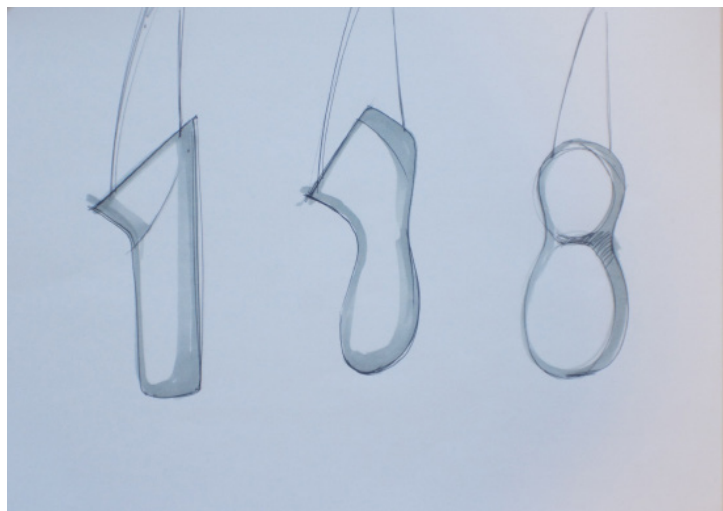
Together by form language



Flexibel idea

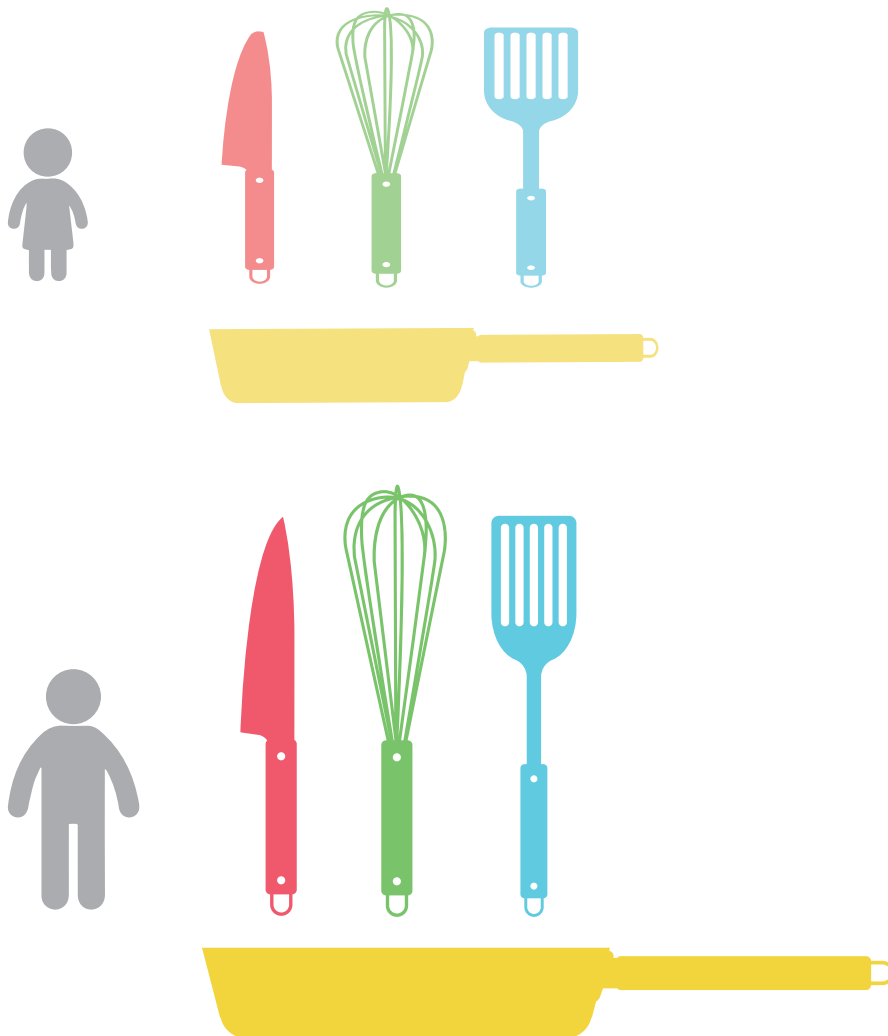


Modeling/shaping handle



# I d e a

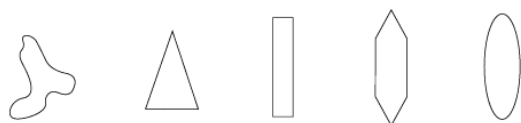
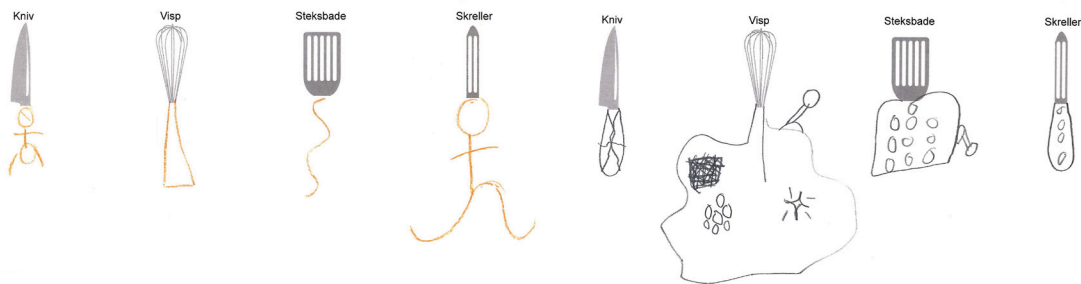
Because the idea is encouraging kids to kitchen and make food together with parents, I want the idea of togetherness reflect on the design of kitchen utensils. In the beginning I was searching for the relation of utensils between adult's and children's for design the family kitchen tool kit to show the thought about togetherness.



# M o c k - u p 1

After keeping think different 'togetherness' ideas of the utensils, those ideas with connect function(fig.) Why have to be joined together, why not just keep simple, return to original style, one and one, but relook at it and focus about the content. Since the idea has been chosen that to make the family kitchen tool set for two sizes, one started to focus on the form. The idea back is to encourage children to cook food, so the child is the main user group. I don't design toy but real tool for cooking so ergonomics is something I have to consider all the way along the design process. If one design a tool which can't use or not comfortable to grip, the design won't create a good experience anyway, the communication between children and parents won't work well. But still, the whole project is focusing on the concepet about the child-parent relationship, not on the tool grip design. And because of the time limitation, I don't have time to go deeper of the ergonomic study. So the ergomomics part I've done based on reading reference and and testing with mock-up. I chose to work with green foams because it's easy, quick and flexibel to shape the form i want to create.

Co design with kids. because they are very expressive in sharing their ideas and dreams, and they're not biased about how the world should work. Since they are the user, one should listen and watch theirs idea in their own world. So they are not only the user, but also the design partner. I went to SFO,kjeller to gave kids the task to draw the handle for me in order to get some inspiration. At the same time I started to make mock-ups based on the basic form. Children's drawing inspired me to think out of the box, so different variety of handle mock-ups have been created.



# T e s t 1

## Test the fist mock up

In this project, children are not only the user and design partner, but also the informant and tester. To gain insight into the ergonomic needs and test the idea through usage scenarios, I went back to SFO kjeller to test those handles with kids. All the handles are on the table. 9 Children haven been asked to pick up(fig), try to grip them(fig) and choose 3 best of them which they like best, both from the esthetics aspect and good to grip.





Wow! Are they candies?

----Linea

9 children have been asked to do the test. When they saw them at first time, they were attracted by and curious about those different handles. While testing, I need to inform them that image they are handles to a kitchen tool. Some kids picked up and tried all of them, some just picked up what they like.



# T e s t 2

Test again in a context

7 handles have been most liked from the first test.

During the test process, a problem has been found that it is difficult for them to imagine the handle is a kitchen utensils when they were trying different handles.

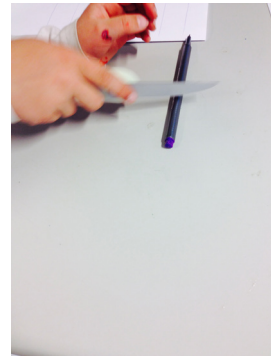
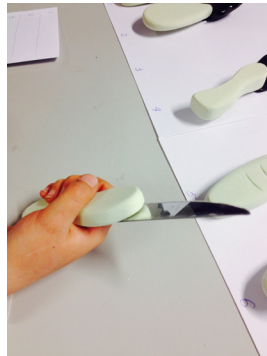
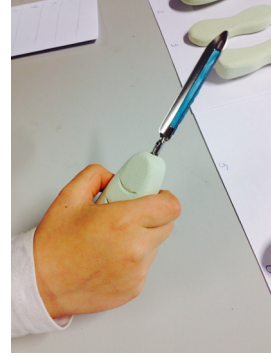
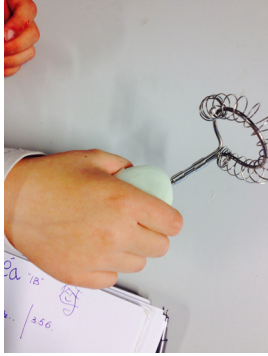
A context is needed. So these 7 handles have been set together with mini size head of kitchen tool (kitchen play from IKEA) to give kids a better context. (fig)

The fig shows that children like nature and organic form as a handle.



I tested again with the same kids. Ask them to pick up the 3 best for the 7 handles. When these handles were set in a context, the way how kids grip them have been changed in relation to the different function of the head that have been provided and they have a better understanding about these handles. While testing, questions have been asked to kids. In the beginning, handle number 6 has been most picked up. The reason back was they used the whisk most at home, they are most familiar with that. So the tested restarted again to focus on the handle. The result was num 3, 4 and 5 that get the 6 votes of each, both from the aesthetics and grip aspects.

# A n a l y s e



## Analyse

This is interesting that they use very different ways to grip them. The figures show that there are so many small differences when they hold the handle. So if the parent has the same form but in a bigger size, a child can learn from an adult how to grip properly through mimicking. The figures show that the way they grip it is different from how they grip it without an object and use it in an action with an object. This reminds me that more context should be provided for a real use situation.

# F o r m

## Form development

I started to develop the form of handles based on the top 3 handles that has been chosen form kids. Since they like organic form, so do I, I continued to develop organic form.




# I n s p i r a t i o n

Working with organic form, a good way for inspiration is to take a look at your surroundings, the nature world. Kids love nature, there are a lot attractions hold their attention. In Norway, family used to go to nature as an joyful activities to pick up mushrooms. The variety beautiful forms and shapes of mushroom inspired me. And a group of mushrooms gives me the feeling of home and family.







“Children have a natural affinity towards nature. Dirt, water, plants, and small animals attract and hold children’s attention for hours, days, even a lifetime.”

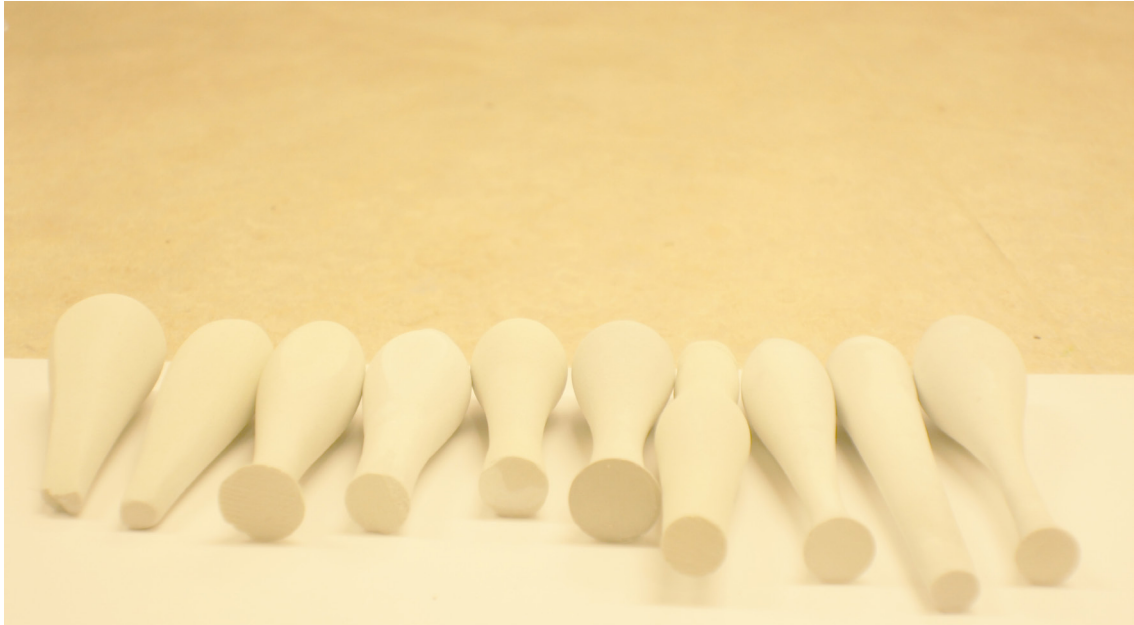
----Robin C. Moore and Herb H Wong

# M o c k - u p 2

Make new mock-up.







At the sametime, one shouldn't forget about the pratical part. When I was a kid, rope skipping was one of my favourite activities. The handle of the rope skiping reminds me the hands stop function. So I can easily grip the handle steady without slipping past to the rope. This is good design thinking which I can refect to this utensils concept.



# T e s t 3



This “ is very comfortable to grip.  
---Marisa

Test the new form at SFO Kjeller to get the feedback of new form and to see which size and form adapt the anatomies of children best. The test shows that most kids like the form and think this is very comfortable to grip. During the testing, something interesting occurred. I brought two adult size handles to them for see the size difference for kids when they hold small and big. There are two girls like to hold the adult size better. When I asked them was it because they like big size object or it is better to grip. The answers from both girls were just they like the bigger form without specific reason. This made me think a problem, is this enough for testing a kitchen utensils by just grip them but without use them in a real food making situation, will the result be the same?

# Prototype



In order to test in a real cook making situation, I decided to make the tools into a real functional prototype which can use in kitchen. The research question is about strengthening relationship between parent and child, interview both parent and children are not enough. So I decided to make tests with two families. Give them a cooking task and kitchen tools to see how it works in a context, a cooking situation and how they interact with each other and the kitchen tools.

The handle of the prototype is made of birch and the head were from IKEA. On the top of the handle has stopped and support function, which protect kid's hand not close to the head of food treating part. Because of many kids like to hold things in the front of the handle. At the same time, it gives a nature finger support while using.

Two families have been asked to test with the utensils.



Jeg hermer  
etter deg!



# T e s t 4

Mom: Ina

Daughter: Natalie 6 1/2 years old

Task: Pancakes

Result

Both of mom and daughter have used all the tool which have been provided. And they are satisfied with the tools, both from the esthetics and function aspects. The whole food cooking process was joyful. By using the same kind kitchen tools, daughter followed her mother, learning by doing. At the same time, cooperation has been created. Daughter feels she is a part of the task.

Findings

From being passive to being proactive

In the beginning mom pick up a spoon for daughter to take out the flour. Later when they mix the powder, since the tools(whisp) are provided, daughter picked up by herself.

From being asked to do the task

When daughter has her own kitchen tools, she was more proactively to take the task with tools. By looking at which tool mother has been using, daughter can pick up the right tool. Meanwhile it teaches child kitchen task recognition via cooking process.



# T e s t 5

Mom: Ingunn  
Son: Williams 6 years old  
Task: Chinken fillet with vegetables



## Result

Both of mom and son have used all the tool that have been provided. And satisfied with the prototype. Mom was quite stressful during hole test because his son is not use to cook. The boy is very curious and interested in the utensils. And want to try different ones. A lot positive communications was created.

## Findings

When I asked him about the material, he said he like this birch handle very good. When I asked him if the handle was too big for him, he was a little bit angry, he said:

“No, it’s not big for me at all! I am not baby!”

Compare with the two different experiments, the kid in experiment 1 like cooking and used to help mother, yet the kid in the experiment 2 seldom help to work in the kitchen. Both parents and children’s reaction is very differnt.

The daughter is very enjoying using the tool to work together with her mother while the son is mostly interesting with the tool shape and different task which his mother taught to him. Whole food making situaiton seems new and interesting for him.

The mother from experiment 1 is cooperate with her daughter while the mother form experment 2 is more like a teacher to teach him how to use the tools and how to cook.

Both families are satisfied with the tools and would like to use it for the next time. And the boy said he likes to work in the kitchen and think it’s so fun.





# 3 D - P r i n t

Final model was made by 3D print. Since it is difficult to make the head of the utensils at school workshop, 3D print is a better solution. During the design process, the main focus was about the handle. So the head part was just focused on the aesthetics part, not the functional part.

## M a t e r i a l P o s s i b i l i t i e s

Silicone

Plastic+Metal

Nylon + transparent nylon



# Final model 1:2

1 to 2 is a kitchen toolkit for both children and adults. Each tool is made in two sizes to adapt the different anatomies of people. This invites everybody to take part of the food making and is engaging the family with interaction through making food.

Make food together, at the same time, with the same tool, sharing and helping, following and learning. And enjoying!

Bonding: cooking together is a great way to spend time communicating. This will help foster trust and closeness that will be so important as they grow older and need to share about pressure in school, issues with peers and life in general. Children will have their own kitchen tool set as the same as adults, just smaller size and shape.

The product as a medium to connect children and parents together. Use the same tools and make food together. For the new beginners, parents can show the kids how to use those tools by doing the task together. In this way, children can reflect from adult how to grip tools and do the food making task.

For other kids who are used to help in the kitchen. They get more motivation by owning their own kitchen tool set. They are proud of themselves and have a sense of fulfillment. In this way it create a long-term food making experience. They act like adult, do the serious job and can see the result in a short time. Then it gives both kids and parents a good chance to communicate in the kitchen, and it's learning and sharing experience. It even makes them more interested in eating. "The more a child has a hand in preparing their food, the more likely they will be to try it. It gives them a sense of ownership."—Graham And the parent-child relationship will be improved by stimulating 5 senses in the kitchen. It also expand their sensory experiences - touch, sight, smell, sound and ultimately taste.

It's fun! Yes, there will be some exasperation at times, but there are going to be laughs and beaming smiles all round, and lovely memories to cherish.

# S e m a n t i c s

This product has a form language which is not associated with a toy (kitchen play). Parent's part and children's part will be the same form language but in two different sizes to adapt the different anatomies of parents and children.

The part that treats with the food will be the same. In the beginning the idea was that both handle and the head will be two different sizes. But in an actual situation, food won't be small for children. They will treat the same food as adult. This details also gives children a sense about they are doing serious work, not just play.



# S u s t a i n a b i l i t y

Sustainable value creation means finding sustainable solutions that take the fullest account of economic, cultural and ecological concerns in their development, implementation and realization. (Master program of product design of product design, HiOA)

Food, cooking plays a central role in every culture and everyday life, especially important for a family's culture. It's good to repeating these traditions to give kids a sense of belonging that follows them into adulthood. And teach children about the knowledge of food and cooking is teaching them about part of the culture. So generations can continue pass down knowledge of cooking and recipes

Cooking together will also allow your child and you have the quality time together, build up the positive relationship.

# C o l o u r

The colour I chose for the final model was very bright and soft. The idea is bright colour brings a happy mood for both parents and children while they are using them for cooking. The reason I chose soft colour and try to avoid deep warm or cold colour is I wish user could focus on the food, not strongly disturbed by the colour from utensils. The colour of adult tool is deeper than children's. In this way, I want to make the kitchen tools more lively and personal. From the colour perspective, children's set gives kid a sense of belonging but still independent. From the previous tests, one found that the colour kids like or dislike is so different. One cannot make a right colour that suits everyone. But one can provides options. Each pair of tool will have different colours for user to choose.



# S a f e t y

This project has a security issue. The kitchen can be a source of great innovation, creativity and collaboration, but it is also a corner with hot plates, sharp knives etc. During my research, danger issue is most common reasons why parents don't invite children to the kitchen. Children shouldn't work alone in the kitchen. Adult vigilance and guidance is an important part of this collaboration, to ensure safety. This is also an important part of the communication to build the trust for each other. At the same time, in the kitchen toolkit, a pair of 2 strands of stainless-steel gloves will be provided as accessorize for children to protect theirs hands and fingers from knives and sharp edges. The handle of the toolkit also will protect children's fingers get close to the blade or warm pan.

# Cookbook



A cook book will be provided together with kitchen toolkit. This cookbook is made for both parent and child with normal text and illustrations, which is easier and more attractive for child to read. So parent and child can read together of the receipt.

Children express themselves through food making. Use those utensils as a medium to express ideas and fantasy. Maybe they will start to make some new food deco or create some new way to cook. You never know. You can get some hint (info) from their expression. Booklet gives open space to create some new receipt, which people are not used to.

# D i s c u s s i o n

In the seventh year, many children become eager, besides playing, to achieve things for real! They like to help with household routines more than before. Since they take it seriously, they like to be taken seriously in return. They feel good when they succeed and when their efforts and achievements are recognized. (Ackermann., Dorothy& Falbel., 2004)

Hard fun!

This is a enjoyment related to accomplishing challenging tasks by this age of children. The harder the better. In the kitchen, children want to help prepare food, measures things, peeling and chopping vegetables etc. in which case the harder don't require strength but dexterity.

The product that gives children experience of togetherness and that they participate in the important work. Both parents and children contribute to one task to accomplish. The togetherness the product brings are both from the tools and the kitchen task. So I believe cooperation between adult and child in the kitchen is quality time which will strengthen the parent-child relationship.

The most reliable and valuable gift parents can give to their children is time. When parents don't have good time but they do will spend time in the kitchen.



# C O E

## Pre-purchase

The idea is children can get free small cook booklet (recipe) from school or people can get from food store. The cook booklet is specially made for both parents and children to encourage children to cook together with parents. On the booklet you can find different recipes for cooking and baking, the content of the recipes will be made both for adults and children. Children part will be more visualize in order to be easy understood and more attractive to children, and stimulate kids' curiosity. The pictures of family kitchen tools will be shown on each page relate to the different recipes. So it can evoke kid's attention about the kitchen tools through this way. In one way the cooking booklet build up a connection among readers, recipes and kitchen tools. Kids will be willing to try those kitchen tools to make food with parents.

At the same time, there is an app will be provided. Family can upload the pictures of food, which they had been made together to share with others. They can give recipes info which they have been used from 1:2 cookbook and which kind of tools they have been used. Except sharing, they can challenge other family or friends to make food. So kids will talk about it at school, and open discussion about cooking will be created. By seeing others result, kids are willing to try by themselves with own kitchen tools. Every month can reward those who have been most engaged to food cooking.

## POP

There will be different package of the kitchen tools. But anyway they will be packed in pairs, one for adult, and one for child. One can buy either whole pack or just one pair kit. This depends on the family. The whole pack is for those who are very engaged in food cooking or as a present pack. One pair kit is for those new beginners who want to try the product and want to invite kids to kitchen or for family has more than one child. There will be different color and pattern on the tools. So both parents and kids can choose which they like best. Besides the display, there will be a poster to introduce and visualize the idea of this product. Pictures show how it is desirable that this action be perceived by the child eyes.

## Product

The kitchen tool will give kids a sense of belonging and equality. Kids will have their own tools, and the same form as adults. Kids like mimicry, now they can do exactly the same as adults with the same tools. Children can express themselves through the tools that they are no longer little kids. And the product itself already brings a connection between adults and children.



## Use

This product is a not primarily toy. This is a real kitchen tool. Children can learn how to use original kitchen utensils. The product will by its design reflect adult tools and in principle could perform the same food making work. Kids can mimic adult's action with the same tools. The product that gives children experience of togetherness and they participate in the important work. They feel they are important and they can do seriously work, and they have been treated seriously.

One reason for this must be that the adult tools are cumbersome and difficult to use for children in your target market. At the same time there is the idea that they should participate in the work and therefore can customize the tool to your audience.

## Late use

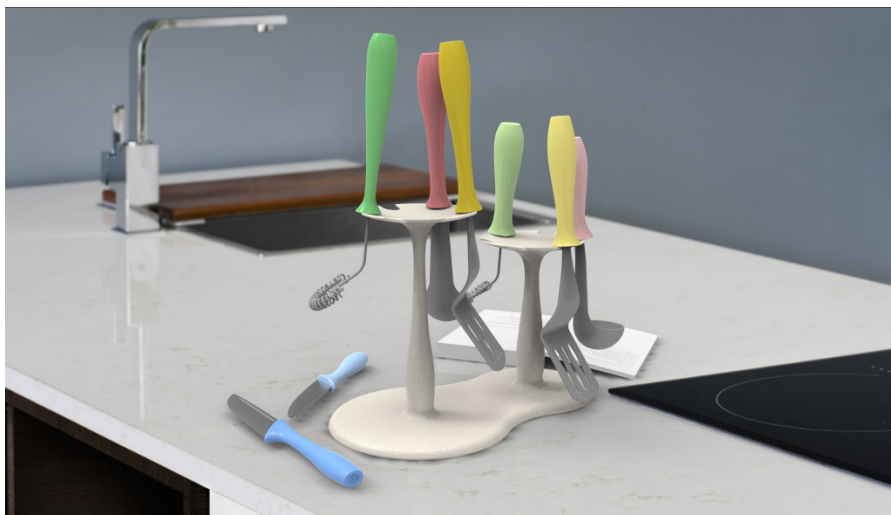
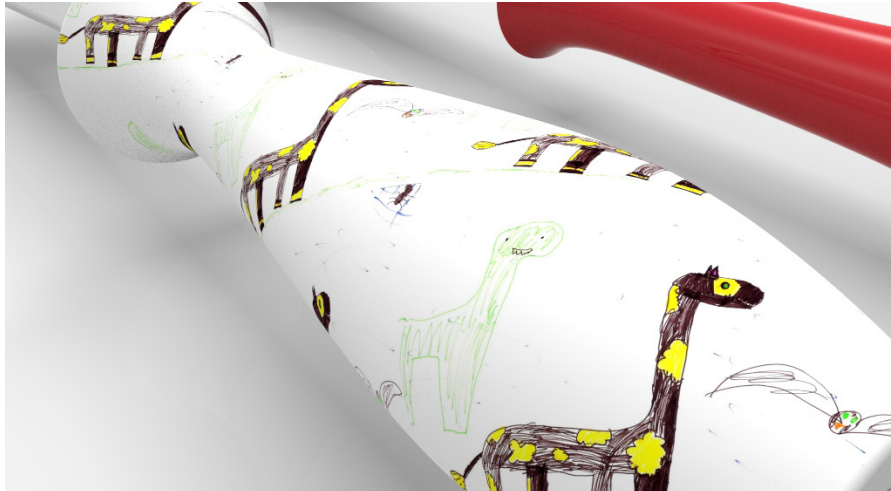
The kid's tool is not childish so keep a longer ownership for children.

More tools can be shared with other family members.

Kids can take the kitchenset with them to cabin or holiday.



# Further Development



# C o n c l u s i o n

The research question of this design project has been:

How can one support social interaction through design in the perspective of the parent-child relationship?

As the key to a positive and healthy parent-child relationship, communication and interaction has been focused on during the whole project. The goal of this project is to create the togetherness and quality time for children and parents through a product in order to enhance the parent-child relationship. To solve this research question, I've applied some relevant theories and different methods like interview professionals and children, observing family, mapping out problem area. This process was the main focus of the design project.

After these, kitchen situation has been chosen to focus on. Kids are very good mimics. And they look at the adult and they try to use the adult as a pattern for their own actions. Now they can mimic in a real situation and they had a chance to be a part of the food making process. The 1:2 tool can help children to reflect exactly how to grip the tool, the position, the point direction and improve their motor skills and coordination - sorting, cutting, peeling, mixing all involve certain dual-hand plus eye-hand coordination. This really boosts their self-esteem and encourages positive attitudes.

Younger children who are before 6 years old engage in pretend play, while children between 6-9 prefer real tasks and real activities. They want themselves look like adult, not just acting from the appearance but also doing serious task. 6-9 this age group have an acute sense of mastery. They want to do well, and they enjoy seeing and showing off their creations. (Dorothy,2004) So the kitchen tools meets these age group kids' psychological needs.

This utensils concept has just been test within 2 families in a real cooking situation. Although the result from the test was positive, but more test and development are needed. This tool may help and motivate the family, intergenerational, to take part in the food making process in the kitchen on a regular basis. This tool should motivate and help families to be able to share valuable quality time in hectic days with interaction through cooking.

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## Pictures and Illustrations

### Family

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### Mushroom:

<http://images.fineartamerica.com/images-medium-large/its-a-small-world-mushrooms-jennie-marie-schell.jpg>

<http://www.colourbox.com/preview/3265708-427961-moss-with-tiny-mushrooms-close-up-green-background.jpg>

<http://www.cherrycoloured.com/wordpress/wp-content/uploads/2010/07/mushroom.jpg>

<http://www.catchwallpapers.com/wp-content/uploads/2013/03/Beautiful-wild-Mushroom-macro-photography-wallpapers-1920x1200-8.jpg>

### Kitchen

<http://www.maxbo.no>

mirror / reflection

All from google picture.



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