Cultivating children’s potential as changemakers.

Notes on rethinking how society sees children’s role in shaping the future

Children usually have no role in shaping future policies or global issues despite their willingness and potential to contribute, and the fact that it is equally their future that is being shaped. The importance of children gaining both agency and the abilities needed to co-create their futures in our complex world is imperative in a society that is constantly changing. Building on field research conducted during the Global Children’s Designathon in nine cities worldwide, we explore in this paper how children see their own role in shaping the future. On the basis of the outcomes of ethnographic observations and interviews, we outline strategies for cultivating children’s creativity and potential as changemakers through interactive and mutually supportive processes where adults and children can ideate and prototype as a team.

KEYWORDS:
#designthinking #empathy #SDGs #collaboration #visibilitystrategies #intergenerationalrelationships #children

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Index / Contents

1 - Introduction

2 - Reasons why we believe children are invisible to adults in relation to global issues

3 - Initial questions and hypothesis

4 - Method-Case Study

5 - Results

6 - Discussion

7 - Conclusions

8 - Visual appendix

9 - Guidelines when co-creating with children

10 - References / bibliography

11 - Questionnaires & field diary appendix

12 - Acknowledgements
1 - Introduction

Children’s inherent ability to produce creative concepts for a better future is seldom taken seriously. The Organization for Economic Co-operation and Development (OECD) emphasizes however that a framework for future education must foster creativity as well as the responsibility for the consequences of one’s actions. How do we cultivate a generation of so-called “changemakers” if we don’t see children as capable of changing the world we live in and that they will inherit?

Empowering children to be creative while spreading awareness about the importance of engaging children as co-designers of society is rapidly becoming a key objective of education today. Our study is aligned with some of the key ideas from the 2017 Lisbon meeting of the 2030 Education Project where the relevance was established of giving children’s views space to be listened to, supported and acted upon appropriately. We think children should be in the middle of the conversation considering their expertise in crucial subjects such as education. This is not only a suggestion but a right that children should be claiming. According to to Shari Tishman, principal investigator on project Agency by Design and director of Project Zero: “My hope is that by encouraging young people to tinker with their world, we're empowering them to reinvent it”.

It can be argued that children possess a more unfettered capacity for creativity and that their ideas could be of great use in solving complex world problems. Children need however help from adults to integrate knowledge and achieve results. In this paper we will describe several case studies where children and adults work together to create solutions, or “co-create”. Further we will present empirical research regarding this co-creation between adults and children, gathered at the Global Children’s Designathon in 2017. Finally, we will present suggestions to facilitate activities where children and adults can work creatively and learn from each other. First however, let us explore why this is relevant, urgent and important.

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1 The project “Future of Education and Skills: Education 2030” will target school education, both general and vocational, while recognising the importance of learning progressions and a life-long learning continuum.
2 Idem.
3 UNICEF’s Fact Sheet: A summary of the rights under the convention on the rights of the child. Article 12: “Respect the views of the child”. When adults are making decisions that affect children, children have the right to say what they think should happen and have their opinions taken into account.
4 A multiyear research initiative investigating the promises, practices, and pedagogies of maker-centered learning experiences. www.agencybydesign.org
5 HGSE: Harvard Graduate School of Education.
2 - Reasons why we believe children are invisible to adults in relation to global issues

One of the findings from our field research is that adults presume a lack of concern on the children’s behalf in relation to tackling the world’s issues as summarized in the Sustainable Development Goals\(^6\). This presumption reflects the “label theory” that Cockburn described or that Sidoti\(^7\) expresses about recognizing the entitlements of children as participants. This is perhaps the first barrier to be tackled when we set out to create a context to facilitate more equal adult-children interactions in the present.

Here is a list of observations which illustrate a perspective we share with Chris Sidoti and why we think children are invisible by default:

1. Children fall under the label ‘cute’, a label with which adults both immediately and subconsciously reduce children to being unable to give opinions of any relevance on global issues. When we say cute, we mean that everything that children do is an exercise of naivety. Children are assumed to be careless individuals, ones still becoming human. This in turn sets a tone of condescendence that inhibits authentic communication between adult and child.

2. There are communication barriers between adults and children and translations are needed so that the children’s thinking and contribution can be better understood by adults. Children, generally speaking, have less verbal vocabulary with which to communicate or represent their ideas for understanding by adults. Perhaps a new form can be found to ease communications, for as one of the founders of the Reggio Emilia Approach has observed “The child has a hundred languages a hundred hands a hundred thoughts a hundred ways of thinking of playing, of speaking.”\(^8\)

3. Adults systematically underestimate children’s capabilities. We believe this is due to the fact that adults have few opportunities to interact with children in an equal collaborative (adult-child) context.

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\(^6\) SDGS: The Sustainable Development Goals (SDGS) are a collection of 17 global goals set by the United Nations like for example: Zero hunger, Clear Water and Sanitation or Climate Action (among other 14).

\(^7\) In his introduction Working Seriously Towards New Partnerships in “Children Taken Seriously: In Theory, Policy and Practice” (2005)

As you can see, there are several barriers to facilitation of co-creation between adults and children. With these barriers in mind we initiated our study by defining our initial questions and hypothesis, which is explained in the next section.
3 - Initial questions and hypotheses

Designathon, our design thinking method⁹, incorporates creative thinking and making with technologies. Through this learning method, children harness their creative ability, develop empathy and explore new technologies. During our 4 years of implementing this design thinking method with children (between 7 and 12 years of age) we have discovered the difficulties discussed in the previous section. We were therefore able to distill the most relevant and urgent questions, see below:

- Why are children labeled as unsuitable as part of decision-making processes in creative contexts?
- What would be the best strategies we could implement to increase children’s visibility and thus change this status quo?

After exploration of these questions, we defined the following hypotheses:

1. Following exposure to authentic co-creation situation, adults will realize that the ideas of children are contributory and have a distinctive perspective that add value.

2. Adults who value the ideas of children will experience a change of mindset regarding the participation of children in making decisions on crucial subjects.

In the next section we will explain how we undertook a study of the interaction of children and adults in a situation of co-creation and what the effects were on the adults as well as the children.

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⁹ “Co-design with children on societal challenges reveals their empathy and radical innovations”
https://codesignwithchildren.files.wordpress.com/2017/06/beameretal_cameraready_ws_idc17.pdf
4 - Method and case study

In our study we tested a number of strategies aimed to make children visible to adults in relation to global issues. We feel that this is needed to change the paradigm adult-child in relation to the way adults perceive children as shapers of their own future. Changing this paradigm is not a task that will miraculously happen overnight so we tested our hypotheses during our study of activities where children could “practice-pretending” being innovators.

According to Carlson, S. M., White, R. E., & Davis-Unger, A. C. (2014) ‘practice in pretending’ helps individuals conceptualize alternative ways of being and results in more creativity and better problem-solving. Also, an important benefit of early pretend play may be its enhancement of the child’s capacity for cognitive flexibility and, ultimately, creativity (Singer & Singer, 2005).

In this section we will briefly describe the situations that we feel create the conditions necessary for an authentic “unlabelled” interaction between children and adults. We will then explain our methodology of our study to discover how these activities contributed to co-creation between children and adults or a mindshift by adults, as we stated in our hypotheses.

Case studies:

Here is a list of the case studies that were included in scope of our study:

- Designathon Works method
- Global Children’s Designathon (GCD)
- The Singularity Summit, the production at scale of children’s ideas and
- A report: the Global Voices of the Next Generation: Water

Designathon Works method

Designathon Works\(^{10}\) is a design thinking method developed for children to empower and unleash their creativity to design a better world using new technologies. The themes children are given to work on are the sustainable development goals (SDGs).

In these workshops, children exercise creativity by seeing problems in ways adults don’t see them and propose solutions to them through their prototypes. These Designathons were

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\(^{10}\) https://www.designathon.nl
originally designed for children but are also contexts for adults to interact with children in different capacities. Those capacities include: as hosts to the event, as facilitators who work hand in hand with them, as panelists who actively assess the value of their creations based on different categories and even as observers of their cognitive learning process.

The Designathon method is also used as a school program. The program has been introduced in 60 schools in the Netherlands and is also available in English, French and Arabic. In this paper however, we focus mainly on the context of the Global Children’s Designathon.

**Global Children’s Designathon**

The Global Children’s Designathon is a yearly event, held in 2017 for the 3rd time, and is a day dedicated to what the world could be like when children design better futures using new technologies. On November the 11th 2017, 600 children from 18 cities around the world, worked in parallel to design and develop solutions and innovative concepts for water issues; building prototypes and sharing ideas with each other via a live connection. At the end of the day the children presented their work to a live audience and a panel of experts.

**Singularity Summit, The Netherlands**

A group of Designathon children had the opportunity to share their ideas and prototypes with solutions to global water issues on the stage of the Singularity Summit in Haarlem on November 21st, 2017. This was also an opportunity for the children to share their knowledge in an ‘adult’ context and to gain visibility outside of a children’s activity sort of space.

For this event, one group of children’s prototype was selected to be created at real scale at the We Make the City Festival11 in Amsterdam on June 24th, 2018 in order to show the value of children’s contribution. It is a concept for a new sort of pavement stone, which gathers and filters water during heavy rains. The clean water can then be pumped up for drinking, recycling the water on spot. Due to the timing of the festival, this strategy is outside the scope of this paper.

**Report Global Voices of the Next Generation - Water**

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11 A 5 days festival that tackles urgent everyday challenges in the urban environment across different locations in the Amsterdam metropolitan area.
This report compiled after the Global Children’s Designathon, shares amongst other data a selection of three designs from each of the 18 cities. These designs demonstrate that children care for our planet; are aware of water-related issues; believe these issues are pressing and are capable of offering concrete solutions to solve them.

**Methodology:**

The research we conducted took place on November the 11th 2017 during our Global Children’s Designathon in nine different cities: Montreal, Amsterdam, Singapore, Tunis, Zagreb, Milan, Dar es Salaam, Dubai and Goa.

We used primarily qualitative techniques such as:

- Participant observation
- Visual ethnography
- Informal interviews and
- Online questionnaires

...to gather as much information as possible from both sides of the action: Children (as active participants in the workshop) and Adults (as facilitators/observants of the action taking place).

The research took place simultaneously in these nine cities during the Global Children’s Designathon and was orchestrated remotely from Amsterdam’s Designathon Works headquarters.

The experimental research was divided in two parts:

1. A team of ethnographers (one in each city) observed and filled a pre-designed field diary with a series of questions and observations on children’s behaviour during the ideation, making and presentation phases of the workshop. During these workshops, a photographer-videographer photographed and filmed the action taking place.

2. Two specific online questionnaires: One was filled during the event by one children per team and another one was filled by facilitators in each city after the event.
5 - Results

The results of this study have been grouped into the following thematic groups:

A. Children’s self awareness and thoughts on joint (adult-child) creative processes

B. Children’s vision on adult’s creativity

C. Adult’s feedback after being given the opportunity to see children’s collaborative and creative skills.

In the next sections we will elaborate which responses gave insight into these themes within the context of the co-creation process between adult and child.

A. Children’s self awareness and thoughts on joint (adult-child) creative processes:

We asked them: Do you think children should rule the world?

From a total of 44 answers, 17 were positive, 19 negative and 5 about joint creative processes. 3 fell into the “don’t know” category. (By joint creative processes we mean: A series of actions where adults and children participate in a creative exercise from a cooperative perspective.)

Most of the answers have shown that children believe a lack of experience is a limitation for decision-making. some two-part answers showed that they could either help adults or be part of the process with adult’s guidance. Also, they believe in a joint process where their creativity is used with the knowledge of adults to find solutions to problems.

Some examples of their answers:

Children and adults both, because children can occasionally help and think things up and adults can help if the children do not succeed.

A combination of adults and children.

No, kids have great ideas but they need adult guidance to implement them.

I think kids should help but not completely be part of it (...) Kids should be listened to more and then see if their idea is good.
We asked them: *Do you see yourself as a creative person?*

42 out of 43 answers replied “yes”. Most of the answers connected being creative with making things / building or being good in conceiving new ideas. Some answers showed that children believe their imagination is their biggest asset when compared to adults.

**B. Children’s vision on adult’s creativity:**

**We asked them to complete the sentence: *Adults would be more creative if...***

12 answers showed that children believe adults could be more creative if they took action or got the opportunity to practice creativity and worked less.

14 out of 40 answers gathered in different countries, show that children believe adults would be more creative if they listened to or thought like children. This question brought to our attention that, again, children believe in a joint creative process where children are considered part of an ideation process. Also, it proved that children know that they are not considered and listened to as much as they believe they should be.

**Some examples of their answers:**

*Throwing away all the phones and turning off the electricity for a month, they have to make something.*

*Children are often more creative, so consult more with children.*

*If they spent more time with their children instead of working all the time.*

*If they would be with the children more, but instead when they get home, they just lay down and play with their phone.*

*They have less rules and they were less rigid.*

**C. Adult’s feedback after being given the opportunity to see children’s collaborative and creative skills:**

Some of the insights gathered after giving adults the opportunity to interact with children from a *productive* perspective in a creative context were first of all: Surprise. Adults were quickly aware
of their high level of prejudices towards children’s abilities to solve problems and coming with practical ideas based on a brief introduction to the problem.

### Some examples of their feedbacks:

(...) *I was surprised by how quickly and efficiently some of the children worked* (...)  
Iris, Montreal’s Ethnographer

*What surprised me the most was to see how children are able to think and ideate complex systems: Their inventions are not only objects per se, but instead interactions among people, animals, plants and other objects that connect systematically with each other.*  
Elena, Design Researcher / Facilitator in Milan

Adults had not expected such a high level of creativity and the methods used by children in their idea-making process. They found furthermore that there were lost strategies from childhood that definitely needed to be rescued in current adult contexts. These insights opened a new field to explore on child-thinking in order to tackle the paradigm of adulthood with regard to losing creativity. This same context promoted an interaction between adult and child that helped adults reflect on the skills children could contribute. The potential of this interaction will be further explored in the Discussion section that follows.
6 - Discussion

We used the collected data to describe what children believe as their strongest skill sets. We also asked them to describe what they believe they lack in the event that they were (hypothetically) included in a decision-making process with adults. One of the most revealing results from the children’s answers shows the children’s belief in the value of joint creative processes - “joint” in the sense that adults and children would find solutions together.

“Creativity becomes more visible when adults try to be more attentive to the cognitive processes of children than to the results they achieve in various fields of doing and understanding.” - Malaguzzi, 1993, p.77

If adults could internalize Malaguzzi’s thinking, they would endorse and support children’s ideas. We’re not specifically interested in replicating adult-like structures for children to be heard, we believe in a more authentic participation where views are exchanged from an “unlabeled” perspective. We propose an intergenerational intervention consciously designed to promote creative development and, as Sharp (2004) points out “(...) where adults can act as supporters without being overly didactic or prescriptive” (p.8).

Another conclusion is that adults became aware of the incorrectly low expectations they had of the children. Collected through informal interviews and general feedback during and after the workshops, most adults replied with surprise to the way children were able to tackle the problems proposed with expressions like: “surprisingly creative” or “the way they think is really unexpected”. This unexpected surprise proved that adults didn’t know that children had the potential to produce some of the ideas. Unwittingly, these low expectations conspire against the possibilities for cultivating creativity while simultaneously hindering mechanisms to develop children’s agency.

Adults face a large obstacle comprised of misconceptions and preconceived ideas in relation to children’s actual abilities. This is conceivably due to a lack of time and insufficient opportunities to observe the array of potential qualities of children. Yet in the brief period of the study (we’re talking about a few hours), the adults who were present, had their old concepts transformed. From expectations which can be typified as negative or cute (that immediately “labels” children’s approach to problem-solving as condescending) towards conceptions of surprise, respect and even awe.
We gathered enough empirical evidences to prove that: although children are lacking in experience, they themselves feel ready to be seen, included and taken into consideration in joint creative and decision-making processes.

Children’s self-evaluation in terms of creativity scored very high, this was independent of their socio-cultural environment. Neither did we see any striking differences on this subject based on the geolocation of the answers.
In their answers, children consistently showed that they believe to possess a set of distinct abilities that adults lack. Also, they are aware of the importance of having experience (that they are still gaining) in order to be better equipped to take important decisions. Across the board, the children said that they can benefit from working with adults and that adults can also benefit from working with children; that there is a joint process and that such contexts should be created more frequently.

Adults, for their part, when given the opportunity to share a space with these young creators, were surprised not only about their capabilities but also at the level of their knowledge and engagement with the subject matter. Similarly, the adults were confronted with their own preconceived opinions that they had about children. Reflecting on an earlier statement, we’re not interested in replicating adult-like structures for children to be heard, we are proposing a more authentic participation where views are exchanged from an unlabeled perspective.
7 - Conclusion

We focused our study on these two questions:

- Why are children considered unsuitable and unprepared to be part of decision-making processes in creative contexts? and
- What would be the best strategies we could implement as methods to change this?

During our research we found answers that revealed that adults hold preconceptions of children’s inherent abilities to propose solutions to global problems mostly rooted on insufficient observation time spent with children. On the other hand, children consistently showed they believe they possess a set of distinct abilities that adults lack but are aware of their inexperience that otherwise could be supplemented by a joint creative process with adults in order to take important decisions.

Strategies implemented:

We realize that the beginning of a non-judgmental mindset amongst adults starts with facilitating creative contexts where this observation can happen therefore the two-sided change of paradigm could take place. What do we mean by two-sided paradigm?

On one side, we have children self-evaluating their strongest assets and “practicing pretending” to the point where they become ready to exercise their right to participate in the change they should be already co-creating. On the other side, we have adults, that when given the opportunity to work as a team with children, they discover that their abilities and skills are valid in adult contexts.

This publication highlights the following conclusions:

Adult’s poor evaluation about the ability of children to tackle big issues and propose possible solutions to solve them is modified when they’re given the opportunity to observe and participate in a mutually supportive creative activity.

These contexts we call workshops, not only work as nurturing exercises to empower the capabilities of children as change-makers, but also function as encouragement strategies to recognize young children as social actors from the beginning of life following United Nations Convention on the Rights of the Child.
Through an evaluation of the research at hand, we found support for the following idea: Through the facilitation of such mutually supportive contexts, we could have more structured and efficient policies that would fit children’s needs based on their participation in the idea and decision-making.

Going forward, we propose a series of guidelines applicable to different contexts. We foresee a potential impact that this model of collaboration can bring to new initiatives. This method can be used as a method to bring children and adults together, hopefully serving as a basis for more mutually supportive contexts; to cultivate the capabilities of children as change-makers and to encourage strategies to recognize young children as social actors in societies worldwide.
8 - Visual appendix

Fig. 1 Adult-child Interaction

Fig. 2 Adult-child Interaction

Fig. 3 Adult-child Interaction

Fig. 4 Adult-child Interaction

Fig. 5 Adult-child Interaction

Fig. 6 Adult-child Interaction
Fig. 7 Adult-child Interaction

Fig. 8, 9, 10, 11: Stills taken from a video filmed during the GCD in Zagreb collecting adult’s feedback on children’s creativity:

Fig. 8 Subtitles: “The way children respond to given tasks…”
Fig. 9 Subtitles: “… their reaction is surprisingly creative…”
Fig. 10 Subtitles: “… and the way they think is really unexpected”
Fig. 11 Subtitles: “It’s really advanced and sophisticated in it’s solutions”
9 - Guidelines to co-creating with Children

Distilled from the findings in this paper, the following points summarize a series of guidelines for adults to take into consideration when co-creating with children:

1. We’re not specifically interested in replicating adult-like structures for children to be heard: we believe in a more authentic participation where views are exchanged from an “unlabelled” perspective.

2. **Honest Expectations:** the scope of the process and what will happen with the outcomes generated must be made clear at the start.

3. **Pause preconceptions:** Ignore the existing limitations and embrace the unexpected in order to fully co-explore an idea.

4. **Appreciate** each other’s abilities: that’s when collaboration starts.

5. **Learn:** not only children should be open to learning, adults should also be making use of co-creation opportunities to broaden their own field(s) of knowledge.

6. **Language and Tone:** Be open to listen from an adult perspective but with a child’s sensitivity. Believe in the power of dialogue, to co-explore ideas. Rather than suggesting answers, keep asking questions with a neutral tone. In this way you can help the child to verbalise their concepts.

7. **Don’t assume** (as an experienced adult) you know better. Similar to numbers 3, 4 and 5 but worth repeating.
10 - References / bibliography


**Online Resources:**

http://www.agencybydesign.org

http://www.challengesuccess.org

https://dschool.stanford.edu

http://www.open.ac.uk/creet/main/

https://www.nfer.ac.uk

http://www.oecd.org

https://web.stanford.edu/group/redlab

http://www.shadowastudent.org

https://www.wise-qatar.org

Global Children’s Designathon 2017: https://www.youtube.com/watch?v=dRf9p2yFMWk

Water Report:

https://docs.wixstatic.com/ugd/b179a6_d6411104a2e944a694a971d8b75b8a5a.pdf
11 - Questionnaires & field diary appendix

The questionnaires and the guidelines for the ethnographers covered a vast array of subjects. At the time, they were intended to be used for different purposes. A section of the information gathered was intended to evaluate collaboration and children’s dynamics when being creative and some specific questions regarding how to solve problems related to water where used for a report shared in Dubai at the World Economic Forum.

QUESTIONNAIRES:

Facilitators / adults:

1. Name / city / e-mail
2. How would you describe the collaborative process of the children?
3. Was there any case of children who didn't participate at all?
4. Were the children limited by the feasibility of their ideas when brainstorming?
5. Do you think kids realize they are being creative when they try to solve the problem?
6. Do you think there were roles assigned merely on gender?
7. How did the tool kit worked?
   Did the children have enough materials and objects to work on their prototype?
   Do you have any specific case of re-use and repurpose of materials that called your attention?
8. From your point of view, what stage do you think they enjoyed the most?

Choices: ideation / prototyping / presentation

9. What preconceived ideas about children did you have and changed when seeing children in this Designathon?
10. Did you notice any fear of judgement from the children?
11. When choosing problems, did they think mostly locally or globally?
12. When I was a child I was really into...
13. In what way is your previous answer is part of your life now?
14. Based on your observations: What do you think we (adults) should learn about the process of children?
15. From your personal experience:
How do you think your creativity would have developed if given the opportunity to experience a Designathon in different stages of your growth from child to adult?

Children

FIRST BLOCK
1. You are: (choices) boy / girl
2. Age / city
3. Why did you want to participate in this Designathon?
4. Do you think children should rule the world?
   Yes, because...
   No, because...
5. How many children are in your team?
6. How many girls and how many boys?
   [8 questions exclusively focused on the theme to tackle: Water. Irrelevant for the purposes of this paper]
14. How did you and your team decide which one was the best idea to prototype...
15. Describe your prototype and how it works:
16. What was the most important thing you've learned when you were doing your prototype?
17. How often do you have the opportunity to be allowed to solve problems in your school or at home? (choices:) often / not too often / I generally don't have the opportunity
18. What would you do if you had enough money to develop your idea?
19. Was it easy to find solutions when working with other children? (choices:) yes / no
20. What were the biggest problems when working with your team? (choices:) listening to each other's ideas / getting everybody involved / technical issues (batteries etc...) / what materials to use / the building of the prototype / other
21. Working in a team sometimes can be hard, but when it works, it's great!
   Why is that?
22. What part of the workshop did you you like the most? (choices:) facts and ideas about water / finding the idea to solve the problem / sketching / making / the presentation
23. Adults would be more creative if...
Notes for ethnographers:

How many children are there?
Boys / Girls?
Is it a diverse group of backgrounds? Tell us more

We will be focusing on 4 main categories:

1. Creativity / problem solving skills
2. The child as designer of a better world
3. Collaboration & communication in teams
4. Technology literacy

1. Number of ideas per team and amount of changes in ideas during ideation.
   Does the team come up with a lot of ideas?
   Do they choose their first idea and go with it or change a lot while brainstorming?
   How would you describe the children’s attitude to coming up with ideas?
   Excited / daunted / playful / brave / puzzled ... These are just some suggestions, what do you see?
   How original are the solutions in your view? Can you share some examples?
   Have you noticed any specific strategy for dealing with frustration in getting ideas together? (Don’t be afraid of nonverbal cues. If you notice something, feel free to write about it)

2. Are you surprised by anything as you see the children working?
   Such as their level of knowledge, their engagement? Or other aspect?
   Do you notice similarities or differences with how an adult’s might act in this process?

3. Is it a group effort working together, or do you see more one child leading and the others following?
   Are all the children willing to collaborate? If the answer is no, why do you think that is?
   Do you see “communication breakdowns”, can you describe?
   Do you see strategies for solving this amongst the children?
   Do you see different dynamics going on depending on the size of the groups?
   As in do you see different strategies for collaboration in groups of 3 children as opposed to groups of 4 children or more?
4. How would you describe the level of technical knowledge in the groups? What are the most common problems they’re facing with technology during the prototyping phase? Are they able to solve them? How? Are there gender gaps (boys / girls) towards technology? How would you describe the attitude of the children towards using the maker kits and electronics in their projects?
12 - Acknowledgements

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