

YOUNG CHILDREN (0-8) AND DIGITAL TECHNOLOGY

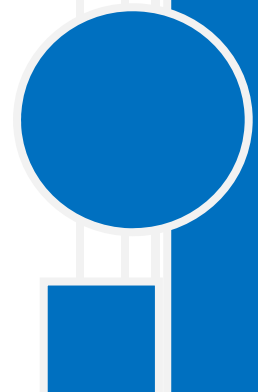
*A Qualitative Exploratory Study - National Report
SWITZERLAND based on the 2016 Survey*

Authors: Bianca Könitzer, Franziska Jeker, Gregor Waller

Project Management: Gregor Waller

Contact: gregor.waller@zhaw.ch

Zurich University of Applied Sciences
Psychological Institute
Section Media Psychology



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Executive summary

Key findings

- **Children are fascinated by all kinds of digital technology and they play an integrated yet not dominant role in their lives.** Affinity and demand for digital media use vary among children based on their individual predisposition and the influence of their parents but they all are curious about ICT and keen to explore them more.
 - **Children's online and offline activities are well balanced.** Traditional play and outdoor activities are common in Swiss families and highly enjoyed by children, digital media is simply another source of entertainment. Social activities with family members or with other children are mainly preferred over playing with digital media.
 - **Swiss children are modest users with rather basic skills.** Digital skills vary among young children, depending on what they are allowed and fostered to do by their parents. In international comparison, Swiss children do not spend a lot of time with digital media and their skills are rather basic.
 - **Children learn the handling of digital media intuitively and rather incidentally** by watching others. More complex processes like making several devices work together or using new games, they mostly learn with the help of their parents.
 - **Children use digital media for both relaxation and personal challenge.** Whereas DVDs and Audiobooks are happily played repeatedly as a way to relax themselves, kids enjoy applications and activities with an exciting, competitive edge which challenge them to new levels, bring new information, give them a possibility to prove themselves and improve their skills.
 - **Children love play time with their parents**, no matter if online or offline, and would love to have more of it. Especially children who have no siblings and those who spend a lot of time in external child care wish that their parents spend time with them and like them as partners also for playing with media.
 - **Parents have a role model function.** Children's perception of the relevance of ICT is mainly triggered by their parents' media use. Parents are mostly aware of their role model function for balanced
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media use but also sometimes find it hard to live up to it. A healthy media regulation requires the allocation of time and engagement from the parents.

- **A trusting relationship is essential for monitoring children's activities and being able to protect them from risks.** Most parents manage to maintain a trusting relationship with their children, so the kids would come to talk to them about uncomfortable experiences or things they do not understand. In addition, children in general do not use ICT without their parents' permission, even though devices mostly are not locked for children.
 - **Young children have no clear concept of the internet and the possibilities and risks that are related to it.** They understand that devices need to be protected (with passwords and careful handling) but mostly have no understanding of how being online could bear negative consequences for them and their identity. In terms of possibilities they perceive digital media (respectively google) as a source of incredible knowledge that has an answer, picture or video to any possible question or topic.
 - **Children's favourite digital device is the tablet PC but in general, activities are more important than the device it is used on.** The tablet PC seems to stand out as the device which is most fun to use for kids since it is easy to navigate via apps and a big touch screen. Moreover, it has the broadest range of options for use. For most other devices the activity it is used for seems to be more important than the device itself. The TV is still a favourite source for passive media consumption due to its endless and self-created content. Watching films on YouTube is popular as well due to its never-ending content. Portable devices seem to be preferred since they can be used in cosy places. Children love to listen to Audiobooks, also as a passive background story when drawing or playing traditionally.
 - **Children perceive the TV program and online content as an endless source of entertainment,** which seems to have an addictive effect on children and makes it hard for them to let go of. Media with limited and therefore known content, such as DVDs, Audiobooks, games they have already played, etc. seem to be easier to turn off if needed because they can always come back to it.
 - **Digital devices are commonly used as momentary caregivers in certain situations,** for example when doing housework or in public situations to keep children occupied for a while. Most but not all parents use the "babysitter function" responsibly and simply combine
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the screen time of their kids with situations where it is practical in terms of family organisation.

Challenges and recommendations

1. Recommendations to policy-makers

Young children are not aware of online related risks. For their protection:

- Consider **age limit for YouTube content**.
- **PEGI age recommendations should be expanded onto interactive toys.** Interactive toys (such as online responsive dolls or balls) should have an age limit and should be marked as such.
- **Restricted mobile phone plans for children should be an obligatory offer** in the product range of telecommunication providers.

2. Recommendations to industries

- **To Telecommunication Providers:** The results of the study show gaps in supply of suitable service solutions. To support a healthy media education for children and adolescents, there is a need for specially fitted mobile phone plans. Thus, children are moderately introduced to online consumption in a way that allows them to develop a self-controlled, responsible media use. A Junior Phone package for instance could contain one emergency number free to call at any time and limited data that can be increased individually by parents according to age/responsibility.

3. Recommendations to parents and carers

- **Take time for media education.** Media education is also about sharing values in general and overlaps with other educational topics. By using synergies, time can be effectively invested.
 - **Talking about children's online life.** In order to mediate the online activities of adolescents (especially once they have their own phone and internet access) and in order to protect them from online risks, parents need to know what kind of activities they engage in. The «online life» needs to become part of the daily communication. Keep the communication positively connoted in a friendly,
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interested atmosphere. Explore the internet together with your child, try things out and have fun together online.

- **Maintaining a trustful relationship** is key in general but also to stay up to date on children's digital activities and to be able to offer help or protection when something goes wrong.
- **Media use should not be used as a reward or punishment.** Prohibitive rules for media use give ICT more importance than necessary and enhance the urge for their use. When children don't get to try out things they have less of a chance to develop media competence. They will also have less negative experiences because they are not allowed to do much but once confronted with online problems outside of their home, they will also have no competence to deal with them.
- **Separated parents: do not undermine the other parent's media rules.** Separated parents do not need to have the exact same media rules, children can distinguish between different rules in different places, but they do not cope well with parents discrediting each other, it creates confusion and loyalty conflicts.
- **Engaging in shooter games** often is compensation for a missing male role model. If it is not possible to engage the father, try to involve another male family member/god father in the education and digital mediation if possible.
- **YouTube is uncontrollable content.** Young children shouldn't watch YouTube videos on their own, since it provides contents not suitable for children in an uncontrollable way. The sound does not always make clear when contents get too strong for your child, stay with him/her when being on YouTube. Violence is not the only content which might influence your child's personality, but also outdated role models, gender issues, political incorrectness, etc.

Helpful links and further information:

- **Reasonable age recommendations for games** are available on www.bupp.at (in German). Age recommendations on www.usk.de are mostly too low.
 - **Age recommendations for films and videos** are available on www.fsk.de and www.svv-video.ch
 - **Age recommendations for screen time and further information** (in German): www.jugendundmedien.ch/chancen-und-gefahren/fragen-antworten.html
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1. Introduction

This study is conducted in the framework of the JRC's Project ECIT, Empowering Citizens' Rights in emerging ICT (Project n. 572). ECIT deals with "Identification of new threats to children by ICT besides social networks. Development of recommendations to empower children's rights by preventing and mitigating these emerging issues through education, school and community co-vigilance, as well as reconciliation of digital and personal interactions".

Research focusing on the benefits and challenges associated with children's use of the internet has, so far, mainly targeted 9-16 years old (see, for example, the EU Kids Online research carried out since 2006). Yet, research shows that children are going online at an increasingly younger age. However, "young children's lack of technical, critical and social skills may pose [a greater] risk" (Livingstone et al., 2011, p.3). In spite of the substantial increase in usage by very young children, research seems to be lagging behind. Therefore, research targeting 0-8 years old and which explores the benefits and risks of their online engagement is imperative.

In collaboration with a selected group of academic partners in different European countries, the present study is a qualitative study that aims at exploring young children and their families' experiences with new technologies. In particular, we will look at their (online) technological engagement as well as the potential benefits and risks associated to their (online) interactions with new technologies. Its results will serve as a basis for policy recommendations¹ and what should be looked at when launching larger EU studies on the benefits and challenges associated to young children's use of new (online) technologies.

The aim of our research is to generate data to address the overall question, in what ways, if any, are children and/or their families empowered by the use of new (online) technologies? In other words, what benefits or risks can be identified from the research, regarding young children's use of digital technologies at home?

In 2014, four areas of specific investigation have been identified (see below). The first two areas were core to the study and the second two were investigated as additional areas, insofar as time with the families' permits:

¹ In the framework of the EU agenda for the Rights of the Child (2011) and the European Strategy for a Better Internet for Children (2012)

As a general consideration, the interviewers focused on the HOW, WHY and its own observations. She/he will as well explore and take notes of interesting quotes/stories from the children and parents.

The **first section** of this document displays the **initial Research Questions Chart** dated **September 2014** and used in the pilot research in autumn 2014 and breakdowns into sub-questions of the four main RQ:

- **RQ 1: How do children under the age of 8 engage with new (online) technologies?**
- **RQ 2: How are new (online) technologies perceived by the different family members?**
- **RQ 3: What role do these new (online) technologies (smartphones, tablet PCs, computers, video games, apps, etc.) play in the children's and parents' lives (separately and in relation to family life in general)?**
- **RQ 4: How do parents manage their younger children's use of (online) technologies (at home and/or elsewhere)? Are their strategies more constructive or restrictive?**

Its **second section** displays its **revised version** dated **May 2015**. This revision followed a workshop that gathered partners on 27/04/2015 in Ispra, Italy and had them work together on the improvement of the Protocol of observation and on the pre-defined analytic framework. Re-elaborating the present Research Question Chart was the basis of this work.

Indeed, after the pilot research performed in 2014, the partners felt the need to improve this basis to simplify the framework and avoid as much as possible redundancy in the interviews and in the reporting documents. Mainly, these changes would touch the RQ 3 as it is in fact already much discussed in the discussion generated by RQ 1 and 2. This task has been carefully undertaken as it was also essential to keep a structure and references as close as possible to its first version to allow comparison with the first data set. To this end and to gain in clarity, 4 topics or dimensions have been identified (USE, PERCEPTIONS/ATTITUDES, INDIVIDUAL CONTEXT, FAMILY CONTEXT) and linked to the 4 main RQ. This was framed as follows:

	INDIVIDUAL CONTEXT	FAMILY CONTEXT
USE	RQ 1 : Individual Use: children/parents	RQ 3: Family Use/Dynamics/ Practices
PERCEPTIONS/ ATTITUDES	RQ 2: Awareness of risks/opportunities <ul style="list-style-type: none"> • of the children • of the parents 	RQ 4: Parental Mediation <ul style="list-style-type: none"> • Passive/active • Restrictive/permissive • Implicit/explicit • Reverse mediation

Under this new frame, RQ 1 and RQ 2 remain clearly the core questions that the sets of questions of RQ 3 and 4 will complete to go behind the individual context and explore the family context and mediation.

It has been underlined that most of the data collected for the children's part would come mostly from observations and from the interview generated by the support of the card game and activity book. The questions present in the chart and in the interview schedule will help the researcher either to prompt the children in their actions or to clarify her/his own observation. To this end, it has been chosen to keep all questions of the first version of the Research Questions Chart and of the interview's schedules but introducing the new perspective/perception of seeing them as a 'toolkit' provided to the interviewers. They will use this collection of questions from which he/she will freely pick questions in order to help them to gather data for the 4 dimensions (USE, PERCEPTIONS/ATTITUDES, INDIVIDUAL CONTEXT, FAMILY CONTEXT) that do not arise spontaneously during the observation/interview.

The semi-conducted interviews of the parents, beyond the sets of questions, were supported by the following tools to gather information:

Interview parts/tools	Ice-breaking	Parents	Children
The activity book	X	X	X
The card game + smiley		X	X
The word cards		X	
Pictures taken by children			X
Drawings by children			X
Apps and Digital services logo and icons			X
Form - Possession/Use of ICT		X	

2. Family Portrait Gallery

All families live in urban areas in the northern part of Switzerland.

Family 1



Family 2



Family 3



Family 4



Family 5



Family 6



Family 7



Family 8



Family 1

Family members

- Father, 43 years old, CH01f43, high digital user
- Mother, 40 years old, CH01m40, high digital user
- **Girl, 7 years old, CH01g7, just started 2nd primary school, medium digital user**
- Boy, 3 years old, CH01b3, play group, medium digital user

Narrative

Living. The family lives in a modern house with garden, both kids have their own room. The family seems socially well integrated and close with the families in the neighbourhood, their children are in close contact.

“I believe how parents handle media use is how it will be passed on to their children.”
(CH01m40)

Parents’ work and daily routine.

The family consists of the mother, who works in the information industry (70%) and the father, who works in the food industry (80%). Both have a tertiary degree and share the responsibilities for the kids pretty evenly. The girl goes to second year of primary school, and is at school from 8-12 every day. The boy is not in Kindergarten yet but visits a forest playgroup. When not in school the Kids are taken care of by their parents and two days a week the Kids stay at the mother’s parents’ house. Especially the grandfather was mentioned as another key carer within the family, he used to work in education. He allows most freedom for the kids in terms of media use.

Devices. Several technological devices were allocated in different rooms of the house, such as smartphones, tablet PC and laptop, personal computer, TV. The kids own no digital devices of their own, but get to use most of the parents’ devices.

Applications and activities (online/offline). The parents seem to be skilled in everyday use of all kinds of digital media, both use digital media on a daily basis at work and at home. The father seemed to be more prone to research new games for the kids, following recommendations in the newspaper or from other parents they are friendly with. They seemed very keen to provide the children with smart, quality apps and are willing to pay for it (1 or 2 francs per game). They put quite an effort into checking the

games for quality, trying out new games together with their kids and delete games which they do not find suitable. The father also mentioned his affinity to watching TV and movies, as a passive, consuming way of winding down. His smartphone also contains about 20 movies for kids that he chose and downloaded for the children to watch (at a cost of around 20 francs per movie).

The girl's favourite activity is playing outside with other children as well as Lego and reading books. She recently started music classes. In terms of quantity the kids are rather low users, they use ICT maybe once or twice a week, mostly more on weekends or holidays. Also at the grandfather's house they tend to watch videos much longer than when being with their parents. Despite the rather little screen time the girl is pretty dexterous at using the devices. Her favourite device is the tablet PC which, along with the smartphone, which she is capable of using without help, she also knows the code to unlock it (which she learned by watching). She only plays the games that her parents installed for her (contents are for example: caring for animals, memory game, etc.). These games she masters well and also teaches her little brother to play them. She also loves watching movie series such as *Zoe's Zauberschrank*, *Das kleine rote Traktörli*, etc. (short episodes of approx. 20 minutes), via YouTube. In addition, she watches DVDs on TV (which she cannot operate herself) or films on YouTube, which she uses with help of her parents. Sometimes in public or travelling situations the smartphone gets used as a way to keep the children occupied for a while. The girl's urge to use digital technologies varies from sometimes stronger to sometimes less.

Kids and parents enjoy activities together in general, mostly offline activities such as going skiing or on a bike tour. Also, the parents actively engage in their kids' media use and do digital activities together with them, which the kids enjoy. So, they join them playing video games or watch a movie all together from time to time. Mother and daughter also regularly play *Antolin* together on the computer, an online-based quiz that they also use in school in order to animate children to read books. After having read a book one can do a quiz about it and answer questions. The mother reports that using *Antolin* started quite some competition among the kids to read more. The father seems to be the one who mostly investigates new games and installs them on the devices.

Mediation. The parents are both very aware of their role model function, since they realized that the kids copy their behaviour and like using the same devices and apps as they do. Reflecting about a healthy handling of the kids' media use seems to be an ongoing process. In general, there are no explicit rules for online time, unless the demand of the kids make rules necessary.

Normally the kids can use the devices of the parents when they ask for it (on average not more than 20 minutes per day). There are weeks when they don't use digital media at all, for example when they are on holidays in the mountains or when they are playing outside a lot. For some weeks, when the girl had a phase of terrible table manners, the parents successfully implemented a regulation system for digital time from a family they are friendly with: During each meal, she could earn up to 5 points by eating properly. These points could be redeemed in online time for which she always picked to watch a TV series. In general, both kids are very interested in using digital media, especially the tablet PC, but generally prefer playing outside with other kids over playing with digital devices. The parents seem very considerate and aware of the risk of getting hooked on digital media and ending up spending more time with it than planned. In general, the parents seem to have a very trusting relationship with their children. If an argument comes up between the girl and a parent about how long the tablet PC can be used the father explained that they discuss it and agree by one of both giving in. The girl in general seems pretty understanding and responsible, also in regard of her four years younger brother. When he is around she only plays games that are also suitable for him.

Interview situation. Both the parents and children were present during the interview, which took place in the garden in a very open atmosphere. After a few minutes to warm up, both kids were very open, talkative and articulate, just like their parents, they were happy to talk about their ICT use and lives. The children seem very sociable and despite the age difference they also seem to have a very good relationship with each other, CH01g7 was very attentive and caring with her little brother during the interview.

Family 2

Family members

- Father, 45 years old, CH02f45, high digital user
- Mother, 33 years old, CH02m33, high digital user
- **Boy, 7 years old, just started 2nd primary school, CH02b7, high digital user**



Narrative

Living. The family lives in an apartment building, where the boy has his own room with a remarkable amount of toys. The parents' nationality is German. Father and son have lived in Switzerland for the past 3 years, the mother finished her studies in Germany and then moved to Switzerland as well. They have been living together in the current apartment for 5 months now.

“The internet is neither good nor bad, it's what we make out of it. I want my son to know what he is doing so he can decide in what way to use it.
(CH02f45)

Parents' work and daily routine. The father works in the health industry, the mother holds a tertiary degree and is currently looking for a job. The boy just started the second year of primary school, he spends every day from 8 – 12 at school and goes to afternoon child care (Hort) three days a week, the other two days his mother takes care of him.

Devices. The boy has his own TV set with Nintendo Wii U Console in his room and an iPod touch with apps and games on it. The family also has a TV (without digital TV plan) that is being used for watching DVDs from their big DVD collection. Each parent owns a smartphone. There is a family laptop that is mainly used by the father for work.

Applications and activities (online/offline). The mother doesn't have a Swiss phone plan yet so only uses her smart phone at home within Wi-Fi. She is very prone of video games (free smart phone apps such as *candy crush*) and mentioned to have experienced slight addiction problems and tending to spend too much time playing games. The father doesn't play any video games but is a big fan of vinyl records and owns and uses several record players and a mixing console. Both parents use digital media for daily communication, the mother also for online shopping, the father also work-related. Both

expressed their critical opinion towards publicly sharing information online and do not use social media platforms of any kind. In general, the parents see the use of digital media mainly as entertainment. Apps and games for their son are always free of charge and they do not need to fulfil a learning purpose.

CH02b7 loves using digital devices, his favourite is his iPod touch (without SIM card), that he got for his 7th birthday. He seems very mature for his age and is very skilled in using ICT such as the TV and the iPod. He uses the iPod several times a day to play video games and manages to play them up to high levels. The Wii and the big screen in his room have not been used much since he got the iPod. When showing his skills to the interviewer, CH02b7 was very much taken in by the game, he seemed to completely blank out what was happening around him. He does not use the internet on his own. Apart from digital activities he expresses himself creatively e.g. he was working on a comic book, for which he comes up with a story and draws the pictures. As favourite activities in general he mentioned swimming and drawing. He reported of a friend that he sometimes plays with. Apart from that he seems to be more with one or both of his parents and their friends. Father and son for example sometimes use the record player together. The boy is very aware of his ICT consumption and reports he sometimes has a rather strong urge to use digital media. He also mentioned his regret for his other (traditional) toys that he often neglects in favour of digital media.

Mediation. There are no particular rules or time restrictions for the boy's media use, he plays with his own devices when he wants to and when time allows it. For the devices that are not at his free disposal such as DVD player and computer he needs to ask his parents if he can use them. In general, the father allows more screen time than the mother does, he also seems more interested in engaging in the boy's media use.

Interview situation. When we arrived, the boy was in his room playing on the iPod. Both parents were present during the interview, which took place in the living room. The boy was a little shy at the beginning but quickly warmed up and seemed very communicative and for his age rather mature and eloquent. The parents reported afterwards that he was very happy about our visit and really enjoyed the one-on-one interview in his room with the second interviewer.

Family 3

Family members

- Father, 41 years old, CH03f41, medium digital user
- Mother, 38 years old, CH03m38, low digital user
- **Boy, 6 years old, CH03b6, kindergarten, low digital user**
- Girl, 5 years old, CH03g5, kindergarten, low digital user



Narrative

Living. The family lives in an apartment with a small garden. The two children share two rooms: one bedroom and one playroom. They used to have a room of their own but prefer to sleep in one room, since they are pretty close with each other. In addition, the atmosphere between mother and children seemed very warm and affectionate.

“We do not want to ban digital media but we want to teach proper handling. Somehow they have to learn it, but controlled.”(CH03m38)

Parents’ work and daily routine. The father works self-employed in the media industry (irregular hours depending on the order situation). The mother works 70% in education. The two children used to visit the same kindergarten, the boy is now about to start primary school. After kindergarten/school the children are taken care of by their mother. In addition, they have 3 children in care who stay at their place one afternoon a week and which the kids love very much.

Devices. The family owns a digital TV, a DVD player, a hi-fi system, 2 laptops, 2 MP3 players, an E-reader and both of the parents own a smartphone. The children have a cassette recorder in their room.

Applications and activities (online/offline). Both children have very little access to digital media, they do not use media daily, if they do its mostly 20 minutes of a DVD before dinnertime. The boy is very technologically-minded in general and much more than his younger sister he is very fascinated by digital media, even by devices he has never used or seen before. He has a strong urge to use digital devices, much more than he is allowed to. The only device they are allowed to use and operate themselves is an iPod (older generation with a little screen) and a cassette/CD player that they use to listen to Audiobooks. Both children love playing outside and with other

children, they enjoy reading and drawing. The boy is a huge football fan and plays actively. The mother reported that he reacts very sensitive to stories; meaning, he engages very strongly in any kind of story and gets agitated easily, also by stories read from a book. It happens sometimes that they had to turn off the TV/DVD because he got too agitated and scared and couldn't comfort himself anymore. Stories presented on screen (audiotively and visually) seem to amplify the agitating effect. The parents both use ICT for work and for daily communication, sometimes for online shopping and social media but are both rather low users in their private life.

Mediation. The boy's strong reaction to digital media is part of the reason for a pretty restrictive ICT allowance for the children. Also in the parents' lives digital media doesn't play a significant role so they seem to have no difficulties functioning as role models. They see no advantage in early exposure such as learning possibilities through digital media use (other than media competence itself), so they try to keep their children's' lives with very little contact to digital media as long as possible.

Interview situation. The interview took place at the kitchen table, with the mother and the two children. The father was not present during the interview. At first the children were very shy and didn't say much, which changed in the one-on-one interview in their room where they happily shared their thoughts.

Family 4

Family members

- Father, 52 years old, CH04f52, medium digital user
- Mother, 36 years old, CH04m36, low digital user
- Girl, 8 years old, CH04g8, just started 3rd primary school, medium digital user
- **Girl, 7 years old, CH04g7, just started 1st primary school, medium digital user**
- Girl, 4 years old, CH04g4, kindergarten, medium digital user



Narrative

Living. The family lives in an apartment building. The three girls share a room all together, which they seem to enjoy even though the room is rather small for three kids.

Parents' work and daily routine.

The father is currently establishing his self-employment in the service industry and therefore works irregular hours. The mother works 60% in education. On a typical day the two older girls go to school from 8 - 12, the younger girl goes to kindergarten. They eat together at home or at the nanny's place where they stay 2 afternoons per week. In total the nanny hosts up to 8 kids per day. The older girls are at school two/three afternoons per week.

Devices. The family owns a (not digital) TV, DVD player, hi-fi system, 2 PCs and one laptop. The father owns an iPad and a smartphone, the mother a smartphone. The only device the children have in their room is a kids camera with a small screen that takes pictures, videos and has a few games on it.

Applications and activities (online/offline). Both father and mother use a computer for work (mostly for writing emails or invoices), neither of them is active in social media. The father likes to play strategic games (e.g. *hay day*) mostly on his iPad and sometimes on his smartphone or laptop. He also takes time to complete tasks in a game that have a given time frame or due date. He sometimes also plays with the girls or explains them how certain games

“I think digital media could take away something from family life when given unlimited access to. (...) Because they find them very attractive and communication with each other and play time would come up short.”
(CH04m38)

work. He rather talks over the phone than using any kind of messenger. The mother doesn't game a lot, she rather watches TV, mostly in combination with housework. She has a few game apps on her smartphone such as Sudoku, solitaire, etc. She also has a maths game on it that she installed because the older girl had a bit of trouble with maths in school, other than that both parents don't have any special kids apps on their phones so the girls don't get too tempted. The mother uses messenger for daily communication. All the girls enjoy playing games (e.g. *hay day*, *the singing monsters*, *Albert*) on the tablet PC or iPhone or watching DVDs (*Disney Princesses*, *Lotta aus der Krachmacherstrasse*, etc.). Also, they enjoy taking photos or videos that they like to look at after. On their kids tablet PC they play some very basic games, like finding the error in a picture etc., therefore the kids tablet PC doesn't get used too much. The focus girl is more oriented towards digital devices than her sisters, she would like to have her own iPad. In general they all prefer playing with others (e.g. dressing up and playing princesses, Lego, etc.) over playing with digital devices. They also read a lot of books and comics, the focus girl especially loves to dance. The two older girls have music lessons once a week. Mostly the three girls play together or with other kids, the mother does not function as play partner, the father only in regard to showing how a game works.

Mediation. There have not been any explicit rules in place, the kids get controlled use of the devices (mostly iPad or DVD player) when there is time for it and they ask for it. About every other time they ask for it, they get allowance to play with it for approx. 20-30 minutes (rather alone than together with their siblings), in general about 2-3 times a week. The mother reports there are weeks when they don't use the iPad or DVD player at all, also during the week there is almost no time for ICT use. In the evenings, during holidays and on the weekends, they like to watch a DVD for about 20 minutes between dinner and going to bed. Since there were quite a few discussions about watching TV and DVDs the parents once decided that TV and DVDs only get used on the weekends or during holidays. The mother seems very considerate and puts effort in controlling media use as a small, not dominant part of the kids' lives. Due to her report the father handles media use less rigid, under his supervision the girls are allowed to use digital devices longer than with her. So if he is not currently using his iPad, he is ok with the kids using it. He also lets them execute short tasks in the games that he plays (such as picking up money in *hay day*). The father also decides about the games on the iPad and downloads them.

Interview situation. The interview took place at the dining table in the kitchen and in the kids' room with the mother and all the three girls. The

children were pretty shy at first, warmed up after about 10 minutes and were then very happy to talk about and to show their digital activities. The oldest of the three girls is the only one who can already fluently read and write. She mostly took the lead in answering questions (also for her siblings) and showing activities on the devices. The focus girl mainly played creative learning-focused painting or maths games on the iPad. The youngest was pretty advanced for her age, she was happy to demonstrate her abilities in writing the ABC and calculating numbers from 1 to 10.

Family 5

Family members

- Mother, 42 years old, CH05m42, medium digital user
- **Boy, 6 years old, CH05b6, kindergarten, high digital user**



Narrative

Living. Mother and son live in a modern apartment of higher standard. The boy has his own room with plenty of toys that is mostly used as a playroom since he is sleeping in his mother's bed. The boy's room is not really separated with doors, so the kitchen/dining area and his room are one big space. They have close contact to the grandfather (mother's side) and they visit him often in summer or on holidays, the grandfather also spends several weeks with them in winter.

“What is so fascinating about the internet? Because there is always something new coming up, so you keep endlessly going on and on in this medium.”
(CH05m42)

Parents' work and daily routine. The mother raises the boy alone, the contact to the father (44) is loose, he used to see his son every second weekend for a few hours, but at the moment contact is broken off completely. The mother is very committed to her work in the health industry and works four full days a week. The boy visits school from 8 - 12 and goes to an afternoon day care after, where he also eats lunch. At 6pm she picks him up from day care. During the week, the mother's time is mostly dedicated to her job, sometimes she has to work long hours and a babysitter picks up the boy from day care.

Devices. The family owns several digital devices, including a TV, DVD player, Playstation, Wii Console etc. The mother owns a smartphone. The boy has his own iPad with free access to it, he got it for his birthday from his grandfather.

Applications and activities (online/offline). The iPad is mostly the first thing the boy uses in the morning and he uses it whenever he is at home for several hours a day. When he plays with traditional toys, he often simultaneously watches YouTube videos on his tablet PC. He also can watch TV or DVDs whenever he wants and if there is time. In terms of quantity he

is the heaviest user in the sample. The mother states that she rarely has time to use digital devices with her son, but more likely sees them as a practical way to keep him occupied during the time that she needs to do housework, cook, etc. She states that she would like to spend more time together with her son, and rather with outdoor activities. The Wii was intentionally bought so both mother and son could make use of it together and individually but so far they played with it only a couple of times. On his iPad the boy often watches videos on YouTube (such as *Lego police station* and others) and plays video games (such as *Soccer world cup*), sometimes also with violent content (such as shooter games). His favourite video game is *Starwars*, “because they have such cool weapons”. He doesn’t listen to Audiobooks but he enjoys watching TV. He knows how to use the tablet PC and the DVD player by himself, with everything else the mother helps.

Even though he uses ICT every day, he stated that he likes the most to play outside with other children or also with his mom, also he likes Lego and Playmobil a lot. His mother initiated that he goes to “music and dance class” once a week to foster his music skills, but he said he doesn’t enjoy it so much.

Mediation. ICT use is not really regulated. The mother is aware that her son spends too much time in front of digital devices, but due to her little time capacities, ICT devices are part of the child care concept. She reported of situations when she took his iPad away because he repeatedly wasn’t listening to what she was saying while playing a game. Then the boy would beg her to give it back. The mother reports that it also happened that he then watched TV instead until she gave him the tablet PC back after a short while.

Interview situation. At the beginning of our visit the boy was playing hide and seek with us and the mother had to convince him to sit down with us at the table. The ice-breaking activity did a good job and the boy was happy to show the interviewer his room. He is a very active child, got bored with the interview questions pretty quickly and had a hard time to concentrate on the conversation and simply wanted to play with the interviewer. Sometimes he got carried away with playing and it was quite a challenge to get him focussed again, mostly this worked by making use of Playmobil figures to ask him the questions.

Family 6

Family members

- Mother, 33 years old, CH06m33, medium digital user
- **Girl, 7 years old, CH06g7, just started 1st primary school, low digital user**
- Family friend/flat mate (male), 44 years old, CH06fm44, high digital user (digital mediator)



Narrative

Living. Mother and daughter live in an apartment for communal living with several other parents and their children (2, ?, ?, 7 years). The parents are separated, but get along well. The girl spends one night per week and every second weekend with her father. The girl has a room on her own, which was very tidy. With the other kids living in the apartment she has a pretty close relationship, especially with one girl of the same age. She is generous with sharing her toys. CH06fm44 who also lives in the apartment with his 2-year-old son functions as digital mediator for the girl.

It is not like I sat down and explicitly said «we need to talk about internet safety», I think it is more about awareness and enlightenment in general and I thought it was a very beautiful situation, the two of us talking openly and constructively about this topic. (CH06m33)

Parents' work and daily routine. The mother is currently studying for her master's degree and working part-time in education, which makes her pretty absorbed during the week. The girl visits first grade of elementary school every morning from 8 - 12 and two afternoons per week, after school she spends time in an afternoon child care until about 6pm. A year ago the parents had the child care split 50/50, which now doesn't work anymore due to the father's further education and irregular working hours. The mother explains that with the current child care situation she doesn't get enough time for herself, but also regrets that her daughter is often taken care of externally and that she tries to take her out of child care for one afternoon a week if her time allows it. The flat mate works self-employed in the media industry and is a high user of digital devices as part of his job.

Devices. The household in general does not have a lot of devices, there is no TV but a commonly shared piano. The mother owns a smartphone, a laptop and a hi-fi system, the girl owns a digital camera, a CD player and an interactive kids microphone. The father owns a digital TV. Due to his profession CH06fm44 owns and works with quite a few devices, such as laptop, desktop computer, smartphone, tablet PC.

Applications and activities (online/offline). The mother values her smartphone and describes it as “sanctuary” that she doesn’t like to give away to her daughter to use. She mostly uses it in practical terms, for communication, news and other services. She has very little game apps on her phone, such as a painting app, that the daughter gets to use sometimes. Since the mother is not very interested in digital media she is happy to have CH06fm44 giving her daughter an insight into digital media. She also trusts his aesthetical standards he demands of apps and games. There are a few, carefully selected and aesthetically pleasing games they sometimes play together on his laptop or iPad, such as *Samorost* and *Monument valley*. The girl is interested in digital media but does not have a strong urge to use them. The mostly used device is her digital camera. She loves taking photos and has developed a special interest in making and watching videos, mostly of everyday things such as the apartment-life. The girl rarely gets to play with the mother’s smartphone, if so, then mostly while waiting or in public situation to keep her occupied for a few minutes. She enjoys playing games with CH06fm44 on the iPad and also on the computer. Game episodes with him are about 30 minutes long, in irregular frequency, about every two weeks. On the iPad she enjoys “tapping” on the screen the most, more than the actual game. With her father she regularly watches TV, such as wildlife documentaries or children’s channel. Also she likes to listen to her favourite music on the father’s iPod. Mother and daughter sometimes use google or YouTube together to find information or videos that interest her, these are e.g. videos of girls who play the drums. They are always online together and the mother types the words. Also they find inspiration for play online, like stencils for painting or crafting. Sometimes the girl gets to use *WhatsApp* in presence of her mother to write e.g. her godmother and sends her emoticons. The girl’s range of skills is therefore rather limited, but she is generally dexterous at handling the devices and intuitively switches between touch screen and mouse/keyboard.

The girl is very active, she loves to listen to music, to dance and sing and she also takes music lessons. She enjoys dressing up and/or doing theatre plays at home. She is a very imaginative child and loves to think of and paint her own fairy tales. She enjoys playing with others but also needs and demands

her alone time and then plays or paints alone in her room. The mother engages in all sorts of activities with her daughter and they explore the city together. They go to flea markets, the theatre, the movies and cultural events. Moreover, they like outdoor activities such as going to the forest, which begins right behind their house. They also love to read books together. They seem to have a very trusting and close relationship, an honest communication and time for exchanging thoughts is highly valued.

Mediation. The mother has clear ideas of what and how much digital media is good for her daughter and she is pretty restrictive with screen time. She communicates with the daughter but decides on her own what applications she finds suitable. The girl accepts and sticks to the rules and given time frames without much protest.

Interview situation. The interview took place at the living room table with mother, daughter and the flat mate. A 7-year-old girl who also lives in the apartment was present on and off during the interview. CH06g7 was very interested and curious about the interview, after a while she got fidgety and showed the interviewer her acrobatic skills.

Family 7

Family members

- Mother, 36 years old, CH07m36, low digital user
- Boy, 11 years old, CH07b11, just started 2nd secondary school, high digital user
- Boy, 9 years old, CH07b9, just started 3rd primary school, medium digital user
- **Girl, 6 years old, CH07g6, just started 1st primary school, low digital user**



Narrative

Living. The family lives in an apartment building. The parents with migration background are separated and the cooperation seems difficult, youth services are involved. The mother had raised the children alone for the past two years, now the father takes care of the two younger children one day a week, of the oldest son more often. The girl shares a room with her 9-year-old brother, the oldest son has his own room. He has diagnosed ADHD and there has been aggressive behaviour against the mother and both his siblings, which is why the living situation has recently been changed. The oldest son now spends 3 days a week at his father's place, which seems to reduce tension for all the children and the mother. The girl shows signs of fear towards her brother, she hid behind the interviewer when her older brother entered the room. The mother is a warm and kind person who seems partly overwhelmed alone with her three children, given the special situation due to the oldest son's hyperactivity and aggression.

“I have all the devices with me. I only give it to them when they ask me or when I think it is time to give it to them, for example when I see they have learned for school.” (CH07m36)

Parents' work and daily routine. The mother used to work in the health industry but doesn't work at the moment. The occupation of the father is unknown. On a typical day, the children go to school all morning. The oldest son goes to a nanny for lunch four days a week and then returns to school for afternoon classes or comes home to the family. The focus girl eats at home with her mother and her brother and stays with her in the afternoons. One

afternoon per week she spends with her godmother, where she is allowed to watch DVDs sometimes.

Devices. In the household are a (digital) TV, a PC, a tablet PC, a kids tablet and the mother's smartphone present. The oldest son owns a PC, the younger son a laptop, which were initially acquired for school purposes, but they both are not being used very often. Also there is a kids (*Hello kitty*) tablet. The girl does not have any devices on her own.

Applications and activities (online/offline). The kids have a pecking order according to their age hierarchy, the girl seems to have accepted her inferior position amongst the siblings. She loves to sit in the corner of the couch under a blanket watching TV, it seems to be her comfort zone where she finds some quiet. She has a very strong urge to use the TV and would love to get way more screen time than she does.

Mediation. The mother wants to provide the kids with a good (media) education, but seems overwhelmed with it, so restriction is the mediation of choice. She keeps all the mobile devices including remote controls – apart from the computers – locked away and hands them out as a reward when the children have been good. For a more differentiated mediation the circumstances seem too challenging. She tries to give media allowance scaled to the kids' age, in terms of variation and duration. The focus child is the youngest and gets very little screen time, at max. watching TV now and then. The brothers also get to use the tablet PC, but they wouldn't share it with their little sister. Apart from the TV, the girl sometimes gets to play on the kids tablet, which has very limited games on it. Her digital skills are therefore very little, she knows how to turn on the TV and find her favourite kids channels.

Interview situation. The interview started with all children and the mother present in the living room. The oldest son stayed in the room during the interview with the mother while the younger kids went to their room with the second interviewer. It was probably the liveliest interview of all, since all the kids were roaming around between rooms at some point. The oldest son's behaviour while he was in the kids room caused some agitation. He bullied his little brother and sister, which seems to happen on a daily basis, all the children seemed pretty agitated during the entire interview situation. All of them are bilingual and sometimes spoke to each other in their mother tongue.

Family 8

Family members

- Father, 50 years old, CH08f50, high digital user
- Mother, 39 years old, CH08m39, high digital user
- **Boy, 7 years old, CH08b6, just started 1st primary school, medium digital user**



Narrative

Living. The family lives in an apartment building where the boy has his own room.

Parents' work and daily routine.

The father works in a leading position in the media industry the mother has a financial background and recently started her own business in the food industry.

During the day the mother takes care of their son, drops him off and picks him up from school and sports classes. The boy just started the first year of primary school. He goes to a private school with much smaller class sizes than public

schools where he spends every day from 8 – 12 and two afternoons. He has extracurricular sports classes 4 times a week. In the evenings and on the weekends, the parents share the educational responsibilities equally.

Devices. The family owns an Apple TV, 3 laptops, a hi-fi system and both parents have a smartphone. The boy has his own CD player that he uses to listen to Audiobooks. Also he owns a kids tablet that his father accidentally bought in an English version, which is why the boy never really used it much. He practically uses all devices in the household.

Applications and use (online/offline). Both parents are considerate but quite active digital users. Both use devices for work and privately for communication and online shopping. The father has a few games he likes to play for fun, mostly aesthetically pleasing apps, the mother states she very rarely plays video games. She actively uses social media (*Facebook*, *Instagram*) to establish and promote her business, watches tutorials and actively blogs. The boy enjoys digital activities, like watching episodes on

With reading and writing, the possibilities and range of use for new media explodes. As parents it is important to take this into account, so adjust content less to age but more to the developmental stage of the child. (CH08f50)

YouTube (e.g. *Lucky Luke*), he knows how to operate the TV and masters navigating the Apple TV surface very well. He is also adept at handling the iPhone on which he plays games or maths or word apps. He is very articulate and can explain exactly how a game (e.g. *Alto*) works. His father initiated to go to a kids programming workshop where they learned basic programming of robot moves. The boy got very excited about it and learned quickly how to follow the instruction on his own. He does not have a very strong urge to use digital technologies.

The boy likes being social with other children and is well integrated. His favourite activities apart from Playmobil and books are especially sports. He engages in sporting activities several times a week, which he seems to master very well. He takes various different sports classes and also likes doing sporting activities together with his parents such as skiing or water-skiing on the lake of Zurich, where they have a boat. Also he takes music lessons, which he enjoys.

Mediation. There are explicit rules for media use: if the boy has done sports that day, he is allowed to use digital media. In terms of duration there are no fix rules, depending on what he engages in, he can stay on the device longer or less long. On average about 20 minutes a day, some days less some days longer, also on the weekends, on holidays or in travel situations. His parents, mostly his father, decides which games he gets to play, mostly apps with learning purpose or a few selected jump and run games (e.g. *Alto*, an aesthetically pleasing snowboard game, that his father plays too). He finds inspiration for apps for example in the newspaper. The boy in general seems to accept the parents' rules very well and sometimes also ends digital activities by himself.

Interview situation. The interview took place in the living room with mother, father and son, who was a little shy at first and in general seems to be a rather calm child. He was very cooperative during the interview and happy to show his skills.

3. Findings

3.1 How do children under the age of 8 engage with new (online) technologies?

Which technologies. Most children grow up in media rich households, where the families own commonly more than eight digital devices. Having a TV is still popular, although some families actively reduce the availability of ICT at home. Two of the families actively decided against having a TV (CH06) or against having a TV program and only use the screen to watch DVDs (CH02). DVD players are a very common device. Some children are allowed to watch mostly educational kids programs and sometimes animation series. Several parents reported they completely switched to DVDs for the kids, since deciding about what and how long to watch had caused arguments in the past. When watching a TV program it seems to be harder for children to find an end in the continuity of never ending new stories.

DVDs make quality control easier for parents, since most of them like to know what the children are watching but don't want to watch with them every time. Also with DVDs parents could avoid ads completely, whose content they can't regulate.

The use of a DVD player or TV seems complicated for children to manage on their own, since two devices with remote controls have to be handled together, mostly they do not use them on their own but parents set it up. Children who are used to watch TV more often (like CH07g6 whose main digital activity is watching TV) or DVD (like CH05b6) know how to make the devices work on their own.

Most commonly used on their own are devices on which they can play Audiobooks, such as CD player, MP3 player, iPod. These devices are usually at their disposal and can be used by the kids anytime, parents only interrupt when the use gets rampant.

The most common device in families is the smartphone (in this sample every parent owned at least one smartphone). Children under 8 did not own a smartphone themselves, also their older siblings did not own one (yet). One mother reported that her 11-year-old son, despite his urgent wish to get one, was the only one in his class who did not own a smartphone. As he had reported to his mother, this made him an outsider amongst his class mates. *(Quote Parent: "It is such a pride for the children. He tells other children that he owns a phone and a tablet (even though that's not true), otherwise he is*

always the outcast. And he is always the outcast, he doesn't have any friends in school. And he thinks if he doesn't look cool and doesn't have a smartphone...").

Every household owns at least one, mostly several computers or laptops. About half the families own a tablet PC, a device which seems especially attractive for young children. CD players or radios are not mentioned much by parents, but every family has one or more devices to play music on.

Fix or mobile game consoles are rare in families, only two families own a console (Wii /Wii U) which is hardly ever used by the children and /or the family together.

Children in general do not own their own digital devices. Common devices in kids' rooms are kids tablets with a few limited games on them or CD players, which are mostly used to listen to Audiobooks.



Figure. Kids' favourite online technologies as told by children/parents in the card game

Favourite (online) technologies. Devices with a touch screen are enjoyed the most by children. The directness of touch navigation and the use of apps seem to complement their playfulness and limited literacy skills at that age. The tablet PC is the favourite device for children, the larger screen makes it even more attractive than the smartphone. (*Quote Child: "Because you can play so many cool games on it and I find the biggest fun is to just tap around*

on the screen. For me it is not so much about the game but just tapping on it. There is this dwarf game and I basically tap every two seconds so the dwarf goes back to bed. Cause then I can watch what he dreams, there comes a little cloud and you can watch his dreams”). For all other devices, the function seems to matter more than the device itself. Watching videos or films (on TV, YouTube or DVD) is the most desired passive digital activity of children. For them it doesn't matter if the films are presented via TV or computer screen, what seems more interesting is the fact that TV programs as well as videos on YouTube are perceived as endless continuity, after every episode the next one gets automatically “delivered” to them, it always stays exciting to see what comes next. *(Quote parent: “Sometimes he is not able to stop, but I think we all know this feeling, the craving to watch another episode and another.”)*

Digital activities. It is important to distinguish between offline activities such as traditional play, digital but offline activities such as listening to CDs or Audiobooks and online activities. Actual online activities are very limited, the majority of children under 8 are not online by themselves. None of the children we interviewed played online games (hosted on a website) by themselves, a few did so together with their fathers. Five children were allowed to browse YouTube to find videos to watch. Parents reported they would mostly stay with them to watch them get started and then leave them to themselves but stay within hearing so they could monitor what was playing on the device. In school, the kids are allowed to use the computer/internet to find information on their school projects. Moreover, the use of an online book quiz named “Antolin” is commonly fostered in primary school. Elder siblings were allowed to use google to look up information on their own, which is an activity fostered in primary schools as well.

On another note, children under 8 are online consumers only. They watch/search/play online content but do not produce any yet. CH08b7 is an exception, he enthusiastically engages in basic programming on lightbot.com, initiated by his father, who is a very interested and keen media user.

Games/Apps. In general, children prefer applications that are fun and entertaining. Their favourite contents on digital media correspond with their favourite contents of traditional play. According to gender, girls typically play games that contain caring for animals or babies, princesses, make-up or painting and boys typically engage in action games with a more competitive edge such as racing, battling, jump & run.

Learning apps (e.g. to foster reading/writing/logic) the children did not mention on their own during the interview, but reported them on request.

Most children who were allowed to play games played one or more learning apps, partly stimulated by their parents. Regardless of simply for fun or with learning character, games with a competitive edge and a possibility to win points or to be right or wrong seem to be especially fascinating for children. They got really excited when demonstrating the apps to the interviewer and got very ambitious to show that they could finish the level (*Quote Child: "Look, I'm already in level 3"*).

Films/Movies. Children seem to prefer stories about other children who are going on adventures or playing little pranks, who they seem to identify themselves with and look up to. Also gender related differences are noted, girls also enjoy videos about princesses (such as Disney characters) and strong girl characters, boys also stories about some kind of heroic characters, like (Lego) Police stories.

How. Kids enjoy watching/listening the same stories repeatedly, also since new stories sometimes tend to excite them to a level that they find uncomfortable or even scary. Many parents reported that their kids are listening to the same Audiobook over and over again. Games on the other hand wear themselves off quicker. Children seem to like them for their competitive edge and find them interesting as long as they can prove themselves, can achieve higher levels, win more points, etc.

When and how often. During school time children have quite saturated daily schedules with no or only a small time window to use digital media. Besides school, day care and homework most kids have extracurricular activities such as sport or music classes. In almost all families mornings and daytime is kept completely digital media free. During the free time in the late afternoon, digital activities compete with traditional play. Weekends and holidays are reported as times of higher media consumption than during the week.

Most parents allow their children to use ICT for a certain amount of time (e.g. 20 minutes), since the children do not have a realistic concept of time yet, they are mostly surprised when asked to stop. Instead of breaking up the play exactly after the given time, if possible most parents try to find a logical moment to end their activity, e.g. at the end of a video episode or a game level.

Online/offline balance. In general, traditional activities play an important role in Swiss families. Most children play sports or music instruments, play outside with other children and engage with other family members. Digital media is just another part of their everyday lives. In international comparison, Swiss children under 8 are rather low users with modest screen

time. During the week, there is rarely time for media use, if there is time, media use happens in the evening. Most families reported a film of 20 minutes when dinner is being prepared. CH02b7 who also has free access to the ICT in his room (iPod touch, DVD player, Wii) has more screen time per week than average but autonomously keeps his online and offline activities in balance. (*Quote child: "When I think about my traditional toys lying around in the corner (when I play on my iPod), then I imagine them being really sad. So then I play with them too."*). One boy was an exception, he uses his tablet PC almost constantly when he is at home, up to three hours on a weekday.

Family activity. In general, children enjoy play time with their parents, as well offline as online. Kids like using an app or an online game together with a parent (CH01: *Antolin* (web app.), *horse world* (smartphone); CH04: *hay day* (smartphone); CH08: Snowboard game *Alto* (smartphone), *lightbot.com* (web app.). Some of the children, especially the children growing up without siblings, would have liked to have more play time together, which was not possible due to the parents' lack of time or interest (*Quote child: "My mom is always so tired, so I play on my tablet"; Quote Parent: "The video games he plays are not challenging for me, I play different games, so no, we do not play them together. (...) When he watches a kids show that I am not interested in but sit next to him and do something on my phone he doesn't like it."*). Sometimes parents also play games with their children that they find annoying, just because their kid loves the time together. (*Quote parent: "The game is so stupid but I do it again and again, cause she loves it."*).

Watching a movie together, mostly on the weekend or in the evening, is a common activity for the whole family, which children seem to find relaxing and enjoyable. When watching a film or series they don't know, some children prefer to have a parent (mostly the mother) present to give them comfort in situations they find scary.

With friends. For children under eight, digital media doesn't seem to be relevant for interacting with others. Since they are mainly offline and their literacy skills are still very limited, ICT is not of interest for communication and/or playing online games with other real players yet. Playing a video game with another child on one device means one child plays and the other one watches, which the kids in the observing role report as rather boring. Watching a film together does happen, but mostly with siblings in short time slots that allow parents to prepare dinner etc. When being with their friends interaction seems to be the most important part for children. So they want to play traditionally or go to the playground together, which was also one of the most common answer when the kids were asked what they would love to do

the most out of all possibilities (online and offline). Children mostly would choose an activity with others or a non-digital hobby instead of digital media.



Figure. Kids' favourite online and offline activities in comparison as told by children/parents in the card game.

Digital Skills. Due to their modest exposure to digital media, young children's skills in general are rather low in international comparison. Children learn a lot about the use of digital media by seeing their parents use them. They seem to get an understanding of digital media as devices to stay in touch with people or as a source of knowledge (when stumbling upon something unknown, nearly all the children mentioned "googling it" as the way to find out more about it). However, since they are not allowed to be online yet and due to their lack of reading and writing competencies, they do not know how to use google by themselves. Most of the parents reported that the kids were able to unlock the parents' smartphone or computer, just by having watched them do it. This also applies to handling the devices such as navigating through the apps, where to find what they were looking for, how to open up an app such as their favourite game or the weather app, etc.

Quote Interviewer: "So how did you learn how to use the iPad?"

Child: "We just watched how he did it and then it was like ah, ok, here you got to do this and there.. ah I see".

It seems that tablet PCs and smartphones with a touch screen are more intuitively to operate for young children than devices operated with remote controls or a keyboard, regardless if the child is able to read and write yet or not. When it comes to the use of more complex applications or processes, parents are the most common source of knowledge. Most commonly, parents (mostly the fathers were more interested in this) are the ones to pick and download new apps and they would initially explain new games and

demonstrate how it is done. They would also delete apps, which didn't meet their quality criteria regardless of the child's opinion.

In families with more than one child, younger siblings would mostly benefit from the knowledge of their older siblings, who would show them how it is done or tell them what they need to do. Due to practical reasons younger siblings mostly get in touch with digital media at much younger age than their older sibling. When playing with digital media together, older siblings seem to happily restrict their use to games that are suitable for their younger sibling as well, which was observed for children who have a close, respectful relationship.

Fathers reported in general a stronger affinity for media than mothers and also seem more interested in engaging in the digital mediation of their children in terms of teaching and exploring. In families where a father was present, regardless of living together or not, the children gained most of their digital knowledge from them. Highly involved mothers were more critical of content choice and more restrictive in terms of screen time than fathers. Mothers with lower involvement seemed less active in mediating the quality and/or quantity of their child's media use.

In the two cases of high users the kids could pick out the apps themselves and play the ones they found enjoyable, without intervention of the parents. In these cases the children would find out how the game works by themselves, without guidance of their parents. In one family the child care concept is partly reliant on ICT devices, hence the mother seemed to be less critical to duration of screen time and the quality of content.

Online and offline practices. Children's online and offline practices influence each other. Most commonly traditional games inspire the use of online games, so they play the same traditional games in a digital version, or watch videos of stories they know from books. They also get inspired for traditional play by digital media, like media induced role play or finding crafting ideas online. (*Quote Interviewer: "So how do you prefer playing memory, as real card game or on the iPad?" Child: "iPad!"*)

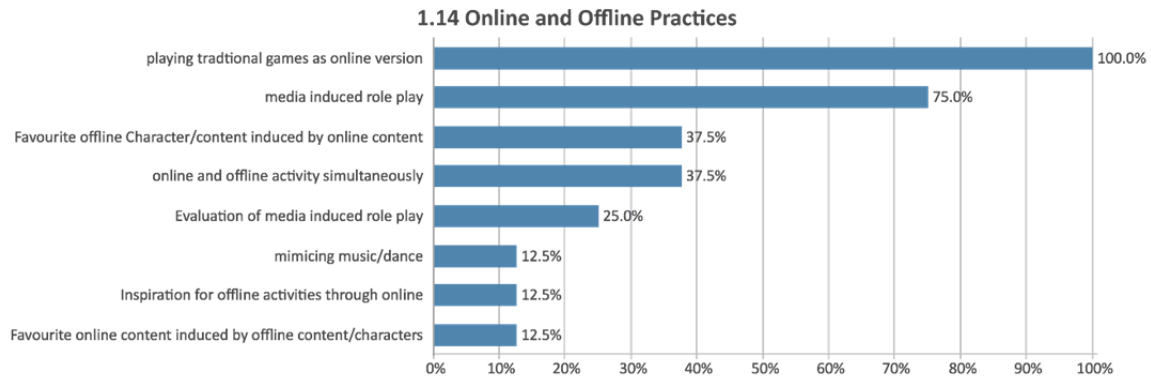


Figure. Reciprocity of online and offline practices.

3.2 How are new (online) technologies perceived by the different family members?

Children's perceptions. Kids are fascinated by all kinds of known and unknown ICT devices and want to own them, even if they have no clear idea of what they would actually use them for. Some children are more affine with a stronger urge to use digital media than others, regardless of their screen time allowance. Low users, like CH03b6 and CH07g6, as well as medium user CH04g7 and heavy user CH05b6 seemed to perceive ICT as very attractive and are keen to use and explore them more. Several children expressed (to the interviewers or their parents) the strong wish to have a tablet PC of their own with unlimited access.

The children have not reported any uncomfortable experiences while being online so far, since none of them uses the internet completely unattended. One mother reported that she sometimes hears her son watching movies that are not suitable for his age (shooting scenes, etc.), which show up in the sidebar when browsing YouTube. He didn't recall this when asked if he remembered any scary/risky situations when he was online.

The children themselves have no or little imagination of what kind of risks they could encounter with the use of digital (online) media. *(Quote Parent: "I think he understood that he should hit "pause" when he sees something that scares him. But I don't think he is aware that there are risks on the internet. Not only in the sense that he realizes that something scares him while he's watching it but also threats related to internet use. So we as parents really put importance on never uploading photos in which you can recognize his face.")*

Some children were afraid that the device could fall and break or not work

anymore due to a handling error. They are aware that ICT are expensive goods and are afraid, that if broken, the parents wouldn't or couldn't replace it. Children do have an understanding that a personal digital device such as a smartphone or tablet PC needs to be protected, for example the children would ask the interviewer to look away when they were typing in the password to unlock the screen.

Some parents reported that their child would get scared of some contents in children stories (such as an animal being left behind, mean characters like in Disney movies, etc.). It seems that stories told via digital media (TV, Audiobook) have a higher potential to scare children than the same stories presented non-digitally (such as in books/comics), possibly due to the stimulation of multiple senses. The same content, like for example shooting at each other, is fine for kids when playing with figurines, whereas the real scene on TV would scare them.

Higher use of digital media seems to cause physical problems. Both high users reported neck pain or headache after longer sessions of use. One also could imagine having withdrawal symptoms without access to his devices.

(Quote child: "If I couldn't play anymore I think I would have a weird feeling".)

Parents perceive digital technologies as part of everyday life and the world we live in. They think it is important for their kids to learn how to use them in order to sustain in our digitalized world. *(Quote parent: "New media is around and important and they have their purpose. He should be able to handle them and learn and develop. But I think they should not become a priority in life, regardless which kind of media.")*

The perception of ICT's relevance in regard to its learning possibilities seems to be individual from family to family. Some parents perceive digital devices mainly as another form of entertainment and do not see the need for applications to have an educational purpose and let their child pick the apps that he or she enjoys the most. Other parents put more emphasis on the educational purpose of apps and regulate the used apps with no or little say of the child. Also perceptions differ in terms of what is considered an "intelligent" app, for example one parent thought *Lego world* was rather "*stupid*", whereas another parent considered it a "*good*" app.

Parents are well aware of risks related to digital media use such as addiction or neglecting traditional activities and find it important to teach their children a healthy use with ICT. Also with regard to the time when they are older and have their own device like a smartphone, parents assume mediation will have to be discussed more profoundly, since being online takes the necessity for identity protection to a whole new level.

3.3 How do parents manage their younger children's use of (online) technologies?

Parents feel the need to mediate ICT use in terms of duration and to make sure the content suits their age and capabilities, what this means in practical terms differs from family to family. Whereas some parents introduce their kids rather early to digital media in order for them to learn as soon as possible, others want to keep their children's lives without media as long as possible, since they believe children will easily develop the same skills when starting later. (*Quote parent: "It is clear to him, he doesn't get the smartphone to play with, we don't play with it either. We try to be role models like that, so we write messages with it and take photos, they also can look at them, we don't do it secretly. We are grown-ups, we have a mobile phone, but we don't twiddle with it all the time."*)

Child safety locks are mostly not in place, meaning most devices are theoretically accessible by the children. In general, parents trust their children and rely on their honest cooperation in regard to media use, so they would not use the devices without asking.

Usually the parents decide which games or apps are allowed to use, also because the children generally do not have the skills to find and download apps themselves. Most parents try out new apps together with the children and also delete them if they do not find them appropriate. Other parent's quality control is less restrictive. One parent reported the son could choose the apps himself and that he is allowed to play with what he finds interesting. According to the parent there has never been the case that the child played something not suitable for him.

Families do not have a lot of explicit rules in place, mostly ICT use works on a children-ask-policy if they want to use a digital device such as the tablet PC or smartphone. Since most parents report that their children are well balanced between online and offline activities, this approach works fine most of the time. If there is time and the parents feel like the use is not getting out of hand they let them use the devices. Parents report that on weekdays there is mostly no time to use digital devices. In regard to watching TV and DVD some parents report that there was the need for more explicit rules, since the discussions about what and how long to watch had caused problems in the past. In one family the parents created the rule that TV and DVD is only allowed on the weekend and during holidays, which the children didn't like at

first but in general has relaxed the family atmosphere on weekdays. Another Mother has very explicit rules in place for the use of digital media. Due to the uncontrolled agitation of her oldest son the dynamics in the family are rather unstable. In order to keep her children's media use controlled the mother uses rather rigid methods such as taking the TV into her room or hiding the remote control.

In two families digital media is used as a reward, respectively banned as a punishment. In one family the children are allowed to watch TV or play on the tablet PC *"only if they have been good"*. The punishment of no screen time is being used individually, so it often happens that only CH07b11 is banned from digital activities, such as the movie night the family has every second week. CH08b7 is allowed to use ICT when he has done sports that day. He is a very active kid and goes to different sports classes four days a week.

Grandparents are in general less restrictive in terms of media use, but also don't own as many devices that are interesting for children. Parents report that their children probably watch more TV when staying at their grandparents' house than at home.

3.4 What role do these new (online) technologies play in the children's and parents' lives?

Importance for parents. Many parents use digital devices on a daily basis, both for work and leisure purposes. In their everyday life they mainly appreciate the practicality of new media as a quick source for all kinds of news, communication and services, mostly bundled in one device: the smartphone. Some parents also play games on their smartphone, laptop or tablet PC for entertainment, but for the majority of parents games are not seen as a significant part in their personal lives. (*Quote parent: "I don't think digital media in general makes parenting harder, but being a role model with media use is what I find hard sometimes."*; *Quote parent: "Digital media influences us for sure, it is part of everyday life, we live in this kind of world. And it kind of doesn't work any other way. I think the trickiest part as parents is to not get deluded by it, to show the children that there are limits."*)

Importance for children. Children perceive digital technologies as an important part of their lives, they are omnipresent, exciting and address multiple senses. Digital technologies nurture their curiosity and are the quickest way out of boredom. Especially online technologies, which endlessly

deliver new, surprising contents just by themselves make it hard for children to let go of them.

Importance for family life. There are digital activities employed by the whole family together, watching a movie is most commonly mentioned. Nevertheless, compared with an offline activity digital activities at this age don't seem to add much value or advantage to the together time as a family. The families mostly reported that offline activities usually leave more room for the family members to interact with each other directly. In general, activities and games that require more complex problem solving, provide room for discussion and constructive interaction between parent and child. Digital examples were seen in the case of mother and daughter in family CH01 who play *Antolin* together, father and son in family CH08 (*lightbot.com*) and Mother and daughter in CH04, where Google results created a mutual topic for discussion. (*Quote parent: "My oldest daughter has this special interest in googling things. Like for example she had to do a presentation about ducks and got super interested in it, so she googled all sorts of ducks. And then she came to me and showed me all the pictures that came up and talked about it with me and asked which one I thought was the most beautiful. And I think in those moments digital media use is rather fostering family life than hindering, then there is something mutual."*)

Skype was mentioned as a good way to keep in touch with family members living far or abroad, which is in some cases the only but easy way to keep children and extended family members connected and part of each other's lives.

Basically, all parents reported that digital devices are being used as momentary care giver from time to time and in certain situations. Often mentioned was a short film in the evening, which gives the mother time to prepare dinner. Also during travelling time or while waiting, ICT (most commonly one of the parent's smartphone) are being used to entertain children for a while (*Quote parent: "To get 5 minutes of peace, yes"*; *Quote parent: "When she was waiting for me at the dentist, I gave her my phone so she could play a game on it."*).

3.5 Surprising findings

Engagement in mediation is a matter of interest and time. Time and engagement allocated to children's education and the mediation of screen time seems to be a crucial factor in regard to the children's personal

relevance of ICT. High income and/or high education alone are no crucial factors, also the level of education doesn't necessarily correlate with the awareness of risks to the child due to inappropriate content for young children such as shooter games etc. One highly educated full-time working mother relied on digital devices in terms of keeping her child entertained. She also was the most tolerant of all parents regarding her son's YouTube browsing, where he happened to watch videos not suitable for his age. Her lack of time seemed to make it impossible to implement a healthy media regulation for her child, who showed strong signs of digital media addiction.

The personal willingness to engage in the mediation seems to be very individual and also not necessarily dictated by time. One mother reported that even though she has the time she does not engage much with her son's media use as long as the content doesn't interest her personally.

The activity matters more than the device. For children the particular device doesn't seem to make much of a difference, it's the application/the use that matters. An Audiobook listened to on an iPod is just as attractive as on a CD. The tablet PC stands out as the device children seem to be fascinated by also because of the handling. It seems to be more interesting due to the touch screen and the variety of possibilities and it seems to be more popular than the smartphone due to its larger screen.

Digital media can affect real relationships. Online games can be important enough for a parent to provoke a conflict within the children-parent-relationship in real life. The children played a sequence of their father's favourite game on his smartphone and made a mistake which caused the father to lose virtual money. The fact that he got very angry with them affected them in sustained manner, as they could still recall the incident and were very apologetic about it.

Quote child: When my sister was about four years old or so, just younger than now, she bought Dad a paddling pool for 15 diamonds. And he didn't find that funny at all and from that time on we had to ask before we could play hay day.

Interviewer: And did your Dad have to pay real money?

Child: No.

Interviewer: But why didn't he find it funny then?

Child: Because he had so many diamonds. And he wanted to achieve something where he can get real money for it or get to a new level or something, that's why. We had asked if we could play, but at that time he didn't know that we knew how to get into the game. My sister then found out how to get to the diamonds. She thought they were so pretty. And then Dad

said that we have to turn it off and she did. And the next time she thought «I go to the pretty diamonds again» and she also knew how to buy things. And then she had to look at the beautiful diamonds and she clicked and got diamonds and then she also clicked on the paddling pool and bought it.

Interviewer: She probably didn't want to do that, do you think she did that on purpose?

Child: Mhh, no.

Gaming as coping strategy for aggressive behaviour. In the case of an highly agitated sibling, shooter games (e.g. *Blitzbrigade*) function as a coping strategy to compensate aggression, which seems to help reducing aggressive behaviour towards his siblings and mother. (*Quote child: "I like it because it is fun, not because it is brutal. (...) I have fun playing it, it's not so terrible for me."*)

Young children have no clear concept of what "being online" means. They understand that devices need to be protected (with passwords and careful handling) but mostly have no understanding of how being online could bear negative consequences for them and their identity. In terms of possibilities they perceive digital media (respectively *Google*) as a source of incredible knowledge that has an answer, picture or video to any possible question or topic. (*Quote child: "Internet is some kind of device. You can look for things in it."*)

Some young children own ICTs and decide about screen time autonomously. Two children own ICT devices that they have unlimited access to without having to ask. Whereas the 7.5 year-old seems to find a way to responsibly regulate his screen time, the media use of a 1.5 years younger boy has gotten out of control to the point that he does not play without his tablet PC when he is alone.

4. DIGCOMP framework

4.1 Based on the interviews and observations, what are the digital skills of the interviewed children as described in the DIGCOMP framework?

Parents are well aware of the internet-related risks and limitation of access seems to be the strategy of choice. So most of the focus children have no or little access to the internet and therefore very little or no digital skills when it comes to online activities. The only online activity reported is browsing YouTube for series or films to watch. About half the children are allowed to

do that on their own or with their parents present, half of the kids don't use the internet at all. Given their limited reading and writing literacy at that age the children orientate themselves mostly by pictures when searching on YouTube. The dimensions of use and enjoyment extends drastically once they are able to read and write, as seen from their older siblings who would e.g. enjoy googling information about interesting topics. Six to seven year old children have no clear idea about the concept of the internet and the possibilities that lie within.

[illegible]

16	not there yet	not there yet	not there yet	not there yet	not there yet	not there yet	not there yet	not there yet
17	not there yet	not there yet	not there yet	not there yet	not there yet	not there yet	not there yet	not there yet
18	not there yet	not there yet	not there yet	not there yet	not there yet	not there yet	not there yet	not there yet
19	not there yet	not there yet	not there yet	not there yet	not there yet	not there yet	not there yet	not there yet
20	not there yet	not there yet	not there yet	not there yet	not there yet	not there yet	not there yet	not there yet
21	BU (**) gets support from parents	BU (**) gets support from parents	not there yet	BU (**) gets support from parents	BU (**) gets support from mother	BU (**) gets support from parents	not there yet	BU (**) gets support from parents
22	BU (**)	BU (**)	not there yet	BU (**)	BU (**)	not there yet	BU (**)	BU (**)
23	not there yet	not there yet	not there yet	not there yet	not there yet	not there yet	not there yet	not there yet
24	not there yet	not there yet	not there yet	not there yet	not there yet	not there yet	not there yet	not there yet
25	not there yet	not there yet	not there yet	not there yet	not there yet	not there yet	not there yet	not there yet

(*) observed

(**) self-evaluation or reported by another member of the family

(***) researcher evaluation

4.2 Discussion of the categorisation of young children's skills with DIGCOMP?

Most of the grid's content concerns online activities that Swiss children in that age category mostly have little or no access to yet. The listed competencies are therefore too advanced to make a useful distinction between basic and advanced skills in a national comparison.

DIGCOMP GRID

Basic user		Independent user		Proficient user	
I can look for information online using a search engine.	1 BU	I can use different search engines to find information. I use some filters when searching (e.g. searching only images, videos, maps).	1 IU	I can use advanced search strategies (e.g. using search operators) to find reliable information on the internet. I can use web feeds (like RSS) to be updated with content I am interested in.	1 PU
I know not all online information is reliable.	2 BU	I compare different sources to assess the reliability of the information I find.	2 IU	I can assess the validity and credibility of information using a range of criteria. I am aware of new advances in information search, storage and retrieval.	2 PU
I can save or store files or content (e.g. text, pictures, music, videos, web pages) and retrieve them once saved or stored.	3 BU	I classify the information in a methodical way using files and folders to locate these easier. I do backups of information or files I have stored.	3 IU	I can save information found on the internet in different formats. I can use cloud information storage services.	3 PU
I can communicate with others using mobile phone, Voice over IP (e.g. Skype) e-mail or chat – using basic features (e.g. voice messaging, SMS, send and receive e-mails, text exchange).	4 BU	I can use advanced features of several communication tools (e.g. using Voice over IP and sharing files).	4 IU	I actively use a wide range of communication tools (e-mail, chat, SMS, instant messaging, blogs, micro-blogs, social networks) for online communication.	4 PU
I can share files and content using simple tools.	5 BU	I can use collaboration tools and contribute to e.g. shared documents/files someone else has created.	5 IU	I can create and manage content with collaboration tools (e.g. electronic calendars, project management systems, online proofing, online spreadsheets).	5 PU
I know I can use digital technologies to interact with services (as governments, banks, hospitals, schools, libraries).	6 BU	I can use some features of online services (e.g. public services, e-banking, online shopping).	6 IU	I actively participate in online spaces and use several online services (e.g. public services, e-banking, online shopping).	6 PU
I am aware of social networking sites and online collaboration tools.	7 BU	I pass on or share knowledge with others online (e.g. through social networking tools or in online communities).	7 IU	I can use advanced features of communication tools (e.g. video conferencing, data sharing, application sharing).	7 PU
I am aware that when using digital tools, certain communication rules apply (e.g. when commenting, sharing personal information).	8 BU	I am aware of and use the rules of online communication ("netiquette").	8 IU		8 PU
I can produce simple digital content (e.g. text, tables, images, audio files) in at least one format using digital tools.	9 BU	I can produce complex digital content in different formats (e.g. text, tables, images, audio files). I can use tools/editors for creating web page or blog using templates (e.g. WordPress).	9 IU	I can produce or modify complex, multimedia content in different formats, using a variety of digital platforms, tools and environments.	9 PU
I can make basic editing to content produced by others.	10 BU	I can apply basic formatting (e.g. insert footnotes, charts, tables) to the content I or others have produced.	10 IU	I can create a website using a programming language.	10 PU
I know that content can be covered by copyright.	11 BU	I know how to reference and reuse content covered by copyright.	11 IU	I can use advanced formatting functions of different tools (e.g. mail merge, merging documents of different formats, using advanced formulas, macros).	11 PU

I can apply and modify simple functions and settings of software and applications that I use (e.g. change default settings).	12 BU	I know the basics of one programming language.	12IU	I know how to apply licences and copyrights.	12PU
	13 BU		13IU	I can use several programming languages. I know how to design, create and modify databases with a computer tool.	13PU
I can take basic steps to protect my devices (e.g. using anti-viruses and passwords). I know that not all online information is reliable.	14 BU	I have installed security programmes on the device(s) that I use to access the Internet (e.g. antivirus, firewall). I run these programmes on a regular basis and I update them regularly.	14IU	I frequently check the security configuration and systems of my devices and/or of the applications I use.	14PU
I am aware that my credentials (username and password) can be stolen. I know I should not reveal private information online.	15 BU	I use different passwords to access equipment, devices and digital services and I modify them on a periodic basis.	15IU	I know how to react if my computer is infected by a virus.	15PU
I know that using digital technology too extensively can affect my health.	16 BU	I can identify the websites or e-mail messages which might be used to scam. I can identify a phishing e-mail.	16IU	I can configure or modify the firewall and security settings of my digital devices.	16PU
I take basic measures to save energy.	17 BU	I can shape my online digital identity and keep track of my digital footprint.	17IU	I know how to encrypt e-mails or files.	17PU
	18 BU	I understand the health risks associated with the use of digital technology (e.g. ergonomics, risk of addiction).	18IU	I can apply filters to spam e-mails.	18PU
	19 BU	I understand the positive and negative impact of technology on the environment.	19IU	To avoid health problems (physical and psychological), I make reasonable use of information and communication technology.	19PU
	20 BU		20IU	I have an informed stance on the impact of digital technologies on everyday life, online consumption, and the environment.	20PU
I can find support and assistance when a technical problem occurs or when using a new device, program or application.	21 BU	I can solve most of the more frequent problems that arise when using digital technologies.	21IU	I can solve almost all problems that arise when using digital technology.	21PU
I know how to solve some routine problems (e.g. close program, re-start computer, re-install/update program, check internet connection).	22 BU	I can use digital technologies to solve (non-technical) problems. I can select a digital tool that suits my needs and assess its effectiveness.	22IU	I can choose the right tool, device, application, software or service to solve (non-technical) problems.	22PU
I know that digital tools can help me in solving problems. I am also aware that they have their limitations.	23 BU	I can solve technological problems by exploring the settings and options of programmes or tools.	23IU	I am aware of new technological developments. I understand how new tools work.	23PU
When confronted with a technological or non-technological problem, I can use the digital tools I know to solve it.	24 BU	I regularly update my digital skills. I am aware of my limits and try to fill my gaps.	24IU	I frequently update my digital skills.	24PU
I am aware that I need to update my digital skills regularly.	25 BU		25IU		25PU

5. Method

The Swiss team joined the study in April 2016 and the study was carried out following the guidelines stated in the contract of the European Commission as well as the ethical guidelines of the Zurich University of Applied Sciences (ZHAW). The materials (card games, etc.) and interview guidelines were translated into German and adapted to fit the purpose of the study. The following materials and procedures were used/implemented:

- Information flyer to inform about the purpose of the study and the interview process, used for family acquisition
- Informed consent from kids (verbally) and parents (by signature)
- Use of audio recorders to record both the children's and the parents' interview
- Use of card game, word cards, ICT possession sheet, etc. to get maximum content turnout
- Use of child- friendly materials to put kids at ease during interview (all materials in little suitcase, crayons, little puppets to talk with, etc.)
- Anonymization of names in transcriptions and analyses
- 70 francs voucher for a Swiss retail company as incentive for every family
- Confidentiality of all researchers involved

The Swiss team consisted of three researchers of which two conducted the interviews and were mainly responsible for analysing the data. The transcription process was supported by another researcher

5.1 The sampling procedure

The sample was a convenient sample recruited via colleagues, school principals, student mailing lists, coaching facilities, kids care facilities, online forums and social media (Facebook, twitter). Only families from the German-speaking part of Switzerland were recruited. An information flyer was produced as visual aid to support the recruiting process, it was spread electronically as well as posted in public spaces such as supermarkets and community centres. As compensation every participating family received a

voucher for a Swiss retail company worth 70 francs. The kids got to keep the activity book and stickers.

5.2 The sample

The goal of ten families could not be reached, the sample only contains 8 families from the German-speaking part of Switzerland who meet the criteria. This was partly due to timing issues (school holidays). Additionally, with the recruiting strategy chosen, not enough families with lower economic status (with both lower income and lower education) could be reached.

Contrary to the sampling protocol five out of eight families are above the average income (average family income in Switzerland: CHF 7000.-)

Family code	Member Code	Income / month	Ethnicity	Sex	Age	Year school/ max level of education	Profession parents
CH01	CH01m40	CHF 7001-9000	Swiss	f	40	Tertiary	Information industry
	CH01f43		Swiss	m	42	Tertiary	Entrepreneur in food service industry
focus child	CH01g7		Swiss	f	7	1st Primary	
	CH01b3		Swiss	m	3	Forest play group	
CH02	CH02m35	CHF 7001-8000	German	f	35	Tertiary	BA Degree (currently searching for a job)
	CH02f45		German	m	45	Tertiary	Health Industry
focus child	CH02b7		German	m	7	1st Primary	
CH03	CH03m38	CHF 7001-9000	German	f	38	Tertiary	Education
	CH03f41		Swiss	m	41	Secondary	Media Industry (self-employed)
focus child	CH03b6		Swiss/German	m	6	Kindergarten (just started 1st Primary)	
	CH03g5		Swiss/German	f	5	Kindergarten	
CH04	CH04m36	CHF 5001-6000	Swiss	f	36	Tertiary	Education
	CH04f52		Swiss	m	52	Secondary	Self-employed Craftsman (formerly in IT)
focus child	CH04g7		Swiss	f	7	Kindergarten (just started 1st Primary)	
	CH04g8		Swiss	f	8	1st Primary	
	CH04g4		Swiss	f	4	Kindergarten	

CH05	CH05m42	CHF 7001-9000	Swiss/German	f	42	Tertiary	Health industry (self-employed)
focus child	CH05b6		Swiss/German	m	6	Kindergarten	
CH06	CH06m32	Under CHF 3500	Swiss	f	32	Tertiary (BSc)	Student (MSc degree) and working in education
focus child	CH06g7		Swiss	f	7	Kindergarten (just started 1st Primary)	
CH07	CH07m36	CHF 5001-6000	Indian	f	36	Tertiary (BSc)	Health industry (currently out of job)
focus child	CH07g6		Swiss (Indian)	f	6	Kindergarten (just started 1st Primary)	
	CH07b9		Swiss (Indian)	m	9	2nd Primary (just started 3rd)	
	CH07b11		Swiss (Indian)	m	11	1st Secondary (just started 2nd)	
CH08	CH08m39	Over CHF 9000	Swiss	f	39	Secondary	Worked in Finances. Now entrepreneur in the food business.
	CH08f50		Swiss	m	50	Tertiary	Media Industry
focus child	CH08b7		Swiss	m	7	Kindergarten (just started 1st Primary)	

5.3 Implementation of the protocol of observations

All interviews were conducted by the same two researchers and followed the same procedure: Short introduction, signing of consent form (which had been sent to the families to read in advance), ice-breaking activity with the entire family, followed by separated interviews of children and parents in different rooms. Picture taking by children during the interview. Reunion of the family for closing and final questions and for handing out the incentive.

To keep the administrative work lean and in order to keep the interviews as short as possible for the children, all the information and consent form were sent to the parents before the interviews and only signed at the interview. Children got informed by their parents and asked if they wanted to participate, they did not sign an extra consent form themselves though.

The ice-breaker activity was carried out with the European Schoolnet activity book provided as suggested. The books and stickers were given to the children as a gift. During the ice-breaking activity parents mostly led their children and helped them fill out their typical day with the stickers provided. The activity is quite time-consuming regarding the attention span of young children, but it was a good way of starting the interview since it helped loosen up the children for the actual interview part.

After the ice-breaker, one interviewer and the child(ren) went to the children's room while the parents stayed with the other interviewer where the ice-breaker had taken place. Since all parents had been informed about the interviews being carried out in separated rooms, this transition went smoothly in all cases. The children happily took the interviewer to their rooms and showed where they sleep and play. Siblings were tried to be involved in the children's interview process but were free to roam between rooms. So for short periods of time, siblings were in the same room when the parents were interviewed which did not interrupt the process in any way.

The duration of a family visit was between 1:45 and 2:45 hours, the transcribed sequences of the interviews (Kids/Parents) had an average duration of about 1:20 h.

5.4 Recording

In order to check the mandatory questions for digital use and the device possession/use form there was not enough time to take notes during the interviews. The interviews were audio recorded. We decided beforehand to refrain from video recording in order to keep the interview situation as natural as possible. This sometimes caused irritation when transcribing the interviews, when not every card had been spoken out loud and we had to reconstruct what has been said by analysing the pictures that had been taken of the completed card game.

5.5 Implementation of the protocol of analysis

The interviews were transcribed and coded with MAXQDA software for qualitative data analysis in regard to the research questions. The code system was developed deductively according to the semi-structured questionnaire for almost all questions. The ice-breaking activity did not bear much information regarding the research questions so it was not transcribed due to time limitations. It was listened to closely and contents were used mainly for the family portraits.

6. Discussion

6.1 Why might the results have turned out that way?

The parents who participated in the study were all very interested in the subject which already leads to a bias in the sample. Also the sample contains exclusively authoritative parenting styles and one case with a tendency towards permissive parenting, which does not represent families with laissez-faire or authoritarian parenting. The sample is also missing families with low socio-economic status, low income and low education.

6.2 How could the study be improved?

In economically glutted countries like Switzerland the sampling criteria would need to put more emphasis on the education of the parents than the income. Some of the recruited families are far below the economic average but highly educated (e.g. because they are currently in further education or reorienting their career).

Families, especially with lower socio-economic background, seem to have inhibitions regarding inviting researchers into their homes. The protocol should be opened to the possibility to conduct interviews with families in external facilities such as the university.

The card game is a helpful tool to give parents and children a wider range of activities and devices than they could have thought of on top of their head. Yet the card game could be improved, since there are activities and devices missing or redundant, which makes it complicated to come to a valid conclusion concerning favourite activities and to quantitatively evaluate the balance of offline and online activities. Another problem became clear when evaluating the children's card games in regard to rating the device yet meaning the activity linked to it. For example the picture of a TV can mean actual TV program for one child, and watching DVDs for another, since both contents are delivered by the same screen. This made it complicated to come to conclusions about children's favourite devices. Also picture quality could definitely be improved by choosing clearer images and prevent misunderstanding.

In order to get a comprehensive picture of the family, questions about the family's child care concept and the daily routine should be implemented in the questionnaire.

6.3 What are the methodological recommendations for future research?

Since the current sample (N=8) probably didn't reach saturation, a larger sample is needed (e.g. N=20). In order to draw a heterogeneous, randomized sample the acquisition process will have to be intensified by recruiting more people directly from the street. In terms of representativity, the French-speaking part and the Italian-speaking part of Switzerland could be included in the sampling area. To animate families with low socio-economic background and/or less interest in the subject it might be necessary to enhance the incentives in order to make the participation in the study more attractive. A revised and shortened version of the questionnaire could be helpful to be able to promote shorter interview duration to lower inhibitions and win over hesitant families. The ice-breaking activity also takes a lot of time with comparably very little content to be used in the analysis. A modification might optimize duration and content output.

6.4 What is the future direction for research on this topic?

In order to gain a deeper understanding of the media situation within the families with children under eight it is desirable to develop a theory how certain aspects of media use are related to aspects of parenting style / gender of the child / order of the siblings / socio-economic status / level of education / media contents etc. The postulated theory and hypothesis should be tested on a large quantitative sample (N=300).

7. References

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- Petko, D. & Baumberger, B. (2014). *Jugend und Medien. Foliensatz für Elternbildnerinnen/Elternbildner*. Bundesamt für Sozialversicherungen, Bern: Jugend und Medien. Retrieved from <http://www.jugendundmedien.ch/aktuell/aktuell-meldungen/details/news/483-elternbildung-zum-thema-jugend-und-medien-foliensatz-mit-den-wichtigsten-botsch.html?cHash=e220b6be888b1706714c438f38c40522>
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8. Annexes

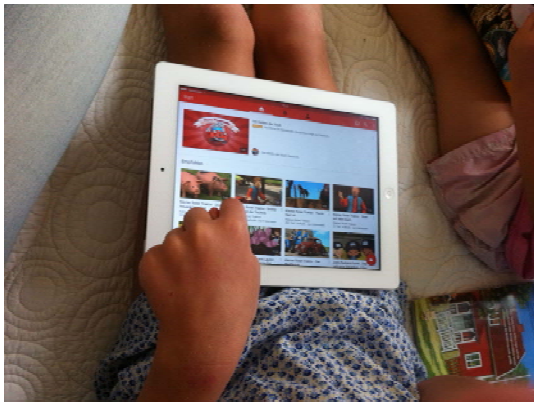
8.1 Families' Activities

8.1.1 Family CH01 – Icebreaker

Was hast du heute gemacht? Klebe die Aufkleber **A** in das richtige Zeitfenster

		Zeit zu dieser Zeit gemacht hast.		

8.1.1 CH01 – Activities and favourites (kid – parents)



8.1.2 Family CH02 – Icebreaker

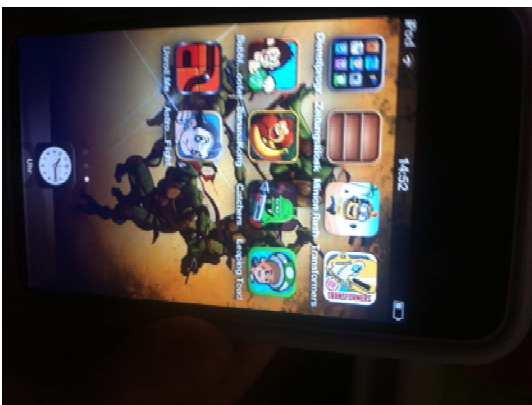
★ Mein Tag!

Was hast du heute gemacht? Klebe die Aufkleber **A** in das richtige Zeitfenster

	<p>Wähle eine Uhrzeit Male, was du zu dieser Zeit gemacht hast.</p>			

10

8.1.2 CH02 – Activities and favourites (kid – parents)



8.1.3 Family CH03 – Icebreaker

★ Mein Tag:

Was hast du heute gemacht? Klebe die Aufkleber **A** in das richtige Zeitfenster

	<p>Wähle eine Uhrzeit Male, was du zu dieser Zeit gemacht hast.</p>		

10

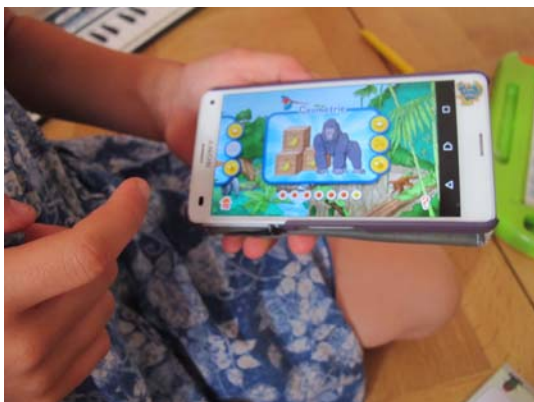
8.1.3 CH03 – Activities and favourites (kid – parents)



8.1.4 Family CH04 – Icebreaker



8.1.4 CH04 – Activities and favourites (kid – parents)



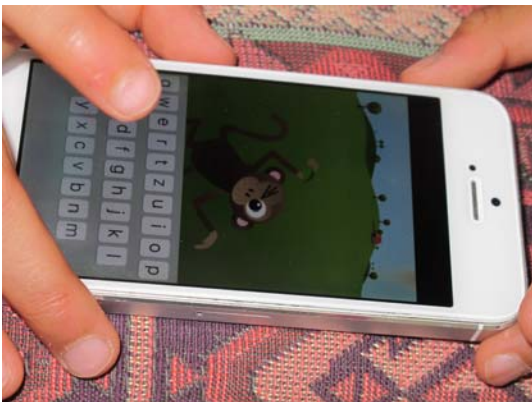
8.1.5 Family CH05 – Icebreaker

★ Mein Tag!

Was hast du heute gemacht? Klebe die Aufkleber (A) in das richtige Zeitfenster

		In dieser Zeit zu dieser Zeit gemacht hast.		

8.1.5 CH05 – Activities and favourites (kid – parents)

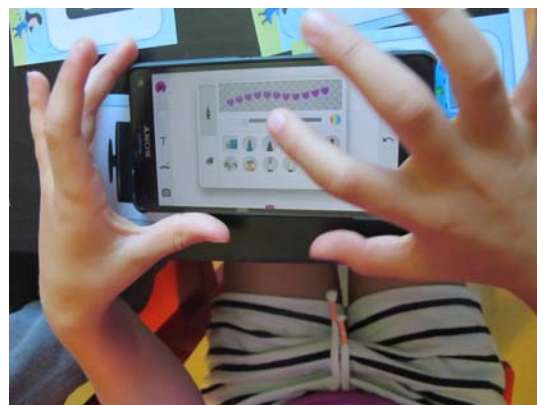
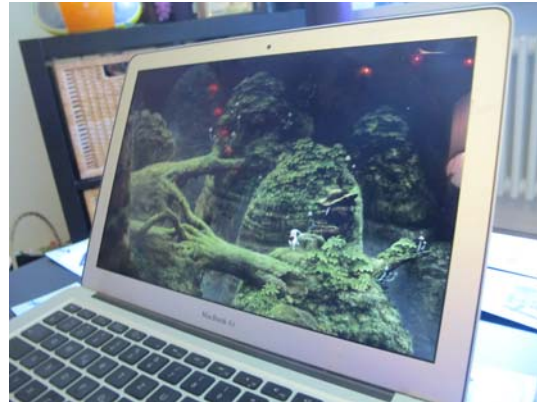


★ Mein Tag:

Was hast du heute gemacht? Klebe die Aufkleber **A** in das richtige Zeitfenster

		Zeit dieser Zeit gemacht hast.		

8.1.6 CH06 – Activities and favourites (kid – parents)



8.1.7 Family CH07 – Icebreaker

★ Mein Tag:

Was hast du heute gemacht? Klebe die Aufkleber (A) in das richtige Zeitfenster

Arztzeit zu dieser Zeit gemacht hast.

8.1.7 CH07 – Activities and favourites (kid – parents)



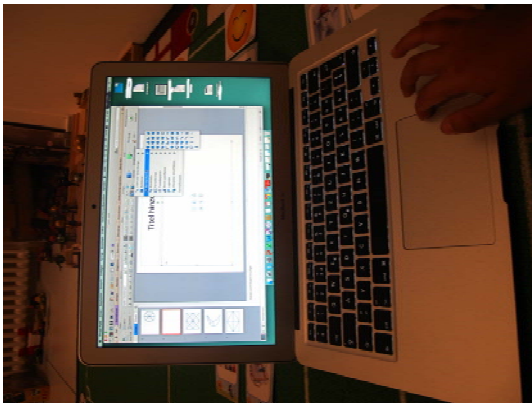
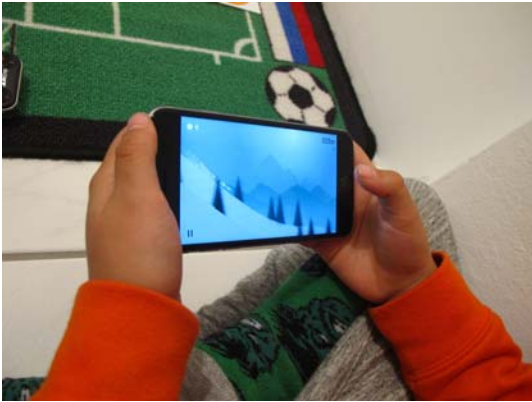
★ Mein Tag!

Was hast du heute gemacht? Klebe die Aufkleber **A** in das richtige Zeitfenster

	<p>Wähle eine Uhrzeit Male, was du zu dieser Zeit gemacht hast.</p>			

10

8.1.8 CH08 – Activities and favourites (kid – parents)



8.2 Consent Form

Zürcher Hochschule
für Angewandte Wissenschaften



ZHAW Zürcher Hochschule für Angewandte Wissenschaften
Departement Angewandte Psychologie
Pfingstweidstrasse 96
CH-8005 Zürich
Kontaktperson : Bianca Könitzer
Telefon +41 (0) 58 934 84 72
bianca.koenitzer@zhaw.ch

Information zur Studie zum Mediennutzungsverhalten von Kindern im Alter von 0-8 Jahren

Liebe Eltern, liebe Kinder,

die Abteilung Medienpsychologie der ZHAW untersucht auf wissenschaftlicher Basis wie Menschen Medien nutzen. Anhand der geplanten Studie möchten wir neue Erkenntnisse zur gesellschaftlichen und individuellen kindlichen Entwicklung identifizieren.

Die zunehmende Medien- und Internetnutzung im Kindesalter birgt Chancen und Risiken. Um diese Aspekte konkret beschreiben zu können, ist es notwendig das Medien- und Internetnutzungsverhalten von Kindern und Familien wissenschaftlich zu untersuchen. Neben einem gemeinsamen Interviewteil werden Eltern und Kinder unter Einsatz von unterstützenden Spielmaterialien wenn möglich im Einzelinterview befragt (Dauer jeweils ca. 1.5 Stunden). Sofern es Geschwisterkinder gibt, werden diese auch in das Gespräch miteingebunden.

Das Interview wird mittels eines Audiorekorders aufgezeichnet, die Audioaufnahme nach der Transkription vernichtet. Fotos dienen lediglich zur bildhaften Dokumentation des Mediengebrauchs, es werden niemals Bilder verwendet auf denen Kinder oder Familienmitglieder erkennbar sind. Bei den Fragen geht es neben den üblichen Angaben wie Alter und Geschlecht um Fragen rund um das Mediennutzungsverhalten und die Lebenssituation. Die erhobenen Daten werden anonymisiert, es sind keine Rückschlüsse auf die Personen möglich. Wir haben als Forscherteam keinerlei Interesse, die Teilnehmer als Personen zu identifizieren.

Insgesamt nehmen 10 in der Schweiz lebende Familien an diesem Projekt teil, welches vom Joint Research Center der EU-Kommission geplant und entwickelt wurde.

Liebe Eltern, deshalb möchten wir Sie um Ihr Einverständnis – sofern Ihre Tochter / Ihr Sohn dies möchte – für das oben erwähnte Interview bitten.

Als Dankeschön erhält jede Familie bei einer Teilnahme ein Migros-Gutschein im Wert von CHF 70.

Sollten Sie noch weitere Fragen haben, richten Sie diese bitte an **Bianca Könitzer** unter der Telefonnummer **+041 (0)58 934 84 72**.

Wir danken Ihnen sehr für Ihre Unterstützung!



**Einwilligungserklärung zur Studie zum Mediennutzungsverhalten von Kindern
im Alter von 0-8 Jahren**

Ich erkläre mich bereit an der o.g. Studie freiwillig teilzunehmen. Ich bin in einem persönlichen Gespräch ausführlich und vertraulich über Inhalt und Bedeutung der Studie aufgeklärt worden. Alle meine Fragen wurden zufriedenstellend beantwortet, ich kann jederzeit neue Fragen stellen. Ich habe darüber hinaus den Text der Studienaufklärung gelesen und verstanden.

Ich habe verstanden und bin damit einverstanden, dass meine persönlichen Daten anonymisiert erhoben werden (d.h. diese können nicht meiner Person zugeordnet werden), auf Datenträgern gespeichert und vom Auftraggeber der Studie ausgewertet werden; die Weitergabe an Dritte einschließlich Publikationen erfolgt ebenfalls ausschließlich in anonymisierter Form, d.h. sie können nicht meiner Person zugeordnet werden.

Ein Exemplar dieser Studieninformation und Einwilligungserklärung habe ich erhalten, gelesen und verstanden. Mir ist bekannt, dass ich **jederzeit und ohne Angabe von Gründen meine Einwilligung zurückziehen kann (mündlich oder schriftlich), ohne dass mir oder meiner Tochter / meinem Sohn daraus Nachteile entstehen.** Mir ist weiterhin bekannt, dass **bestimmte Fragen unbeantwortet bleiben können.**

Ich bin einverstanden, dass mein(e) Kind(er) an der Befragung teilnimmt / teilnehmen. Die Namensangaben dienen lediglich der Überprüfung der Einwilligung und werden zu keinem Zeitpunkt mit den Interviewdaten verknüpft. Die wissenschaftliche Analyse und Veröffentlichung der Daten erfolgt ausschließlich anonym, sodass keine Informationen über einzelne Kinder und die Eltern erkennbar oder auf sie zurückzuführen sind. Die Mitarbeiter der ZHAW unterliegen der Schweigepflicht.

Name des Kindes 1:

Name des Kindes 2:

Name des Kindes 3:

Elternteil 1:

Elternteil 2*:

Ort /Datum

Ort /Datum*

Unterschrift

Unterschrift*

** Im Falle alleinsorgberechtigter Eltern können diese Felder freigelassen werden.*