
Children:MAKE - Promotion of Children's Rights through Soft Power and Making



Figure 1: Local participation in Children:MAKE, Belgrade, Serbia

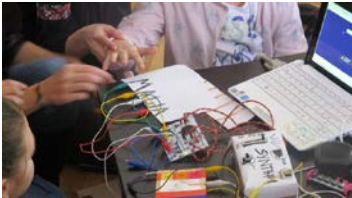


Figure 2: Children and local teachers engaged in digital fabrication activities in the Children:MAKE project

Eva Eriksson

Department of Applied IT
Chalmers University of Technology
Gothenburg, Sweden
eva.eriksson@chalmers.se

Niels Swinkels

Interactive Institute Swedish ICT
Gothenburg, Sweden
niels@tii.se

Carl Heath

Interactive Institute Swedish ICT
Gothenburg, Sweden
ch@tii.se

Erik Einebrant

Interactive Institute Swedish ICT
Gothenburg, Sweden
eriein@tii.se

Peter Ljungstrand

Interactive Institute Swedish ICT
Gothenburg, Sweden
peterlj@tii.se

Abstract

In this paper we will focus on a dual model of engagement in order to globally establish digital fabrication and making in education. We believe that digital fabrication and making in education will not spread and grow roots within the broad educational system without changes in policy on national and international level. We strive to expand the understanding of establishing digital fabrication and making in education by discussing the implications of a dual model of engagement through a case study. It is further the hope of the authors that the example will serve as inspiration to others, and may ultimately lead to better integration of digital fabrication in education in a global context.

Author Keywords

Digital fabrication; design thinking; making

Introduction

Twenty-five years ago, the UN General Assembly adopted the Convention on the Rights of the Child [2]. To mark the anniversary, the Children MAKE project was initiated, which is both a method and a set of practical activities highlighting children's right to culture and participation. In Children: MAKE it is the children themselves that control the process. We create a place and supply them with tools for their work – in what is



FabLearn Europe, 19-20th June 2016, Preston, UK
<http://fablearn.eu/>



Figure 3: Hexagonal cards in Children: MAKE, describing the content of Makerspace in a bag



Figure 4: Description of the Makerspace in a bag



Figure 5: Description of the process

known as a makerspace. The concept is based on the 'maker culture', a global movement that has grown steadily in recent years. Arts and crafts and other types of handiwork are combined with modern technology such as 3D printers, robotics and computer programming. Making things together, co-creating, is a time-honoured practice but the emergence of community interaction and both physical and digital places in which to share knowledge and tools is a comparatively new phenomenon. Digital Fabrication will not spread and grow roots within the broad educational system without changes in policy on national and international level. We need empowered and informed policy makers able to evaluate and design digital fabrication initiatives in educational contexts. The contribution of this paper consist of key lessons from adopting a dual model of engagement.

Children: MAKE

Starting in 2014, the Children: MAKE project has been carried out as a partnership between IDAC and the Swedish Institute. The Swedish Institute (SI) is a public agency with the commitment to gain knowledge and understanding of different cultures and their people, and to promote Sweden and Swedish issues globally. The specific interest of SI is to create change on both a policy level, and in practice in regards to the Rights of the Child, Freedom of Expression and the Right to Culture [2]. SI initiated the Children: MAKE project to make digital fabrication in education a global issue. A 'Makerspace in a box' was designed to fit in a suitcase, and has so far been tested in several workshops in Serbia, Turkey and in Sweden, while new adventures are currently planned for in e.g. the Balkans, Russia, and Albania. The main goals with this project are promotion of children's rights, and co-creation of a

space for engaging children in a process of creative expression and empowerment. Further goals are to explore new methods, processes and tools that can be easily repeated; be inviting and enabling local professionals to contribute in creation of children's spaces; support interplay between pedagogical, artistic and technological expertise in generating learning experiences; and further sharing knowledge and tools in the local and global context.

A dual model of engagement was used; on the one hand policy leaders and key stakeholders on a national level were invited to a round table discussion at e.g. the Swedish Embassy in Belgrade, on the other hand practical maker workshops with children were hosted by local programmers, artists and teachers. Running these activities in parallel created a possibility to show and tell, by creating a vivid experience of the learning of the child at the same time as there were talks on policy level on that same topic. In a wider context, the project strive to establish EU policies on culture for/with children, child rights, and on education.

The overall vision of Children: MAKE is that children are competent subjects who have the right to actively participate in culture and co-create a culture by expressing their own ideas and perspectives. One aim is to increase commitment for the creation of spaces for and with children to gather, co-create and share culture using art and technology as a means of expression. Another aim is to provide spaces for co-creation with children which contributes to children's rights, personal development, and democratic and sustainable development of the society. The underlying principles for the project are to use the maker movement as inspiration, with child participation and art and

technology as means of expression. The participants are children of different ages with different experiences as well as local teams of professionals from child rights, arts and technology. Taking the local context and participatory perspective into account is vital, where the local team is identified and gathered in order to co-create the Children Make method, co-operating in implementing the method, and contributing in further development of the method.

The basic values for the series of workshops are equality, openness, child rights, diversity, creativity and innovation, and sustainability, as well as the principles of co-creation: exchange of ideas, knowledge, perspectives, participation, iterative processes, and openness. The working process with the children during the workshops is as follows: 1) Choosing the theme: Play, Inclusion, Equality, Sustainability, Learning, Identity, Making a difference), 2) Discussing relevant issues, 3) Exploring the themes and tools, 4) Expressing own perspectives, 5) Making.

Materials for the makerspace in a box used in the project are based on available and affordable tools, in a combination of ordinary and extraordinary tools, and consist of: Little bits Korg (synth) kits, Ototo kits, Speakers, Raspberry pi, Mini projector, Usb hub, Wi-Fi dongle, Mouse, 7 inch screens, Keyboard, HDMI cable, USB cable for power, Eee PC incl. charger, Usb power adapters with 6 ports, MaKey MaKey including USB cables and alligator cables, Graphite crayons, Copper tape, and Open sources, see Figure 3.

The documentation is highly valued in the Children: MAKE project [1]. Documentation is here used both for documenting the process and the children's work, but

also for communication with schools and teachers, decision makers, parents, local public, as well as a tool for reflection, see Figure 5. Cards are used in order to visualize and communicate the workshop process, values and materials, and as a tool in the workshops.

Conclusion

The outcome of the Children: MAKE project is beyond expectation from the point of view of the Swedish Institute and the Ministry of Foreign Affairs, and this combination of practical and policy actions at the same time, while using soft power to create change, seems to be something that the Swedish government will explore further. Furthermore, the project is a success from the point of view of the local team and the participating children, who co-created the event, making the political aspects of this project not only focused around policies, but also equality and democracy. Even though the project runs in an international context and in informal education, its principles can be transferred into local and formal education contexts as well, e.g. equal opportunities for all children to have access to and develop technological and digital literacy, and democracy in a digital age where knowledge of computers, programming, design thinking and digital fabrication are considered key competences in order to fully understand the nature of today's digital society.

References

- [1] Mikhak B, Lyon C, Gorton T, Gershenfeld N, McEnnis C, Taylor J. (2002). Fab Lab: An alternate Model of ICT for Development. In Development by Design Conference, Bangalore, India.
- [2] UN. Convention on the Rights of the child. Online resource. Retrieved 2016-05-14 from: <http://www.ohchr.org/EN/ProfessionalInterest/Pages/RC.aspx>

Children:MAKE - Promotion of Children's Rights through Soft Power and Making

By Eva Eriksson, Carl Heath, Peter Ljungstrand, Niels Swinkels



www.idac.se

Dual Model of Engagement - Policy and Practice

CHILDREN: MAKE

Run by IDAC, the Swedish Institute and the Swedish Ministry of Foreign Affairs

The main goals:

- Promotion of children's rights, and co-creation of a space for engaging children in a process of creative expression and empowerment.
- Explore new methods, processes and tools that can be easily repeated; be inviting and enabling local professionals to contribute in creation of children's spaces
- Support interplay between pedagogical, artistic and technological expertise in generating learning experiences; and further sharing knowledge and tools in the local and global context.

Underlying principles:

- The maker movement as inspiration, with child participation and art and technology as means of expression.



DUAL MODEL OF ENGAGEMENT

A dual model of engagement is used to create change on both a policy level, and in practice in regards to the Rights of the Child, Freedom of Expression and the Right to Culture, and to have making a global issue:

- Policy leaders and key stakeholders on a national level are invited to round table discussions at the local Swedish Embassy
- Practical maker workshops with children are hosted by a group of local programmers, artists and teachers.



MAKERSPACE IN A BAG

Makerspace in a Bag

A 'Makerspace in a box' was designed to fit in a suitcase

Materials are based on available and affordable tools, in a combination of ordinary and extraordinary tools

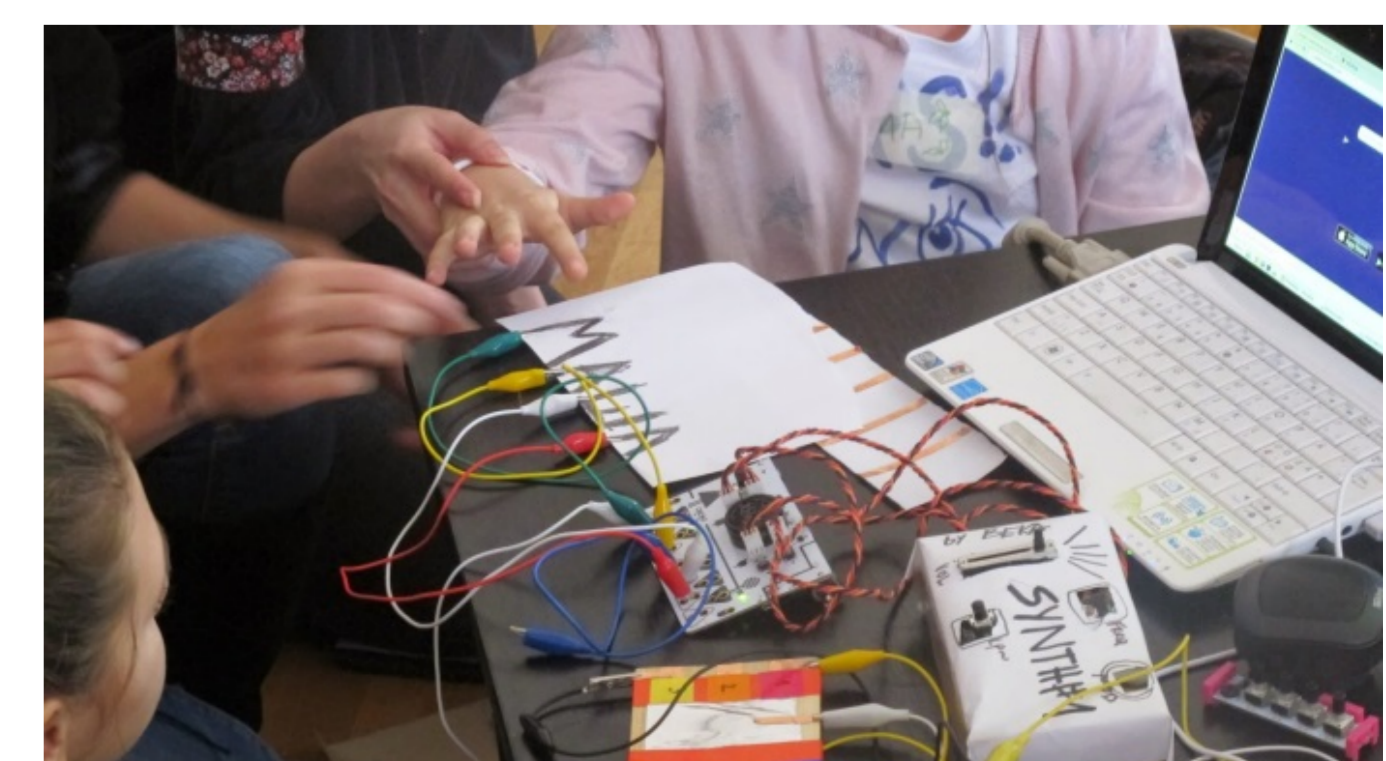


RESULTS

Children: MAKE, a flexible and applicable concept that highlights children's rights to culture and participation.

The underlying principles for the project are to use the maker movement as inspiration, with child participation and art and technology as means of expression.

So far tested in several successful workshops in Serbia, Turkey and in Sweden, while new adventures are planned in e.g. the Balkans, Russia, and Albania.



UNIVERSITY OF
GOTHENBURG



CHALMERS

