YOUNG CHILDREN (0-8) AND DIGITAL TECHNOLOGY

What changes in one year?
National report
SPAIN

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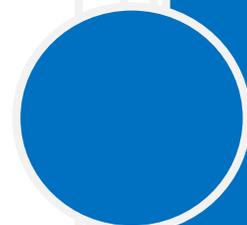
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Contents

Executive summary

The study is a part of a larger qualitative study carried out across 7 European countries sponsored by the EU Joint Research Centre aimed at exploring the changes in one year that children aged between 0 and 8 years experience in relation to (a) their use and representation of digital technologies, e.g. smart phones, tablets, computers, TVs, video-games, etc. and; (b) the mediating strategies of their families. A total of 38 families with at least one child aged 8-9 have participated in the current fieldwork; 37 have at least one child aged 8-9 and 1 has a child of 5 years. Most of the participant families had previously been involved in a prior fieldwork undertaken in 2015, which counted with the participation of 214 families of European countries. This study in Spain is a step further of previous fieldwork (Matsumoto et al., 2016; Galera, Matsumoto and Poveda, 2016), which focused on the ways in which children and their families engage with and perceive new (online) technologies and to what extent technology empowers (or not) families. This second study focuses on a single overall research question: what changes in one year? This research question is addressed considering the four areas that structured the previous study: Use, Perceptions/Attitudes, Individual context, and Family context.

This national report of Spain is written based on data generated by interviewing 6 families of which 5 have at least one child between 8-9 years of age and 1 has one child of 5 years of age. The fieldwork was conducted in the Autonomous Community of Madrid and in Catalonia between June 2016 and March 2017. Although the literature regarding technology in the life of children 0-8 is slowly growing in the Spanish context as a key focus as such, it is still very scarce. Challenges also remain in terms of addressing diversity and internationalization of research. We hope, therefore, that the results from this study will serve as a basis for larger EU studies on related topics and for policy recommendations in Spain and beyond.

Key findings

Children

- Children's uses of digital technology at the age 8-9 change due to: (a) the acquisition or abandonment of technological devices; (b) the emergence of new social, leisure and family practices; (c) changes in the family structure, and; (d) children's growing literacy skills and general development. These changes

influence norms, practices, values, autonomy and confidence/skill. Overall, these findings clash with the extended idea that changes depend solely on the age of the child.

- In one year, children's interests have not changed in essence but adapted to new contexts (new channels and new practices).
- For most of the 8-9 year old children the two favourite devices continue to be tablets and television, which they use primarily for leisure, but in comparison to findings from last year, television seems to been reinforced as a preference for the children due to the inclusion of new features, such as Chromecast streaming or the large size of the screen.
- 8-9 year old children expect technology to treat them as smart persons and not in a childish way, and so they prefer 'real' tech devices rather than devices targeted to kids. They also prefer brand-new devices - as they value promptness - and devices with multiple functions (eg. smartphone/tablet) rather than one-function devices (eg. ipod) -.
- 8-9 year old children develop new ways of talking about the technology-based practices they engage in (eg. "watching songs", personification of Youtube).
- 8-9 year old children in our sample have gained digital autonomy, as they have acquired new tech skills such as downloading contents, using the Voice recognition software (Google Voice, Siri- IOS), using passwords, and techniques for improving the use of battery and ram. They also explore mediated communication through sending oral messages in WhatsApp.
- At the age of 8-9, children see and use Google and Youtube as resources for accessing content and information that interest them. In particular, Youtube emerges as a resource for finding information and solutions to the challenges and problems they find, besides being a resource for entertainment.
- We did not see significant differences in the usages of the digital devices between the 8-9 years olds and the 5 year old in the sample (although we cannot make a generalised statement as there is only one younger child in the sample).

Parents

- In comparison to the prior fieldwork, parental mediation seems to have experienced slight changes, being now more active and explicit due to the child's increase of autonomy in usage of technology. As parents afford the children with more opportunities to use the technology autonomously, parents perceive that risks associated with the practice also grow. In addition, the increase of the children's digital autonomy has led to the reverse mediation, where children share their expertise by teaching others.
- Parents have intensified their expectations regarding the role that technology might play at school because they believe that digital technologies are indispensable for the education of their children. They expect the school to

    play a key role in the digital enculturation of the new generations.

- Regarding the perceptions of parents, fathers tend to be more tolerant to children's exposition to digital culture –'kill games' in particular– and mothers tend to have more concerns about time and content.
- In the same families, difference in viewpoint regarding digital aspects (e.g. history of devices, practices, preference, norms) can coexist silently. This might point towards a lack of a common ground among the members of the family regarding digital activity.
- Parents suffer more from the norms they have established for managing the digital life of the children than children themselves. At the age of 8-9 children understand the norms and can explain them clearly although they actively disagree with and resist those norms at times. Children feel frustration for norms but do not lives them with the grief or bitterness that parents report.

Challenges and recommendations (including proposal of implementations or practical proposals)

The findings of our study have policy-relevant consequences. The main one is that a collaboration between family and school is necessary in order to assure the digital lives - both academic and non-academic - of the future generations. In our data, digital devices play different roles at home and school; while at home it is associated with leisure and personal interests, in school the devices are used for the purpose of learning, and so children deal with a family-school discontinuity in everyday life. Another aspect relevant to policy are school teaching practices. We suggest that they may include more proactively the digital literacy practices that children develop as part of their leisure and family life, as for young children it is where literacy, language and numeracy learning is occurring. In general, schooling is not making the best of the learning opportunities that digital media and technology affords for children. A third aspect relates to how school and parental mediation could support the processes through which children make sense and appropriate technology: it is important for children to develop responsible autonomy and self-control when using, desiring and 'buying' technology.

These policy-relevant consequences from our study point to the following recommendations. In order to develop responsible autonomy and self-control at school it is important, on the one hand, to integrate digital practices in the school life. Spaces like the school library can introduce tablets as a way to recognise a new way to read and also to generate reflections about digital reading and writing in contemporary life. A stress on cybersecurity, online etiquette, effective online searching and critical reading of online texts is important for educating towards a

safe online life. The school should be a 'nourishing' example of how to use the digital resources and not an exception. On the other hand, it is important to promote family digital technology workshops on useful content for particular purposes (eg. learning languages, reading, numeracy), limitation of usage, mediation and control. The city councils can, through schools or the public libraries, for instance, promote workshops periodically, such as every 3 months. These activities would help families to actively be involved in the digital mediation of their children.

1. Introduction: Digital technology in the life of Spanish young children

Background to the 0-8 Study as a European study

The present study is a step further of the research "Young Children and Digital Technology 0-8. A qualitative exploratory study", published as a national report of Spain in February 2016 (see Matsumoto et al., 2016), supported by the EU Joint Research Centre. The **first fieldwork**[1] (2014-2015) generated data regarding the experiences of young children and their families with digital technologies and described its potential benefits and risks associated to their (online) practices. The study sought to shed light on a topical issue that just recently had become a topic of interest in European research.

The second round of fieldwork (2016) involves a step further in research. Half of the families that participated in the first study have participated in this second wave of interviews, which have focused on documenting the changes in their practices, insights and strategies for mediating/regulating the digital uses. This second report presents a second portrait of young children's engagement and experiences with digital technologies at home in Spain, within the JRC project framework. The focus of this report is the change in the use of technology devices.

In the context of the Project Empowering Citizens' Rights in merging ICT (ECIT in short, Project n. 572), this is the third year that the study has been conducted at a cross-national level in Europe): 2014 (pilot)[2], 2015 (first fieldwork) and 2016 (second fieldwork)[3]. However, Spain started to participate in the study since 2015. In 2014, seven countries participated in the pilot study and each one contributed with 10 interviews to families that at least had a child aged between 6 and 7 (Chaudron, 2015). In 2015, 16 countries -including Spain- joined the study, which focused on the following four research questions (RQ):

> RQ1: How do children under the age of 8 engage with new (online) technologies?

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[1] The countries that collected data in 2015 (first fieldwork) are Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Finland, Germany, Italy, Latvia, Portugal, Romania, Slovenia, Spain, The Netherlands, and United Kingdom. In addition to the 16 countries above, Malta, Norway and Russia have collaborated with the network without data collection in 2015. A total of 214 families participated.

[2] 7 countries participated in the pilot, and each one provided the corpus with 10 families. A total of 70 families participated.

[3] The countries that collected data in 2016 (second fieldwork) are Belgium, Bulgaria, Cyprus, Croatia, Netherlands, Slovenia and Spain. A total of 38 families were interviewed.

RQ2: How are new (online) technologies perceived by different family members?

RQ3: What role do these new (online) technologies (smartphones, tablets, computers, video games, apps, etc.) play in 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 constrictive or restrictive?

Table 1 below summarizes how the research questions were articulated around four dimensions: use, perceptions/attitudes, individual context, family context.

	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 ● Of the children ● Of the parents	RQ 4:Parental Mediation ● Passive/active ● Restrictive/permissive ● Implicit/explicit ● Reverse mediation

Table 1: The focus of the 2015 study and the four research questions

The results of the study, based on 224 families, have considerably improved knowledge on the field of digital literacy, providing cross national information about how children and families cope with technology. The study is among the first in the world on this topic from a cross-national perspective.

Between 2016-2017 seven countries (Belgium, Bulgaria, Cyprus, Croatia, Netherlands, Slovenia and Spain) have conducted a new data gathering round with the participation of 38 European families. This fieldwork has focused on looking at changes - how perceptions, usage and skills change with time as family members, parents and child grow older, particularly the focal child who by this time may have turned 8-9 years of age. The aim of the study is to measure change over time in relation to parent's and children's perceptions, usage and skills of digital technology. The goals of this third round of cross national fieldwork have been specified in the following dimensions with the aim of monitoring and describing major changes and their underpinning reasons:

Devices (new, drops, expectations)

Activities/Interests/Opportunities (new, drops)

Skills (Kind of skills that children have acquired, lost)

Mediation (rules)

Perceptions (the way they see digital technology, the same as before, different?)

Young Children and digital technologies in Spain: Context and a brief review of the literature

The Spanish educational system is defined by the 2013 LOMCE Educational Law (*Ley Orgánica Mejora de la Calidad Educativa de Educación* - Organic Law for the Improvement of Education) and is framed in the Spanish Constitution of 1978 (article number 27). Education is free, secular and compulsory from 6 to 16 years old and is considered a constitutional right for all citizens. The central national government defines the general structure of the education system, which articulates five stages: early childhood education (0-6 years of age), primary education (6-12), compulsory secondary education (12-16), pre-university baccalaureate (16-18) or various tracks of technical and vocational training (+16) and University higher education (+18), alongside various specific educational programs (i.e. language, arts, sports). Spain has 17 autonomous communities, and these regional governments manage and oversee the educational system within their region and have responsibility over aspects of the curriculum and organization of educational related programs. In particular, regions with more than one official language (Basque Country, Galicia, Catalonia, Balearic Islands and Valencia) define the bilingual policies and practices of the school system they govern.

For the age range of this national report the relevant educational tracks are: (a) the first cycle of early childhood education (0-3) which is primarily housed in specific early childhood education centres; (b) the second cycle of early childhood education (3-5), which is incorporated into primary schools, and; (c) the first cycle of primary education (6-9).

This national report is based on fieldwork carried out in two Autonomous Communities, which are among the three most densely populated regions in Spain: the Community of Madrid, with close to 6.4 million inhabitants, and Catalonia with almost 7.4 million inhabitants. Furthermore, these two communities confront distinct linguistic realities. On one hand, the Community of Madrid has Spanish as an official language and has been implementing an extensive Spanish-English

bilingual educational program in the pre-university school system. On the other hand, Catalonia has three co-official languages (Spanish, Catalan and Aranese, the last one since the reform of the Estatut d'Autonomia in 2006). It has a multilingual educational policy in which Catalan is the vehicular language of education in the regional education system, Spanish is taught as a second language and English has been fostered since 1999 through the CLIL (Content and Language Integrated Learning) approach.

Regarding existing studies in the area, some aspects have slightly changed in comparison to the literature reviewed in the previous national report in 2016. However, the field still faces the same challenges.

First, research on digital literacy in Spain continues to be a major area of research in fields such as Education, Psychology and Sociology, and as usually happens with interdisciplinary research topics as the one that concerns this report, research is being developed concurrently in different areas of knowledge. As a consequence, the existing research related to technology in the lives of children is dispersed. Linked to this scattered construction of the field, the challenge is to share perspectives and studies among researchers from different fields to produce knowledge collaboratively. In this regard, this report is a result of a collaboration between researchers from the fields of Education and Psychology.

Second, research keeps focusing on youth (13-18), as youth are considered population "at risk" who have become digital without the guidance of their families or teachers during the emergence and consolidation of the Digital Age at the beginning of the 21st century. This is also because research responds to the fears and needs of families and schools. However, this tendency of studies to focus on adolescents in the school context neglects other important social groups such as infants, young children and elders. This study, which focuses on children 0-8, seeks to be a starting point to generate more research on the topic with this particular social group. Moreover, it focuses on the home context, not on the educational context that research in digital literacies tends to be focused (secondary education and university the most studied one, and primary contexts to a lesser extent).

Third, research on technology and children is in its majority a response to the digital challenge in schools and so it is focused on exploring the pedagogical affordances of technologies and how technology can be embedded meaningfully in the teaching/learning practices in early childhood settings, primary education (Real and Correro 2015) and secondary education (Fittipaldi, Juan and Manresa 2015), as well as at university level in Initial Teacher Training (Aliagas & Margallo 2016). The primary school context is emerging as a new focus of research, particularly centered on the ordinary classroom and the school library and family-school intersections or

children's homes in urban spaces. On this regard, the research group GRETEL from the Universitat Autònoma de Barcelona has extensively worked in digital literature in primary classroom and school libraries, besides studying the characteristics of children's e-literature (Ramada 2015; Turrión 2015), children's e-reading profiles (Ramada and Reyes 2015) and the interplay between e-literature and play (Correro and Gil 2016; Correro and Real 2017). Some few studies study the role that digital literature play in family routines and activities (Aliagas and Margallo 2015; Aliagas and Margallo 2016). Some of the results of GRETEL's last project have been published in *Digital Literature for Children: Texts, Readers and Educational Practices* (Real and Manresa, 2015), with contributions at a theoretical level and also in the fields of digital literature, education and family literacy.

Another research group in Education, GRAEL (*Research Group in Language Teaching and Learning*), explores online identity and learning in youth's culture (Cassany 2016; Shaforiva & Cassany 2016; Vázquez-Calvo & Cassany 2017), as well as the role of gaming and fan activities in Education (Valero-Porras & Cassany 2016; Zhang Tian & Cassany 2016). The group has done extensive research on the process of implementation of one-to-one laptop program in Catalonia (Martínez, Subías & Cassany 2016; Vázquez-Calvo & Cassany 2016; Vázquez-Calvo 2016a, 2016b; Cassany & Llach 2017). It currently runs the project ICUDEL - *Digital Identities and Cultures in Language Education* (proyecto RETOS I+D+i del Ministerio de Educación y Ciencia, 2015-2018, Ref. EDU2014-57677-C2-1-R; led by D. Cassany at Universitat Pompeu Fabra). From the field of Psychology but with an interdisciplinary vocation towards Sociolinguistics and Education, the UAM research group *Infancia Contemporánea* has studied youth engagement with digital around music and expressive practice (Morgade, Verdesoto and Poveda 2016; Poveda and Morgade, in press) and the place of digital media in younger children's daily routines (Poveda, Morgade and González-Patiño, 2012; Morgade, González-Patiño and Poveda, 2014). In addition, another line of research has focused on the role of digital tools to foster teacher-family collaboration in pre-school settings (González-Patiño, Poveda and Morgade, 2012; González-Patiño and Poveda, 2015).

The following are some of non-academic projects about technology targeted at young children, based on intervention or action research:

- *Fundación CNSE* is dedicated to the promotion of Spanish Sign Language (LSE and the rights and education of Deaf people (www.fundacioncnse.org) and has developed interactive apps to promote literacy and LSE learning in young children.
- *A pequeña escala- MediaLabPrado* (http://medialab-prado.es/person/a-pequena-escala) is a project centered on involving children in participatory design and creation hosted by the MediaLab Prado (a public digital culture

laboratory in Madrid). The project works with school children in Madrid and, although not targeted to the 0-8 age range, includes the active participation of children below 8 years of age.

- *Asociación Infancia y Comunicación* (www.infanciaycomunicacion.org) clusters researchers, research groups and public policy units in Spain with an interest on children and media. Works as a news repository and networking organization, compiles research reports and news related to childhood, adolescence and media. It does not have a particular focus on 0-8 years of age and primarily pays more attention to television and advertising than digital media and technologies.
- *Educa Thyssen* (https://www.museothyssen.org/educacion) supports educational programs and a workshop on videogames for teachers and students in primary and secondary schools. These programs include activities for children under 8 years of age but most programs for younger children are framed as "programs for families".

In short, although the literature and projects regarding technology in the life of children 0-8 are emerging in the Spanish context as a research theme, research is still very scarce. We hope, therefore, that the results from the current study will serve as a basis for larger EU studies on related topics and for policy recommendations in Spain and beyond.

2. Method

In this section, we describe the methodology for data gathering and analysis that we have followed. In order to gather data, we used a range of instruments such as questionnaires, interviews and observations during home visits. This has involved working with various types of data: quantitative, discursive or those based on observations. The protocol has been designed by the European research participants and later adapted by each national research team to fit the particular circumstances of data collection in each context.

The sampling procedure

The Spanish research team consists of a splited group (half based in the Autonomous University of Madrid and the other in Pompeu Fabra University/Autonomous University of Barcelona). As in the first round of data-collection (6 interviews were done in Catalonia and 5 in Madrid), we divided the recruitment of families in the second round of interviews as well. Each subteam has asked again three families to participate (3 in Madrid and 3 in Catalonia),

considering diversity in terms of family income, family structure and gender. We also tried to involve those families who had been more participative in the first fieldwork or who had explicitly communicated to researchers a willingness to participate in a longitudinal study. In case of Madrid, we have selected a family that was not part of the first report (ES13) but has participated in the research following the same interview and observation protocols of the first study in which the other families participated last year (see Galera, Matsumoto and Poveda, 2016). Adding this family extended the age range of the children in the study, as this family's focal child (ES13g4/5) is younger than other focal children included in the report (they were 8-9 by the time of the second of interviews).[4]

We have contacted the six selected families by phone and/or email and we have explained to them the general goals of the second study, detailing the tools for data collection (audio recording of the visits to the families) and for what and how data would be used (analysis of the audio data, and publication of the results in scientific journals). We highlighted how the participant's confidentiality would be protected and also explained to them how data would be anonymized. Involvement in the study did not imply any direct compensation besides some pastries or children's books. A bag provided by the JRC with some information regarding internet security and a small toy was given to the child participants and their siblings during data collection.

An online questionnaire to all the families

An online questionnaire was sent to all the families who participated in the first fieldwork (Annex 1). The online questionnaire (Annex 2) was designed to collect information about the changes in techno-based literacy practices in the lives of the children and their families. The questionnaire focused on the following aspects, which assembled the interviews as well:

a) Devices: new, drops, expectations.
b) Activities/Interests/Opportunities: new, drops
c) Skills (kind of skills that children have acquired, lost)
d) Mediation/Rules
e) Perceptions (the way they see digital technology, the same as before, different?).

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[4] See Annex 5 for the family portrait of ES13 based on the last year's interview and more about the ES13 family in Galera, Matsumoto and Poveda (2016).

We sent the questionnaire via email and sent a reminder one week later to those who did not complete it by then. Exceptionally, a family filled a paper version of the questionnaire before the interview, and then data was added to the online file. We received 7 questionnaires; from the six families we interviewed and one additional family who did not participate in the second round of interviews. The information collected through the questionnaire was used to prepare the interview (see Annex 3). Section 3.1 synthesises the main tendencies that are observable in this quantitative data set.

A home visit to 6 families

The interviews were conducted at the participants' homes. In the case of Madrid two researchers were always present, one interviewing while the other took a secondary role (observing, asking complementary questions, and taking photos). In other occasions, in order to fit with family timetables the work was splitted and each researcher interviewed in parallel the child and the adult. In the case of Catalonia only one researcher was present in each interview, assuming all the tasks: interviewing, recording the audio, and taking notes and photos.

As a general principle of the interviews, the researchers' goals were to document the changes in techno-literacy practices and routines regarding the first interview. Between both interviews there was a distance of one year time or more. The target information that unchained the questions in the interview were the same as in the questionnaire - see points a) to e) above.

In order to understand changes or continuity in family practices, the questions of this second round of interviews focused on the reasons behind the changes, i.e. the WHY did it change? To this end, all the questions listed in the observation/interview protocol (Annex 4) were used as a 'toolkit' by the researchers. From these shared questions researchers drew in free order issues to help gather data in response to the research questions in the five dimensions that guide the present study (devices, activities, skills, mediation and perceptions, by the child and by the family) when they do not emerge spontaneously during the observation/interview. In the interviews with children, observation and the support tools (i.e. devices or content from the previous interview) were particularly important considering that for some it was difficult to verbalise their own usages or perspectives on the digital devices they use. In addition, the researchers explored and took notes of interesting quotes/stories from the children and parents.

Following the protocol of observations, all the family visits were structured in the following manner:

1. Interview with the focal child (about 40 minutes). We interviewed the focal child following the interview/observation protocol (see Annex 4). We started in all the interviews remembering the previous interview and results as an ice-breaking introduction.
2. Previous questionnaire to the parents (if they had not already completed it online) (about 30 minutes). (See Annex 1 and Annex 2)
3. Interview with the parents (about 45 minutes). We interviewed a parent or two, following the interview/observation protocol (see Annex 4). This part of the interview was conducted in some cases with the presence of children while in other cases they were not present.
4. Closing (5 to 10 minutes): At the end, everyone who participated in the interview got together again. They were asked if there was anything else anyone would like to add or if they had any questions, and the researchers thanked families for their collaboration once again.

On the whole, these home visits took between one and two hours. All conversations about the study and interviews in Madrid were conducted in Spanish, while in Catalonia these conversations took place in Catalan (two of three) and/or in Spanish (one of three), with codeswitching.

As in the previous report, we used Eurostat's classification criteria (2015) for the annual family income (high, higher middle, lower middle, low), age, ethnicity, level of education of the parents or legal guardians and employment situation.

Audio recording

All the interviews, either with the children and with the parents, have been digitally audio-recorded. Photographs were taken with a smartphone or a camera. This is a difference from the first fieldwork, where data was recorded in video as well. The reason behind this decision has to do with coherence between the type of data gathered and the information target, which in this study deals exclusively with changes from the last round of fieldwork.

The researchers have also taken short ethnographic field notes during or after the home visits. The notes focused on the technology artefacts present and observable at home, the changes noticed in the use of particular devices, interesting interactions or perceptions of attitudes. The Barcelona team has also kept a research diary since the recruitment process started (taking notes of how they got in contact with the families, how they have responded, etc.). Also, it is where they have kept a copy of all the exchanges they have had with parents by telephone or in writing).

As soon as each interview was finished, all the raw data from the interview was stored in secure private folder that has been shared only among the members of each research team (Madrid or Barcelona) in charge of the interviews. Only the coded, anonymised data has been shared with the other research team (Barcelona or Madrid) and European researchers.

The protocol of analysis

In Catalonia, for each interview, a full transcription has been done and an archive of photographs has been created. In Madrid, a detailed summary of the interviews and an archive of photos has been created. Then, a family portrait has been written for each of the families. In order to orient this writing process in a consistent manner, we have attempted to include the points specified in the report template designed for the JRC sponsored-study (Chaudon, 2015; Matsumoto et al; 2016).

Regarding the writing of the narrative for each family, it is about 600 words each and includes a picture, when possible. The narrative has been oriented to highlight the change occurred over one year time following the following structure:

a. Information about the child: age, family constitution, special family context
b. Overview of technology at home
  - What they posses (changed from last year, new device, drops, breaking, etc.)
  - What they use/ what children are allowed to use (a year ago/now)
  - How does access take place / ownership (difference)
c. Context of parental use (high, medium, low)
d. Parents' profession
e. Level of the parents' confidence with ICT.
f. Short answer to all three research themes:
  - Use (individual and family contexts)
  - Perception/attitudes (individual and family contexts)
g. Parental Mediation preferences

The researchers' notes, the summary of each interview, and audios have been thematically analyzed, following the protocol of analysis (Dreier et al; 2015). We have first attempted to create a narrative for each research question by family, and then we have approached each of the research questions with the overall information. Four meetings have been done with the teams in Madrid and Catalonia in order to share all the information and work collaboratively on the interpretation of the data.

Regarding the level of media use of parents (high, medium, or low), the Spanish team established the same classificatory criteria as in the previous report, acknowledging that decisions might have been taken differently in other national contexts:

- All the families interviewed in Spain are still basically at least medium level users, because 1) they have smartphones as their primary means of mobile communications; 2) they use some kind of technology at work (computer, etc.). In this way, we evaluated that they use technology for basic communication and as tools for work.
- Some of them are still high users if, in addition, they are active in social media or use digital technologies for leisure, or their hobbies or work are closely related to technology or computing.

3. Changes through a Family Portrait Gallery

3.1. The participants

Table 2 provides basic socio-demographic information about the participant families:

Family code	Member Code	Family income	e	Ethnicity		Sex	Age	Year school/ max level of education		Parental employment
ES3	ES3m39/ 40	Low income		Spanish		f	39/40	University Degree		Unemployed
ES3	**ES3b7/9**	**Low income**		**Spanish**		**m**	**7/9**	**4th grade in Primary Education**		**-**
ES3	ES3g5/6	Low income		Spanish		f	5/6	1st grade in Primary Education		-
ES5	Es5f39	Lower middle class	(*)	Spanish	(**)	m	39/41	Compulsory Secondary Education	(*)	No information
ES5	Es5m37	Lower middle class	(*)	Spanish	(**)	f	37/39	Master Degree	(*)	Administrative Assistant
ES5	**Es5b6/8**	**Lower middle class**	**(*)**	**Spanish**	**(**)**	**m**	**6/8**	**Third grade in Primary Education**	**(*)**	-
ES5	Es5g2a	Lower middle class	(*)	Spanish	(**)	f	2/4	Kindergarten	(*)	-
ES5	Es5g2b	Lower middle class	(*)	Spanish	(**)	m	2/4	Kindergarten	(*)	-

ES13	ES13m38/39	Higher middle class		Spanish		f	38/39	Advanced Technical Training		Administrative Assistant
ES13	ES13f39/40	Higher middle class		Spanish		m	39/40	Advanced Technical Training		Chef
ES13	**ES13g4/5**	**Higher middle class**		**Spanish**		**f**	**4/5**	**Kindergarten**		-
ES13	ES13b2/4	Higher middle class		Spanish		m	2/4	Kindergarten		-
ES9	Es9f41	Lower middle class	(**)	Spanish	(**)	m	41/43	Primary Education	(*)	Unemployed
ES9	Es9m42	No information	(**)	Spanish	(**)	f	42/44	No information	(*)	No information
ES9	Es9sm42	Lower middle class	(**)	Spanish	(**)	f	42/44	Secondary Education	(*)	Unemployed
ES9	**Es9g7/9**	**Lower middle class**	**(**)**	**Spanish**	**(**)**	**g**	**7/9**	**3rd Grade Primary education**	**(*)**	**-**
ES9	Es913/15	Lower middle class	(**)	Spanish	(**)	b	13/15	4th year in Secondary Education	(*)	-
ES9	Es9sb20/22	Lower middle class	(**)	Spanish	(**)	b	20/22	No information	(*)	-
ES9	Es9ss16/18	Lower middle class	(**)	Spanish	(**)	s	16/18	No information	(*)	-
ES9	Es9sb9/11	Lower middle class	(**)	Spanish	(**)	m	9/11	No information	(*)	-
ES10	ES10f40/42	High	(**)	Spanish	(**)	m	40/42	University Degree	(*)	Online Marketing Manager
ES10	ES10f39/41	High	(**)	Spanish	(**)	f	39/41	University Degree	(*)	School Teacher
ES10	**ES10b6/8**	**High**	**(**)**	**Spanish**	**(**)**	**b**	**6/8**	**3rd grade Primary School**	**(*)**	**-**
ES10	ES10b4/6	High	(**)	Spanish	(**)	b	4/6	Last year of ECE	(*)	-
ES11	ES11f40/42	Not specified	(**)	Spanish	(**)	m	40/42	University Degree	(*)	Private sector and historian
ES11	ES10f39/41	High	(**)	Spanish	(**)	f	39/41	University Degree	(*)	Nursing

ES11	ES11g7/9	High	(**)	Spanish	(**)	g	7/9	4th grade Primary Education		

3.2. A first approach through the online questionnaire

We sent the online questionnaire to all the families that participated in the first round of fieldwork (2015) and we received 7 answers out of 11. The overall families that filled the questionnaire are middle-lower class and parents are between 45-40 years old. According to the parents, the focus children in the study can mostly read and write properly (71%).

The key results of the questionnaire (Annex 3) are summarised in the following statements:

- Tablets, TV and Laptops are devices present in almost all households (only one family does not have a tablet at home). However, only 42% of the households have desktop computers. Home video game consoles are more present (71%) and more used than mobile consoles (42%).
- Parents consider TV (100%) and Tablets (71%) as "family devices", and both are generally used or shared by all family members.
- TV is the device that children use more freely, without the access limitations that other devices like mobile phones or computers have. On the other side of the spectrum, smartphones and laptops are limited in its use because they are considered "parent devices".
- Most of the children and the families consider ICT an important tool used with educational, family and social purposes. Most families recognise the importance of ICT in learning (85%); 71% of the parents consider that ICT is a useful tool to reward or punish, as well as a tool to have family relaxing moments. However, families are concerned about the addictions (57%) - particularly mothers. Mothers are concerned that ICT can unchain addiction and recognise that they are less confident with ICT than their husbands (41%).
- According to parents, children's favourite devices are Tablets, TV and Smartphones.
- In general parents consider that their children are good ICT users especially in playing games, watching videos or using the digital in relation to school contents. They also recognise that children are less confident in creating multimedia content, managing safety protocols or downloading apps. Interestingly, this last point stands against children's responses in the interviews in which they have said (in some cases even show) that they are able to download apps easily.
- According to parents, children learn how to use ICT alone (87%) or through

other family members.

- All the parents state that they try to be close to children when they are using ICT but only 71% of them talk about issues of cybersecurity with their children or of being involved with them in digital activities.
- Most of the families (71%) admit that they do not use any parental control software and that they have a few limitation rules. However, most parents state that children have to ask for permission if they want to use ICT. Only one family has not set up any ICT limitation.

3.3. Family portraits

Family ES03

South Madrid Region, Spain

Family members

- Mother, 40 (ES3m39/40)
- Boy, 9 (ES3b7/9)
- Girl, 6 (ES3g5/6)

Narrative

As in the first interview, the family continues to live in a 3-bedroom house in a historical city in the south of Madrid. Their uncle (ES3m39's brother) lives in a upper floor in the same building and has a lot of contact with the family.

"I like those [individual games] more because you do not die" (ES3b7/9)

The child **ES3b7/9** lives in a patchwork family and the situation has not changed over the last year. He continues to live with his mother and spend a weekend every other week with his father. Three family members have participated in the interview (Mother ES3m39/40, sister ES3g5/6, and the focal boy ES3b7/9). A separate interview was also held with the mother ES3m39/40. The mother, the other siblings and family members of this patchwork family continue to have a good level of knowledge and confidence with ICT. However, the mother is very concerned about her children's contact and uses of the digital devices and is aware about the key role that their father and uncle have as motivators of new learning related to digital culture. The mother perceives that in general things have not changed, either her children's uses of digital devices or her logic behind her way of organizing and establishing the rules regarding the digital

activities. However, certain differences were revealed in the two interviews, as described below.

Regarding the devices that are present in the house, there are two main changes in comparison to the last year: an addition of a new device and the abandonment of an old device. The newest device was a playstation, which was handed down by the son of the mother's new partner. However, the game console is version 2 and the boy ES3b7/9 complains that it is not "the new one", which is the one that his friends or cousins have. In the video console, they have many games, but some of them are confiscated by their mother because they are very violent. The boy ES3b7/9 and his sister ES3g5/6 showed the researcher the different games they play most (Guitar Hero and FIFA), and indicate the minimum age at which each game is allowed to be played. There were some other games that were marked at an older age than their age, and when they were asked about the reasons why it is not adequate for smaller children, they argued that it is because of the game's difficulty, not because they are violent. Their favourite games are the following two: Car racing games and Guitar Hero. The boy and his sister usually play some games together, and for those games which can be played by only one person they take turns. Interestingly, the boy ES3b7/9 argues that "I like those [individual games] more because you do not die (*me gustan más esos porque no te mueres).*" In addition to Guitar Hero, the game he points out as the one he most likes is Clash Royale, which he plays on the mobile phone and on the computer. He defines it as something that "everyone plays (*todos juegan)*".

The other change in the devices is that the family no longer has a Wii. The boy ES3b7/9 sold it because they were not using it, and they saved the money to buy other games like Guitar Hero. The rest of devices are the same as before, except the Ipod which is no longer used to listen to music. They mainly they use their uncle's laptop to listen to music and occasionally their mother's mobile phone. Finally, another device that he started to use is the old laptop that his uncle gave him, but both the boy ES3b7/9 and his mother commented that he rarely uses it because it is full of viruses and the boy has not managed to fix it.

Regarding the activities, they seem to continue to do the ones that appeared in the last round of study, although the mother believes that the boy ES3b7/9 now sees fewer videos, and he listens to less music because he used to do so with his uncle, but now the uncle works more on the computer and the boy cannot listen to music. Nevertheless, the boy says that he likes listening to music and he continues seeing videos in the houses of his friends and of his uncle. His sister is now 6 years old and she has started using the mobile phone for programs such as Whatsapp to communicate with her family outside the home.

Another new issue regards tablet use. Although the boy ES3b7/9 does not have a tablet yet, he perceives that it is the best situation for him; he only plays using his friends' and his father's girlfriend's tablets. The father has more devices such as

mobile phone, Tablet, Smart TV, etc. and is more permissive regarding the uses. He has also given the boy an old mobile phone, but he leaves it at his father's house because he says his mother does not let him use at home.

The boy commented on using digital devices more intensely, something that the mother also indicates. The mother has numerous rules regarding time tables, programs, limitations on TV and on the internet. The children speak clearly about them, and indicate that they know their mother will not change the rules even if they have more money to buy, such as the Tablet or a more modern playstation. But the boy ES3b7/9 says he likes digital devices a lot and knows a lot and even taught his grandfather who now has a mobile phone. Regarding the mobile phone, the boy's skills and preferences seem to have changed. Especially in the intensity in the uses of the mobile, the mother indicates "If I let him, he would be a Hacker, he loves [the mobile phone] and he is very good (*sí yo le dejara sería un Hacker, le encanta y se le da muy bien*)".

At school, there have not been notable changes, if anything a minor change is that they use less technology. Digital technology is especially used for searching information and the classroom blog is said to be used less than last year. The boy ES3b7/9 also remembers that a year ago they had a Tablet at school because a group of them used it to learn math, and that he had a great time with it. He said: "I enjoyed it a lot (*yo disfrutaba mucho*)" but he continued to comment, "[the researchers who work with the Tablets] do not come anymore (*ya no vienen más*)."

Two factors appear important in ES3b7/9's special interest for digital technology. First, the mother says that with the age her children have gained more skills and since they seem to be good at them she does not believe that she has to promote their uses of digital technology because the time to do so will come. She sees gender differences in her children's digital activities, and she is more concerned about the boy ES3b7/9 than about the sister. Therefore, they limit weekly digital activities to television and the rest for the weekends, except when they are at the father's house or at the uncle's house. These rules are fulfilled without any problem, with some punctual punishments.

Another factor is the appearance of the mother's new partner. He shares the mother's vision, especially fears for content not suitable for children, including those in music videos. The new partner organizes many activities on the street and in nature, and both children enjoy it. So the mother believes that it is better for now to focus on educating the children principally in that way, such as on the street, in nature, and doing the crafts, etc. And then later they will learn how to use the ICT.

Family ES05

South West Madrid-CLM, Spain

Family members

- Father, ES5f39/40
- Mother, ES5m37/38
- **Boy, ES5b6/8, Third Grade in Primary Education**
- Girl, ES5g2/3
- Girl, ES5g2/3

Narrative

ES5b6/8 and his family live in a semi-detached house in a village in the Madrid-Toledo border region. The family consists of five members: the parents, ES5b6/8 and two younger twin sisters. The grandmother also lives with them. In the house, many electronic devices are present: three televisions, two laptops, music players such as the iPod, Tablets, Wii, Playstation, mobile phones and 3D glasses.

The parents' perception seems not to have changed in essence, except that now the boy's use of new technology is more intense, and he easily gets hooked up watching videos or playing some video games. Regarding devices, the laptop appears to be the one that he uses the most, fundamentally to edit photos, look for things on google, and watch videos. Some changes from the last round of interview is that the Wii has disappeared; he almost does not use it anymore, instead he uses the portable consoles. Another change is the addition of a pair of 3d glasses that he got as a gift of the 'Three Kings' but he cannot use it normally.

About the practices, parents and son coincide that watching videos and photos has intensified. Especially what appears as a change is to watch videos from the playstation on TV. They recognize that the device that they use the most, i.e TV, has not changed but the mother perceives that through updating the TV the possibility of seeing Youtube on the Playstation suddenly appeared (*de repente apareció en una actualización*). However, the boy ES5b6/8 describes the

> "you see better on TV than on the laptop or on the Tablet"
> (ES05b6/7).

change in a different way: he saw in an advertisement that you could watch a video from the playstation on TV at his friend's' house and so he started doing it with his own console. For him, this change is an important one because in addition to videos, "you see better on TV than on the laptop or on the Tablet (*se ven mejor en la tv que en el portátil o en la Tablet*)." He also says "I like to download games because they

are free and you can have many at the same time, although it is very slow to download (*me gusta bajarme juegos porque son gratis y puedes tener muchos a la vez, aunque se baja muy lento*).”

Parents continue to use various strategies to control access to content that they do not want their children to see. For example, they do not put their user account on the Tablet so that their children do not access videos on youtube that do not seem appropriate, or they put limitations on the television. They also have a timetable for use, especially letting them use the devices only during the weekends. These controls are respected especially the timetables, ES5b6/8 admits that they do not really have time, "Monday, Tuesday, Wednesday and Thursday I have many things to do so I do not miss them [the digital devices] (*lunes martes miércoles y jueves tengo muchas cosas que hacer así que no lo echo de menos*)". However, they appear to have more autonomy and strategies to access videos that parents do not want them to see; the parents know that sometimes the children do access those videos and believe that they usually detect it at the end.

About the school they indicate that they do not make any special use of the digital devices compared to other schools of the area. But they are not concerned about it. Except the classroom blog, they do not seem to be necessary at the moment. The parents indicate that at the moment they are concerned more about other things that the children are having difficulties, such as relationships, sports, etc., and that they are not concerned about the ICTs too much because they are doing good for their children at the moment. However, the parents are looking for activities related to robotic or programmings that the children might like but they are not close to home, and scheduling problems prevent it, but they would like that their children participate in those types of activities sometime.

They point out that ES5b6/8 has other interests outside digital activities, such as new games, solar panels, the Lego etc., to which he is hooked. The child also speaks of these activities as some things he likes, although about the Lego he also plays it on the Minecraft, not only constructing with actual pieces.

About the ways of learning the mother continues to indicate that the children learn themselves, although some of the things, such as the use of Photoshop appear as something that she taught them. And what appears as concerns are the online connections through the games, and those regarding the contents. ES5b6/8 says he does not like to play online because other people can ruin his games. He prefers to play alone, or with friends when they are at home.

Family ES13

Madrid, Spain

Family members

- Mother (ES13m38/39)
- Father (ES13f39/40)
- **Girl (ES13g4/5), Last year of Kindergarten**
- Boy (ES13b2/4)

Narrative

The family continues to live in the same apartment in a new area in Northeast Madrid, but over the last year they have bought a small home in a village in the Madrid Northern mountains which they visit almost every weekend and has changed substantially their routines and priorities.

The mother indicates that in essence the devices that are present at home have not changed: except for a Chromecast and the new game console, the devices remain the same. They have bought a Tablet (an Ipad) because the Girl ES13g4/5 likes it a lot but they will give it to her when she turns 6, saying "ES13g4/5 is also obsessed with having a Tablet, for her birthday she is going to have one as I already bought a second hand one through Wallapop [a free, mobile virtual flea market]" (*También está obsesionada ES13g4/5 con tener una Tablet, por su cumpleaños va a tener una tablet que ya la tienen comprada por wallapop de segunda man*o).

Regarding the uses, the ones that appear with more intensity are the music videos and construction games. And the mother indicates that the children also get angry with more intensly when they want to use it. The girl ES13g4/5 says she likes to play with her mobile phone, watch movies and TV shows, and that the Tablet is what she wants the most.

The mother says that she is very concerned that when they use digital media they are completely "absorbed", and that it seems to her that they do nothing, they just get carried away. The girl ES13g4/5 says "it's that I'm using it [the mobile phone] a lot and I became an addict" ("*es que lo estoy usando mucho y me hecho una adicta*").

> "it's that I'm using it [the mobile phone] a lot and I became an addict", Girl, 5 (ES13g4/5).

The mother says with respect to the mobile phone that she and her husband have a problem with it and it is normal for their daughter to have one too, but it makes her worried. The mother states "My daughter likes construction games like Candy Crush, I think it's because she sees us - me and my

husband - play it, I'm also very hooked" (*A mi hija le gustan los juegos de las fichitas como el Candy Crush, creo que es porque nos ve jugar a mí y a mi marido, yo es que estoy muy viciada*). She is also concerned about access to inappropriate content, but she still does not put passwords or limiters. It is because she is always around when her daughter uses the digital device.

In the interview, the mother talked about changes that have happened since they bought a house in the country. It has generated in the family a reorganization of what they used to do and has made them reflect on things that are not done "well" in Madrid and that all leave aside when they go to their second home. The girl ES13g4/5 says that they can not use the digital devices in the village, except television. She says that her father sometimes gets angry because she and her brother use the TV and other devices a lot, and when he does they stop using them so that her father does not get angrier.

The mother says that the ways of learning remain the same, the parents help the children install the applications but once they are installed the girl ES13g4/5 uses the devices alone. She likes them a lot, but the mother believes that he daughter has problems with attention and concentration and so the parents prefer to control that the children only use the digital devices on weekends, except the TV. They recognize that the children watch it almost always because it is on a lot of the times, especially at breakfast and at dinner.

They have established certain joint activities associated with TV, watching movies on Fridays and listening to music that parents like. The girl ES13g4/5 looks for videos on the Internet and they are now trying to be close to see what they are and if they are suitable or not. Another change following ownership of a country house is that they talk more between the mother and the girl.

Regarding school, they do not use much the ITC, except the digital blackboards that are new and a classroom blog that allows the mother to see what they have done in the school. The mother indicates that she is now very aware that the way to control the abuse of ICT is to be with children when they are using the devices, but she does not know very well how to do things with related to ICT. Perhaps because of her ignorance, the mother believes that there are more important things to teach her children now than using digital technologies which they will learn later.

Family ES09

Barcelona Province, Spain (Catalonia)

Family members

- Father, ES09f41/43
- Mother, ES09m42/44
- Stepmother, ES09sm42/44
- **ES09g7/9, 3rd grade in Primary Education**
- Brother, ES09b13/15
- Half-brother, ES09b20/22
- Step- Sister, ES09ss16/18
- Step- brother, ES09sb9/11

Narrative

ES09g7/9 is almost 9 years old now and is part of a patchwork family. She continues living with her mother and spending every other weekend with her father. Four family members have participated in the interview (father: ES09f41/43, stepmother: ES09sm42/44, Step-brother: ES09b9/11 and ES09g7/9). The interview took place in the father's house (ES09f41/43). As in the first interview, he presents himself as fascinated about ES09g7/9 academic performance and self-control. Both the father and the other siblings continue to have a good level of knowledge and confidence with ICT. However, the stepmother is very concerned about the overcontact and the use of the kids with the ICT.

During the last year, the presence of technology has increased at the paternal home. Besides the devices that the family already had (1 tablet -unused-, 1 Wii, 3 computers) they have acquired some new ones. The family now has a brand new smart TV, an old -unused- tablet, 3 computers, 1 new Play console (according to her ES09g7/8 "the new Play is better because it is more expensive, and more sensitive, and the quality of images is higher"), 1 Wii, and several brand-new smartphones (however, ES09g7/9 possesses and uses the same one she had the last interview). Like last year, children are still allowed to use all the devices except the father's computer. A difference among the siblings is that ES09g7/9 is still not using ICT devices on a regular basis, an attitude that has been reinforced during the last year.

> "Time ago, the mobile phone was my favorite device because it was new. Now, I'm used to it. I am also used to the smart TV, but I'm not getting bored of it"
> ES09g7/9

She continues using the mobile phone only to communicate with her parents and other relatives. However, the mobile phone is not her favorite device anymore; a brand new Smart TV has become her favorite. Her father has installed Chromecast which allows her to watch YouTube content on a huge screen and with a better sound system. The Smart TV is not only new, but has a bigger screen than the previous TV. It is also faster and sounds better than any other device. These are the main reasons to change her preferences. Another change is that she stopped using the tablet, mainly because it is broken, but also because she does not miss it.

In terms of self-analysis, ES09g7/9 recognizes that she has developed new skills that help her being a better user of ICT such as being quicker in writing messages, being able to download content, to update and optimize device performances, produce dance videos and to customize programs and apps. Another change is her capacity to recognize how to improve speed on devices. She has also learned how to optimize space and energy consumption as well as how to protect devices with passwords.

ES09g7/9's parents commented to the researcher that nobody shows her how to deal with technology. Adults only help her when she asks for it explicitly (at least at her father's place). The few existing rules (time exposition, types of products, i.e. only freemium ones are allowed) are still settled by the mother. Now that ES09g7/9 is older, she is more conscious about the risk of overuses of computer games "I can hurt my eyes" (*em puc fer mal als ulls…*). She also recognizes the differences of risks among devices: "On TV I can't hurt my eyes because there is a distance, but with the mobile you are like this, very close" (*A la tele no em puc fer mal als ulls perquè està a una distància, però al mòbil estàs així, molt a prop*). She is also still very concerned about her school performance and she has maintained a good self-regulation with ICT. She gets frustrated with her relatives when they do not recognize her passions: "I adore dancing. I just love it! It's the best in the world" (*El baile lo adoro! Me encanta! Es lo mejor del mundo*). On the contrary, she hesitates to acknowledge her little interest in video consoles, which are highly appreciated by her siblings: "Well…. about the Play… I'm in between liking it and not liking it" (*Bueno… la Play… estoy entremedio de si me gusta o no*).

The father, ES09f41/43 remains a high user of technology. He is very proud of having been able to repair his car watching YouTube tutorials. He argues that Internet is a key source of information:

> "Internet is fundamental in a house. If you need something, who do you ask? Do you choose to find it in a book? Do you go to a library? Who is going today to a library? For searching information, nobody" (*Internet es fundamental en una casa. Si tienes algo, a quién preguntas? Te vas a un libro? Te vas a una*

biblioteca? Quien se va hoy en día a una biblioteca. Para buscar información, nadie).

The father still loves playing computer games but he never plays with his daughter. He is aware about the self-regulation capability and school performance of ES09g7/9. However, there seems to be a lack of communication regarding ICT uses "because she never asks me: she is not into technology" (*Ella no me pregunta nunca: ella de tecnología no es*). To sum up, it seems that novelty, entertainment, image and sound quality as well as speed might play a role in ES09g7/9's preferences. Favorite devices have changed over time but all the devices remain a support to communicate, to dance or to listen to music. ES09g7/9 has also improved skills, regarding the use, the content selection criteria and autonomy during the period analyzed.

Family ES10

Barcelona, Spain (Catalonia)

Family members

- Father, ES10f40/42
- Mother, ES10m39/41
- **ES10b6/8, 3rd grade of Primary Education**
- Brother, 6, ES10b4/6, 5th year Early Childhood Education

Narrative

ES10b6/8 is now 8 years old and his brother (ES10b4/6) is now 6 years old. They still live in a three-bedroom flat in a residential area located in the centre of Barcelona. During the last year, the large presence of technology at the family home has intensified and updated, using Amazon as the main shop. In 2016, the family had one large TV in the living room, one iPad, two iPhones (one for each parents), two old other mobiles without SIM card (one of which was a Blackberry) and two laptops (a large one and a small one). In 2017, the family has bought a new

R: What do you do in Youtube? (…)

ES10b6/8: I look for things I don't know, because **He** tells me

[*Què hi fas al Youtube?/intento fer coses que no puc fer/com per exemple?/busco coses…/de què? Posa'm un exemple/pos busco coses perquè si no sé lo que és això, ell m'ho diu…*]

large TV, a new desktop computer and one more Tablet. As happened last year with the first family tablet, the 'new tablet' was brought as a gift from the Three Kings. This year it has been a present for ES10b8, who got astonished: "Joking, I asked for a tablet and I got a real one!" (*de mentida, vaig demanar una tablet i em van portar una tablet de veritat!*). The old tablet is a family device although it is in practice used by his brother. Parents have also renewed their smartphones.

Now, parents allow brothers more screen-time than last year, but the norms of usage for all the devices have become slightly more explicit, clear, and restrictive. Brothers can watch TV during schooldays and weekends until 9pm, but the Tablet is limited to weekends. They need the parent's permission to play with the Wii or the Play, something they do sporadically, and also to use the new desktop computer or the parents' mobiles (according to the father, these gadgets have password for maintaining the parents' privacy and the screen clean). Regarding the Ipad ES10b8 is allowed to bring it with him to his bedroom, which is actually his preferred space for using the device, arguing that "there, I don't listen to any noise" (*allà no sento res*). He agrees with the restriction of keeping the new tablet in the home context, so when they go out he takes the old one with him. ES10b8 is now more aware of the importance of asking permission to parents and recognises that sometimes it is unavoidable; for instance, for playing with the Wii or the Play because "we don't know much about how it works" (*no sabem gaire com va*). He is also aware that the application of the rules 'on the fly' is a flexible one; parents do not mean the same time length when they allow him to play for a "short time". Moreover, new rules among the social order of the siblings have emerged establishing new notions of ownership brought by the 'new tablet'. Now when ES10b6 wants to play with ES10b8's tablet, he needs to ask permission: "I always let him play with my tablet, but he needs to ask first" *(sempre li deixo jugar, però m'ho ha de demanar)*. All devices at home that can have a password now have a password. This is a difference from last year, since only the parents' mobiles used to have one. ES10b8 knows (or thinks he knows) all the passwords except the one for the the computer one, as it is a "secret".

The brother and the boy sometimes watch cartoons (eg. *Totally Spies!*, *Tom and Jerry*) on the TV/iPad and in case of disagreement they negotiate the turns among themselves. ES10b6/8 helps his little brother to find the videos he wants to watch, as he can write the title down. He has recently learnt to use the voice-writing application *Google Voice* and has incorporated as a resource for searching online products. Although ES10b6/8 has gained autonomy searching online products, he is still not confident in relation to solving other tech-related situations (i.e. download a tricky app, solving a problem in a game), and at those points it is ES10b4/6 who usually solves them, although he still does not know to write well. ES10b6/8 has gained another new bad experience online: last year's interview he reported on watching a group that killed people. This time he has been shocked by a video about Snow White full of swear words.

ES10b6/8's leisure preferences continue to be: TV, tablet and dressing up. Some leisure practices that were central in the past (listening to music) have been absorbed by the tablet: now he curates his own playlist and watches singing songs on Youtube videos. Dressing up coexists with digital-related practices such as dressing girls or decorating houses applications.

The father is a high user of technology and has a good level of confidence with digital technologies. He works in marketing, selling products online. The mother's engagement with technology in everyday life seems lower (she works in a secondary school). At home, some devices such as the Wii are under the father's control. Regarding the parental mediation on technology, parents have become slightly more severe: "I think that we are more severe now because the usage has augmented" (*yo creo que somos un poco más severos porque el uso ha aumentado* - ES10f41). As a consequence of the autonomy that the brothers are developing with the tablet, they have developed new strategies. The first is negotiation of the moment to leave (or put aside) the tablet. In order to avoid temper tantrums, the parents warn the children in advance and prepare for the moment. The second consist of revising periodically the tablets to control the apps and they ask the brothers to clean it "because they download lots [of apps] that they collapse the internal memory" (*porque se bajan tantas que saturan la memoria interna*). The father repeats the idea that rules are the way to control the "ludic function" that technology exerts in children's lives. According to the father, ES10b6/8 is aware of the norms and knows that if he crosses the limits, this will imply prohibition and the withdrawal of the tablet. The father keeps thinking that technology is essential for the future of his children. Moreover, he makes clear that, although the brothers have different ages, he does not make any difference due to the age: "In terms of technological devices, there is no difference" (*A nivel de aparatos tecnológicos, no hay diferencia de edad*).

Last year's interview made apparent some divergences in the points of view between parents. This continues to exist. The father does not see technology as a negative influence in life while the mother is worried about addiction and killing games.

Family ES11

Barcelona Metropolitan Area, Spain (Catalonia)

Family members

- Father, ES11f40/42
- Mother, ES11m39/41
- **ES11g7/9, 3rd grade in Primary School**

Narrative

ES11g7/9 is 9 years old and still is a single child of the family, adopted, and lives in the same four-bedroom flat in a city 30 kilometres away from Barcelona. In the interview, the mother and the child were involved while the father was present in the livingroom and participated occasionally. In the home sphere the family still has the same devices: an iPad, one children's tablet, a laptop, a desktop, a TV, two smartphones and a Wii. The only new device that entered the home environment during the last year is a Nintendo. The girl's description highlights external traits of the device and the uses it has allowed for her (see the quotation)

> "Nintendo is an object for me alone, it is small and the Wii is a device connected to the TV. But the Nintendo is not connected to the TV. Wii allows you to play dance and games. Nintendo does not allow you to dance. You can play Mario" [*Una Nintendo és una cosa que és per tu sol, que és petit i la Wii és una cosa que es fa anar a la tele. Però Nintendo no es fa a la tele (...) amb la Wii pots jugar a ballar i jocs. I amb la Nintendo no pots ballar. Pots jugar al Mario*]

They still have an iPod for the car, which ES11g7/9 does not like, as it has her father's playlist, and so in the car she prefers her CDs or the radio. As last year, the child is allowed to use digital technologies on her own except parents' smartphones. Regarding the uses of smartphones, it is usually limited to seeing pictures or sending some WhatsApp messages to her school friends, and parents should always be close to her. ES11g7/9's favourite activities are still dancing, singing and playing with Barbie dolls. Her TV habits have changed and she is not watching the same content as in the past. She prefers now TV Channels with teen content rather than others such as Club Super 3 (a children's content channel similar to Nickleodeon). She stopped watching cartoons or series such as Violeta for being a great fan of the US singer-dancer Ariana Grande.

> "Nintendo is an object for me alone, it is small and the Wii is a device connected to the TV. But the Nintendo is not connected to the TV. Wii alows you to play dance and games. Nintendo does not allow you to dance. You can play Mario." (ES11f7/8).

Actually, one of ES11g7/9's dreams would be to meet this artist in person. Music, dancing and singing still plays an important role in ES11g7/9's day-to-day life. She was very furious and disappointed when the music channel Los 40 Principales (Music Channel similar to MTV with content such as Top of the Pops) stopped its podcasts, but she immediately looked for an alternative channel by herself. Her

favorite device is still the Ipad. However, she does not use the children's tablet anymore. She knows the features and possibilities every device at home has. She is still mostly watching some video clips, listening to music or to dance via Youtube. She knows how to search information on Google or Safari but she prefers YouTube as it is more visual. She even says "I like to *watch* songs", instead of *listening to* songs, which involves new technical possibilities and new linguistic uses.

She has now more autonomy and control over the devices. She is mostly googleing alone to look for content as her literacy skills are better. She is able to look for information and she is slightly more concerned about the dangers. She asks for help when she has spelling problems or when the iPad gets blocked. She has developed other strategies to look for information, for instance using the Voice Search systems such as Siri or Google Voice. However, she is not always using them properly and she plays with and insults Siri just for fun. She has also developed more consciousness of battery control. Actually this is the first thing she does when she takes the iPad. She ensures herself that the ipad have enough battery and that she can use it properly. ES11g7/9 still uses ICT mainly as a support to do what she likes: listening to music and dancing.

Due to the increase in ES11g7/9 autonomy parental mediation has changed. They have had to develop new strategies to control time exposure and content: ongoing password changes and content control. This control is perceived as authoritarian by ES11g7/9: "My parents have currently seized the iPad". However even if they are aware that ES11g7/9 is not spending a lot of time with ICT, they try controlling her usage in order to protect ES11g7/9's image in social networks.

At her school, the use of ICT is still limited (a few computers available at the school library, and digital blackboards...). English is the only subject that uses the computer at school and at home. Parents are dissatisfied with the lack of ICT in education. They would like to have open access to the school content, as they have it for the English programme. This would allow them to work at home and to prepare ES11g7/9 better for the future.

Parents' engagement with technology in everyday life is still medium. The mother still thinks that contact with digital technologies is necessary, but she likes to explain and demonstrate to ES11g7/9 about the dangers that internet might have. For instance, she shows ES11g7/9 some strategies to optimise the search and to avoid risks (avoiding keywords such as pretty girls, nice girls and so on). Parents are concerned about the threats of ICT as well as recognising the opportunities as it was forecasted in the last interview.

4. Findings

The presentation of the main findings is organized through the five dimensions that were considered in the description of the digital uses of children in the first study in 2015: devices, activities/interests/opportunities, skills, mediation/rules and

perceptions. In particular, the analysis of the family cases (see 3.3 Family portraits) has been developed considering the four topics or dimensions that were identified in the first study and that were linked to the core research questions of the study: use, perceptions/attitudes, individual context, family context (see Table 1 in the Introduction Section). Using the same reference frame provides in this section an updated picture of the digital uses of children and makes possible a detailed comparison of the two moments in time.

4.1 How did the engagement of children under the age of 8 with new (online) technologies evolve over the course of a year?

Our findings show that the ways in which the Spanish children of our sample engage with new (online) technologies have evolved in relation to two main aspects: a) technological devices available at home and b) new social/leisure practices in the peer and family contexts. Further, these changes operate both at an individual and a family context.

Regarding digital devices, some general changes are reported in relation to the devices that are present at home. Some devices have been shelved or abandoned, like old tablets and mobile phones. The reasons behind this disinterest includes problems with the software (i.e. updates, virus, slowness) or the hardware (i.e. broken screen) but, in most cases, it because they are replaced by a newly acquired device. Indeed, that children preferring brand new devices was a pattern found in the study. Some of the reasons expressed are that new devices are bigger and faster.

At an individual level, the analysis of the type of devices shows some patterns in relation to the children's preferences. TV remains the most frequently listed as favorite device, especially in those households that have smart TV with Chromecast, a resource that allows the visualization of Android and Internet content through the TV screen. The rapid incorporation of these new resources to the TV that allow connection/connectivity with other screen devices is the key to understand its success and centrality in family life. These resources, like Chromecast or also Spotify, seem to have replaced the iPod device, which now has been "downgraded" to a secondary level in children's preferences and use. On the other side of the spectrum, through this fieldwork we confirm that the Wii has become an unused device regardless of its presence at home as most of the families have reported a low use of the Wii or no use at all in both fieldworks. Considering that a Wii is a device that includes family or social activities, the question that remains is if this lack of use is due to the discoordination between the family routines and cohesion or due to

other issues such as the problems that the platform has with connectivity, its design or a misguided marketing strategy.

The devices that have been newly acquired in the household we studied are tablets (ES3g5/6, ES10b6/8), the Nintendo (ES11g7/9) and the Playstation, usually through giving (or receiving) it as a Christmas present (mainly during the 'Three Kings / Wise Men' celebration in Spain on the 5/6th of January) and birthdays. In ES3g5/6's case, tablet was an object of desire (they had one tablet that broke down and the mother had promised to buy another one). In ES10b6/8's case, he received a tablet as a Christmas present and his sense of property quickly emerged (he set up some norms for his small brother when he wants to use it). In the case of one family, a laptop has become property of the child. Some families have acquired a Play (ES9g7/9) or have recuperated an old one that was unused and incorporated online connection to the device that they already had (ES5b6/8). ES9g7/9 thinks that the new one has better graphic quality. As a general pattern, brand-new e-devices (tablets above all) enter the family home as presents in Christmas or birthdays. A part of our fieldwork was conducted after Christmas 2016-17 so we could tap in well into this aspect. Interestingly, tablets were the most frequent e-device Christmas gift, contrary to predictions in the media, which pointed to connected toys as the new digital gadget, something that is not visible in our data (cf. Mascheroni and Holloway, 2017).

Regarding use, children have incorporated into their digital repertoire the uses of new accessories (eg. Chromecast to the TV) that have been added to the family space. Moreover, their uses have changed in relation to their interest in new contents or games. This is especially evident with the TV. For instance, when we compare the uses of TV last year and this year ES11g7/9 has changed from *Club Súper 3* (a local children's program that includes cartoons and other contents) to Disney Channel (an international one). However, the tablet is still used for accessing audiovisual content on Youtube or games. Another way in which new uses have developed is related to contexts, persons and practices outside the family, above all, friends and cousins. For instance, ES10b6/8, discovered a game in an entertainment computer in the building where he does theatre as an after-school activity and then he searches the game at home. Regarding the mobile, some children have begun to send oral messages using WhatsApp through the parent's mobile phone (ES11g7/9 sends greetings to family members and friends with an oral message). They also 'play' with emoticons. Interestingly, some children have reported using Youtube as a resource for solving problems. For instance, ES05b6/8 has started doing it since he has seen a friend doing this too.

In relation to the learning-based uses, the digital activities required by the school as homework tasks have increased slightly. Some of the participant families reported

reading the classroom blog and/or engaging in particular digitally based homework tasks, which needed the collaboration between adults and children. For instance, ES05b6/8 explains that the music teacher asked the students to search for songs on Youtube. ES11g7/9 explains that she has a digital textbook for studying English and that she engages with the activities in the father's computer, always in his presence and with his active mediation.

In the family context, parents continue using digital devices on a daily basis. In general, the number of parents' digital devices has increased or the devices have been substituted. Parents' uses of digital devices is still shaped by their communicative and professional needs. They communicate with family members and friends using particular social networks such as WhatsApp or Facebook. For professional goals, they use mobile phones, laptops or computers.

Regarding the family dynamics, no major changes have been identified. Family dynamics around digital technologies continue to be relatively homogeneous. As described in the first fieldwork, parents allow the uses of digital media mostly during the weekend and holidays. During school-days they restrict the use with time limitation and by organizing after-school activities. Most families are still concerned with access to inappropriate content (i.e. violent or sexual content) and with the psychological effects from the uses of the digital devices (i.e. overexcited reactions, isolation) and that is why they monitor closely what applications children use and download or what sites they visit, if they do not restrict online accessibility of the devices altogether.

An interesting change has been documented in one of the families, linked to the fact of allowing more digital autonomy to one of the children by giving him a brand-new iPad. In this family, the new digital artifact (i.e. Ipad) has given him new and more digital responsibility to him, but in parallel it has led to marking clearer division of the ownership of certain devices; parents have intensified the usage of passwords in their own mobile phones so that children cannot use their mobile phones. As such we could see in this round of fieldwork more advanced negotiation of properties between parents and the child.

4.2 How did the perceptions of the new (online) technologies by the different family members evolve in the course of a year?

In the first round of fieldwork, perceptions regarding online technologies were expressed in distinctive ways by children and adults in the interviews. While

parents' perceptions were verbalized and usually reasoned, children's perceptions tended to be implicit in their responses and more emotionally-driven, where verbal information was typically enhanced with non-verbal resources such as emotions, facial and body expression, pointing, and showing objects, locations and behavior through place and action. However, in this second study, we could observe the evolution in children's oral expression, which was linguistically more sophisticated and manifested more communicative skill. In comparison to the first round of fieldwork, disagreements among parents and children were verbally explicit and some meanings were negotiated among them, especially representations/views regarding the history of particular digital artefacts.

In general, parents did not perceive any general or structural change in their mediation strategy, apart from some minor changes in the ways in which they handled the digital devices available in the home environments. However, the overall data shows that there have been more changes than those verbalized by adults. The most important one being that their mediation logics have evolved. Parents tend to have the same fears regarding content and language exposure online, but in two of the cases (ES3 and ES11) the apprehension/distrust with children's practices linked to social networks has intensified. For instance, the mother of ES11 has become stricter in avoiding upload of any picture of her adopted children on Facebook. In general, all parents expect major dangers and challenges when social networks enter in their children's lives.

In comparison to parental perceptions, children seem more aware of the change in the digital routines, norms and in the history of the devices. This difference in perceptions and awareness highlights the relevance of technology for children, so for them details really matter. The following conversation between the child and his father ES09f41 shows a difference in the understanding of why the old tablet is nowadays unused and abandoned in a wardrobe. Whereas the child thinks that the tablet "broke", the father considers that children don't want it because it has become slow. Interestingly, for the child it makes more sense to think that the tablet is broken than accepting that it is just working slow, since in that case they cannot understand why the father does not try to repair it.

> ES09g7/9: I don't use the tablet because it's in a wardrobe (*La tablet ya no la uso porque está en un armario*)
> Researcher: How's that? (*¿ Y eso)*
> ES09g7/9: It has broken... (*Se ha roto…*)
> Researcher: The tablet has broken? And how did it break? What happened (*Se ha roto la tablet? ¿Y cómo se rompió? Qué le pasó?*)
> [Silence. *Silencio*]
> ES09f41/43: No, it's not broken, is that it is not fast any more! (*No, no es que*

se haya roto, es que no tiene velocidad)

ES09sb9/11: It stopped working! (*Dejó de funcionar!*)

ES09g7/9: So, daddy, if it has no speed, charge it and look at it! (*Pues papa, si no tiene velocidad ¡cárgala y míralo!*)

[Laughts. *Risas*]

ES09f41/43: This is coz they want speed… it's not enough for all the apps to download (*Es que como ellos quieren velocidad, se les queda corto para las aplicaciones que bajan*).

Moreover, in relation to the integration of the digital in school spaces, activities and learning, in general both parents and children have expressed disappointment because they think that there is a lack of promotion of tech-learning. However, we observed differences in the level of criticism between parents and children. Children have identified as a 'difference' the presence of technology in the classroom and in their lives, except for two participants who study in a private school that makes ample use of digital technologies (for the rest, digital technology in the school is reserved to the technology lesson, given once per week in the technology lab). In comparison, parents are substantially more critical and argue that techno- devices are needed but not enough technology is integrated into learning. They would appreciate more promotion of tech-based activities in schools and in the form of homework. Parents expect to perceive more technology usage when their children start the next academic course (following the second interview).

Finally, some new language and expressions for denominating the tech-based practices have been documented. As an example, a couple of participating children label "*watching* songs" to the practice of "watching" videos of songs on Youtube or TV. Another interesting example is that one of the children refers to Google and Youtube as "he". The action of personalizing an online tool suggests children understand tools such as Google or Youtube as resources with agentivity (i.e. able to search, answer to questions and interact with the user). In other terms, according to Latour's (2004) actor-network theory (also see Kullman 2015), Google would be an actor, as it is an element of the system that has influence on others. From Latour's perspective, an online search tool has agentivity within the system because it gives information. On this regard, when children use Google they are actually acting linguistically with its resources and this supports their conceptualization of Google as 'someone' with whom communication and knowledge exchange is possible.

4.3 How did parents' mediation of young children's use of (online) technologies evolve over the course of a year?

Parents' active mediation strategy

Parental mediation has experienced slight changes due to the child's increase of autonomy and self-confidence in the usage of technological devices. Interestingly, the growing digital autonomy of children has made the parental mediation more active and explicit.

The acquisition of literacy by children, which has improved significantly during the last year, is one of the key factors that affect children's autonomy. In comparison to the first round of fieldwork, now children know how to write and read on their own. This competence allows and facilitates children access to more devices and more functionalities, and thus to enlarge access to content. The conscience of the parents regarding the children's autonomy have led some families to sit down and explain to their children how to search online content properly, showing them how to avoid risky keywords or how to use particular functionalities such as Google Voice or Siri, which are useful to overcome the orthographic obstacle (ES10b6/8 and ES11g7/9). However, observation remains the main strategy to learn for most of the children. In one case, the mother (ES13m38/39) said that the most effective mediation strategy is to sit down and talk with children, as well as being always around when children were online. She makes the best of a countryside house that they have recently bought for marking a technology-free space for the family. In the following quotation, she expresses the benefits that she found on doing this:

> ES13m38/39: Since we are here (in the countryside house) we talk a lot and we do lots of activities together as a family. I have commented this with my husband and we have both realized that in the countryside house we spend the best moment of our family. In the countryside house we don't have timetables, we set up our routines. When we do hand-crafts, puzzles or other family activities we realize that everything is easier and that they (the children) don't miss the digital world (*desde que estamos así hablamos mucho y hacemos muchas cosas juntas. Lo he hablado con mi marido y nos hemos dado cuenta que en la casa de campo pasamos los mejores momentos de la familia (...) no tenemos horarios, vamos un poco según nuestras rutinas.... Cuando hacemos manualidades, puzzles o tras cosas juntas te das cuenta de que todo es más fácil y que no echan nada de lo digital de menos*).

There was one exception to the general tendency of an active parental mediation. In ES9g7/9 family, the father's mediation has been identified as passive, as it was in

the first data gathering. An explanation he gave is that he knows that his daughter has a self-control over devices and he lets her use the digital devices freely on her own.

Parents' restrictive - rather than permissive - mediation strategy

In our data, restrictive mediation prevails in comparison to permissive mediation. The strategy is restrictive in many cases in the sense that they control time and content. In some households time exposure was determined by the child's age, a criterion that is recommended by most of the experts (Bach et al. 2013). In relation to the content restriction, most of the families have a strict control over the passwords, and they change them quite often if they realized that the child knows it. Password control can serve different goals such as to control time exposure (ES11g7/9 case) or to keep the device of the adults clean (ES10b6/8 case). A couple of families have recently heard about parental control on TV and Youtube and expressed the willingness to install them. Moreover, most of families use surveillance, the confiscation strategy or changes of space (e.g. going to the holiday house) as a way to restrict time exposure, content or type of devices. On this regard, only in one family (ES9g7/9) the father employs a more permissive strategy where the child is not interested much in digital technologies. Regarding the devices, in general, children are not allowed to use parents' smartphones and computers. Privacy and cleanliness are the main reasons behind these decisions. Usually these rules are well accepted by children. Finally, social networks or online games are in general restricted. Children know that they cannot download applications without parent's permission. However, in some families children download free killer games or any other apps if the parents are not around (ES10b6/8). It should be highlighted that no family has been identified for using YouTube Kids or any other program to monitor child's content. The parents check the children's activities by reading the device's history or by being physically close to them.

Regarding the possibilities of downloading apps and content, a father argues that the type of device can have implications for children's autonomy.

> Researcher: Can ES10b6/8 download content alone? (*Puede ES10b6/8 bajar contenidos sola?*)
>
> ES10f40/42: Yes, I think one day we have realized they could do it. But there is a difference. Before with the Apple device, they needed a code. With the Ipad they did not have autonomy. Now with the new tablet it is not like that, so now we have lost the control and they have gained autonomy. (*Yo creo que sí, lo vimos (…) ahí hay una diferencia, yo creo. Los dispositivos de Apple, tampoco no sé muy bien si se puede configurar o no, pero por defecto viene que*

cada vez que te bajas una aplicación, sea gratis o de pago, tienes que meter contraseña. De ahí que con el iPad no tenían esa autonomía. Con la Tablet que trajeron los reyes hace dos años y con esta, no es así, con lo cual, ahí hemos perdido el control y ellos han ganado en autonomía).

Parents use more explicit strategy rather than implicit one

In comparison to the first round of fieldwork, parental mediation is now more explicit. In some families, for instance, strategies to anticipate and to inform the child in advance about time exposure or some other limitations have been developed. Adults believe that these announcements help to avoid arguments and frustrations with the child later on (i.e. ES10b6/8 family).

> ES10f40/42: I think that we are more sever as the ICT uses are increased. Actually, now it is more difficult and we have to argue. No, no problem: with the TV it is easier. You switch off the TV and that's it. The tablet you have to take it from their hands, and then we have an argument... It is more addictive also... In the end, I always say "OK how long is it going to take to finish this episode?". Or other times, as I know how long the episodes are, I prepare them to go to bed after. (*Yo creo que somos un poco más severos porque el uso ha aumentado el uso de la tecnología. Es verdad, cuesta más y a veces hay que pelearse. Pues no… no hay problema: la tele es bastante más más sencillo. La apagas y ya está. La Tablet la tienes que quitar de las manos, entonces hay más pataleta… hay más adición, también… Al final, siempre voy a un "vale, cuánto queda de este episodio?". O, esto es algo más programado y tu sabes que estos dibujos animados empiezan a una hora y acaban a otra. Los rediriges que sepan que coincide con el "ahora ves a dormir").*

In the same vein, children's claims are more explicit too. For instance, most of the children ask for accessing social networks like Facebook or online games although they know that these are not allowed. Interestingly, children have developed their implicit strategies to achieve their goals without the adult consent or help. As an example, no child was allowed to download content that required payment and none of them had the passwords to buy content. However, children have developed already the skills to obtain free content. For instance, ES10b6/8 and his brother identify free apps and if they like the logo/image, they already know how to download it.

> Researcher: Can you download content alone? (*Tu et pots baixar un joc tot sol?*)
>
> Es10b6/8: Yes (*Sí*)
>
> Researcher: And if it is not free? (*I si val diners?*)

Es10b6/8: Then, I do not download it (*Pues no me'l baixo*)

Researcher: And how do you know if it is free or no? (*I com ho saps si val diners o no?*)

Es10b6/8: Because it would be indicated (*M'ho ficaria*) [And then both brothers show to the researchers what are the logos that mean free or not free content]

Other types of mediation

Reverse mediation - children mediating adults' digital activities - is more visible in this round of data collection than in the data gathered during the first round of fieldwork. Sometimes, children are positioned in the family context as experts, mastering particular tools, apps or programs and they are asked to explain or to teach others how to use them. This is the case of ES3b7/9, who teaches how to use the mobile to his grandfather, and also the cases of ES3b7/9 and ES5b6/7, who teach her mother how to use the Play. Moreover, some parents are reusing old technology in opportunities of learning, as the family of ES3b7/9, who received a laptop full of viruses and he must learn how to clean them if he wants to use the device.

Sibling mediation is also very important and visible in almost all the families, together with the key role that other family members such as cousins or other relatives have in teaching children how to use ICT. In general, older siblings help the younger ones. Only in one case the helper is the younger brother (Es10b6/8).

Researcher: What do you do when you do not know to do something? Who is the person you ask for help? (*Quan, per exemple, no saps fer una cosa, a qui li demanes ajuda?*)

ES10b6/8: To my brother (*Al meu germà*)

Researcher: And if you do not know how to play a game? (*I si no saps jugar a un joc?*)

ES10b6/8: I also ask my brother (*També li demano al meu germà*)

...

Researcher: If you do not know how to do something with the tablet, who do you ask for help, your father or your brother? (*Si no saps fer alguna cosa amb la tablet, vas al papi o vas al teu germà?*)

ES10b6/8: I go to my father as he is a tablet expert (*al papi, perquè és expert en tablets*)

Researcher: And what about you, do you help anyone with the tablet

> or the Play Station? (*I tu ajudes a algú amb la tablet o amb la consola?*)
>
> ES10b6/8: Sometimes I help my brother if he is playing with one of my games (*A vegades al meu germà, quan juga a un joc meu*).

No family in our study mentioned that grandparents mediate the children's digital activities. What is interesting is that some children teach their grandparents to use smartphones, as mentioned above.

4.4 Has the role that these new (online) technologies play in the children's and parents' lives changed over the course of a year?

Based on our interviews, there seem to be some changes, or more precisely 'evolutions' in the role that digital technologies play in children's lives. These evolutions are related to, on one hand, the new devices that became available at home, the new skills that the children have gained to maneuver the devices, children starting to reach the 'owner' status of some devices (e.g. 'my laptop'; ES10b6/8), and more autonomy developed for the uses, as discussed above. On the other hand, the role seems to be changing as the concerns of parents are shifting as the children grow. While some parents have more fear for their children's uses due to children's more autonomous uses of the devices, other parents commented on their concerns more for other aspects of the children's lives, such as relationships with peers, now that the children can manage the devices more or less well. In other cases, families have intensified activities with family or 'in nature' in order to counterbalance the weight that the technologies have in children's lives. In other words, technology is perceived as something that is opposed to and incompatible with family activities or activities in nature (in short, a 'nature versus technology' ideology). The following excerpt of the discourse of a mother is an example of to what extent this ideology is 'translated' into actions of mediating digital time:

> The researcher: About future, what issues are you worried about and how are you facing it? (*Sobre el futuro ¿qué cuestiones te preocupan y cómo lo estás afrontando?*)
>
> ES03m39/40: I would like that, in a few years, they [her children] begin to handle the tools that they will need for their work, but in fact that does not concern me much now because I see that both, also his sister, are very good with everything digital and they have no difficulty learning. They learn from

their uncle for example. What I do not want to happen is as happened with his cousin who is at home playing online with friends all day and does not leave [the house]. For now, anyway I'm lucky, they really going outdoors very much. And as my current partner also thinks the same and likes sports a lot we do those things more whenever we can. Going to the countryside and having social contact are the most important now. (*Me gustaría que en unos años empiecen a manejar las herramientas que van a necesitar para su trabajo, pero en realidad eso no me preocupa ahora mucho porque veo que ambos, también su hermana, son muy buenos con todo lo digital y no les cuesta aprender. Ellos aprenden de su tío por ejemplo. Lo que no quiero es que pase como con su primo que está todo el día en casa jugando online con los amigos y no sale. Por ahora, de todas formas estoy teniendo suerte a ellos les gusta mucho salir al campo. Y como mi actual pareja también opina lo mismo y le gusta mucho los deportes hacemos más esas cosas siempre que podemos. Que salga a la naturaleza que tenga contacto social es ahora lo más importante…*)

On the whole, even though the devices have changed or evolved, the contents of what the children do and like have not changed much. In many cases, their passions (such as for dancing in the case of ES11g7/9, Lego for ES5b6/7, or dressing up for ES10b6/8) have not changed and those passions continue to shape the children's uses of the devices. However, they are advancing the uses of the devices to develop the passions further. For instance, ES9g7/9 from Barcelona uses two devices simultaneously to support her dancing hobby: while she uses a mobile phone to listen to music, she uses another to film her dancing.

Regarding the autonomy developed by the children, it is possible given a few intertwined factors: a) the experience accumulated by the children, together with the growing knowledge and experience using the interfaces and tools, and b) the appropriation of particular digital tools that help them to do things like writing without being assisted by an older sibling or an adult.

On the one hand, ES9g7/9's explanation of what is necessary in order to use the mobile properly is an example of how the accumulated experience benefits autonomy. The exchange below shows a change in her capacity to recognize how to improve speed on devices and how to optimize space and energy consumption as well as how to protect them with passwords.

> Researcher: So, to use the mobile correctly in a way that it works fine, what do you need to know? (*O sea para usar el móvil de una manera correcta, que todo vaya bien y tal y que el móvil funcione bien, ¿qué cosas tienes que saber?*)

S: For instance, don't install stuff that I won't use, as when you buy clothes that you don't wear, it's silly. Or recently I did not have space in my mobile and my mother uploaded all my mobile's photos on her laptop and this is a way to make a bit (*Pues, por ejemplo, no instalarme cosas que no voy a utilizar, como si te compras ropa y luego no la utilizas, es una tontería. O también ahora yo no tenía espacio en el móvil, y mi madre se pasó las fotos de mi móvil en su portátil y así hago un trozo*)

On the other hand, ES9b6/8's explanation of how he uses an oral tool for writing is an example of how digital tool support children's autonomy:

Researcher: Explain to me please what do you do with the tablet. You play… Anything else? *(Explica'm coses que fas a la tablet. Jugar… què més?)*

ES9b6/8: I watch videos on Youtube *(mirar vídeos a Youtube)*

Researcher: And can you access them on your own? *(i saps anar-hi tu sol?)*

ES9b6/8: Yes. And I can *watch* songs on Youtube (*sí. I mirar cançons al Youtube*).

Researcher: You love that, don't you? To sing (…) and when you go to Youtube are you writing the song you want? *(això t'agrada molt, eh, cantar! (…) i quan entres a Youtube escrius tu quina cançó vols?)*

ES9b6/8: Yes. But there is also a speaker (*Siri*) to go in. You say "ah" and you go to "ah" *(Sí. També hi ha un altaveu per dir-ho. Dius "ah" i t'ho fica).*

Researcher: And can you use this tool? And if it does not work, can you write your favourite song (…) Sofia. Can you write Sofia? *(i tu saps fer anar aquest altaveu? Si l'altaveu no funciona saps escriure aquella que t'agradava (…) Sofia. Saps escriure "sofia"?)*

ES9b6/8: Actually, you write "S" and automatically "Sofia" appears. Or some other times when I have my iPad I can see somewhere all the songs I have been listening to, and if I see "Sofia" I click on it. I do not have to write it again (*perquè si no… mira, busques, poses la "s" i ja et fica la Sofia. O si no a vegades jo quan jo tinc l'ipad, miro i quan apreto a algun lloc em surt tot lo que- tot lo que vaig escriure en tots els dies i… si fique Sofia apreto. No tinc que escriure)*

Finally, in relation to the increased autonomy, we have also detected a rise of self-learning. Children use the trial and error method for learning and also observing how others do things. In the following excerpt ES9b6/8 challenges the researcher's question by stating that he has learnt on his own to be quick and to solve scenes in games.

> Researcher: (...) Have you learned something about the games you play? *(I dels jocs, has après alguna cosa?)*
>
> ES9b6/8: Yes, I am faster and I can access more *screens (sí, ser ràpid i passar pantalles)*
>
> Researcher: Who taught you that? *(Qui t'ho ha ensenyat?)*
>
> ES9b6/8: I learned it on my own, I have taught myself. *(jo mateix. M'ho he ensenyat jo mateix).*

The emergence of autonomy is also visible in the strategies of some parents that give old computers or phones to children for them to explore. In Madrid, one family gave a computer full of viruses to the child (ES3b7/9) expecting him to solve it. Autonomy is also visible in the way children adopt the position of 'experts' and help others (siblings, grandparents) to use particular devices, as mentioned above.

4.5 Surprising findings

The analysis of data has led to some unexpected findings. These are exploratory findings that deserve further research.

- *The centrality of TV in family lives.* During the last years, with the rapid entrance of e-devices in children's live (i.e. tablets, Wii), TV seemed slightly unseated. However, this year's fieldwork has shown that TV is recovering its centrality and that other devices like the Wii are left on a second level of usage. This makes an interesting contrast with the results of the previous fieldwork, where tablet was the second more used device in European families.

- *Different conceptions about TV.* Children view TV as a "proactive" resource. Chromecast offers a range of content that they can choose from and use as they like, as for instance watching their favorite cartoons or dancing with the music they like. However, parents keep thinking of television as a "passive" device, an ideology linked to previous editions of TV / broadcast television, when TV had not all the resources that now has to customize the experience of users. This is why parents restrict the use of particular devices like tablets and the Play to weekends whereas TV is allowed during the week.

- *Little presence/penetration of 3D and connected toys in family digital life.* During the last year, the media has made 3D and connected toys visible and during the Christmas campaign they have been constructed as target toys. However, the families who participated in this second round of fieldwork did

not seem very interested in them. Even one of the families that has 3D google glasses does not really use them.

- *Changes in children's practices entail changes in language practices.* We have noticed that some of the children employ non-mainstream language expressions to define their tech-based experiences. An example of this is the expression of "watching songs", which is an adaptation of the language to the contemporary practice of watching videoclips on TV or on Youtube. The literal action of "listening to a song" is becoming less frequent, reserved to particular devices like the radio or the iPod.

5. Discussion and conclusions: Prospective and future

In this section, we engage in a critical analysis of the findings as well as of the methodology, based on which we will share our ideas regarding how the study could be improved. We will close the section with some methodological recommendations for future research and what is, according to us, the future direction for research on this topic.

5.1 Key findings

The key findings are described below in relation to children, parents and family life.

Children

Changes in the way that children use and conceive digital technology is intertwined with the following factors: (a) changes of technology devices, such as new acquisitions or abandonment, which in turn are influenced by the evolution and trends that shape the tech market; (b) new social, leisure and family practices which develop in peer and family contexts; (c) changes in family structure, and; (d) children's growing literacy skills and general development. The dynamics of changes of the technology devices operate in various forms such as giving/receiving presents (for Christmas, birthdays and other general presents) or through updating the tech resources in the family. These changes are reinforced through children's preference for large, fast and brand-new devices. Some old devices have been totally abandoned by all the family members. The substitution or acquisition of devices allow changes related to other aspects: norms, practices, values, autonomy and confidence/skill. In addition, our data shows that the interests of children in essence have not changed in one year and the changes that are seen are mostly construed as related to their natural growth (i.e. abandonment of particular channels for others that offer

contents that are less childish). All these findings contrast with the extended idea that interests themselves change and they depend on the age.

For most children, the two favorite digital devices are tablets and the TV. Children use them primarily for leisure (playing game applications, watching videos and children's cartoons or shows). Although this finding coincides with the findings of the prior fieldwork, there is a slight difference regarding TV. This device seems to have been reinforced as a preference of the children due to the inclusion of its new resources, especially Chromecast. It makes the consumption of contents in streaming possible and makes TV more similar to Internet-based devices like the tablets, but with much larger screen. In relation to the independent or mediated use of the digital devices, parents report that tablets and smartphones are usually used by the children alone, whereas TV and computers have more accompaniment and explicit mediation by the parents. TV is sometimes used as a resource for the entertainment of the family, and so it plays a cohesive function in the family.

Children prefer 'real' tech devices rather than devices targeted to kids, and even more so if they are brand-new. This is because they value the affordances that full access to Internet gives to their digital experiences. It is also because children expect of technology to treat them as smart persons and not in a childish way. Their preferences for 'real' devices is reinforced by the failures in the market of particular digital artefacts such as the kids tablet and the mobiles for children - that children perceive either as a 'false' or 'fake' devices or as a game -. It is also reinforced by the decline of the one-function focused device like the iPod, since now the tendency is to centralize multiple functions in a single device.

New technology-based practices unchain new ways of talking about them too. For instance, as said, children talk about "watching songs", as a response to the practice of watching videos of the songs they like. New expressions reflect the new digital practices in which children participate.

8-9 year old children in our sample have gained digital autonomy, as they have acquired new tech skills and improved their digitally mediated communicative skills. At their age most of the children already master complex digital actions like the following: to download content, to use the Voice recognition software (Google Voice, Siri- IOS), using passwords, techniques for improving the use of battery and device memory. In parallel, communicative skills related to the digital world have been developed too. Children of 8-9 years old are exploring mediated communication through sending oral messages via WhatsApp, using the phone of an adult or Voice recognition software (Google Voice or Siri). Children also use Google and Youtube as resources for accessing content and information that interest them. In particular, at this age, Youtube emerges as a resource for finding information and solutions to the challenges and problems they find, besides being a resource for entertainment. The importance of Youtube for them has been exemplified by the personification of it by some children. The ownership of tablets or mobile phones also emerged at this age,

promoted by parents. They give old or new ones to their children, partly expecting that this would reinforce their digital responsibility.

Although we only have one child who is younger than the rest (ES13g4/5) and thus we cannot make a generalized comment, we did not see significant difference between her and the rest of the older children in the sample. She can search for videos in Youtube on her own, and she plays with her mother's mobile phone and she will receive a Tablet as soon as she turns 6.

Parents

In comparison to the prior fieldwork, parental mediation seems to have experienced some slight changes, being now more active and explicit due to the child's increase of autonomy in usage of technology. As parents afford the children with more opportunities, parents perceive that risks also grow. There is a tight interplay between the child's growing independence in the usage of the digital technology and the increase of the accompaniment of and dialogue with the adults. The mediation is more explicit in the sense that parents anticipate and inform the child in advance about time exposure or other kind of limitations. In parallel, parents keep implementing restrictive mediation -controlling time and content-. They make the best of passwords, which they change frequently -if needed-, demanding that children ask for permission to do certain actions, such as downloading apps or playing certain "killer" games. They also control the time the children spend on digital activities promoting nature or physical-based activities. In addition, the increase of the children's digital autonomy has led to the increase of the reverse mediation, where children share their expertise by teaching others.

Parents have intensified their expectations regarding the role that technology might play at school because they believe that ICT is indispensable for the education of their children. Parents that express their disappointment regarding the lack of promotion of tech-learning in the school are usually those that bring their children to the public school since there is a big difference between the private and the public school in terms of technology resources. They complain about the lack of integration of technology in the school's daily life. It's a challenge that would imply an investment in mobile technology (e.g. tablets, laptops) to get beyond the technology labs and the digital blackboards that are often already available but are not enough to make the best of technology as a resource for learning across the curriculum. They also call for the inclusion of programming in the curriculum. However, all parents, even those that bring their children to private school, are aware of the need that the school system undergoes a pedagogical transformation for technology to be used meaningfully in each subject and project.

Regarding the perceptions of the parents of the role that technology should play in their children's life, it seems that mothers tend to have more concerns whereas the

fathers tend to focus more on the affordances that digital media and technology permits. Fathers are more tolerant to the exposition to the digital culture of the children and to killer games.

Family life

In the same families, difference in viewpoint regarding digital aspects coexist silently. This might be pointing to a lack of a common ground among the members of the family regarding digital activity. Parents and children sometimes have different understandings and interpretations of the history of usage or lack of usage of particular digital devices in use or those that have been abandoned. The clash of perceptions also operates in the way they value and make sense of particular resources (e.g. parents have some concerns about Siri as a writing tool as it has implications for literacy education, understood as written-based, whereas children see it as a tool that helps them write effectively and use technology autonomously). Moreover, different understandings of what children like also coexists, as sometimes parents state that a game is the favorite of their children while the children declare that it is another one.

Parents and children have different conceptions about the nature and function of television. Parents have interiorized a passive model of television - passive in the double sense involving mind and body, because spectators do not participate in bodily-active forms by watching TV sitting on the sofa and this situation is also associated to an uncritical consumerist attitude. This ideology explains why parents prefer their children to watch the television just during the week, in order to avoid time of exposure and 'abduction'. However, children use the television as a proactive resource that can offer them contents that they can choose for doing what they love, like dancing, singing or watching their favorites cartoons.

Children understand norms regarding the purchase and usage of technology. They know them and can explain them clearly. However, at times children are also seen as having a low 'tolerance thresholds' regarding parental norms around technology and may act-out and protest. These are ocassions in which children are expressing frustration and disagreement for norms and at the same time they are challenging them. However, while children live some norms with frustration at times they do not do so with the grief or bitterness that parents report.

5.2 A critical analysis of the study and some methodological recommendations

The study could be improved in several aspects that are essentially methodological, which may have had impacts on the collection/generation of data and the results

presented here. We point out and discuss three aspects that we consider relevant: a) the sampling, b) the coordination of the questionnaire and the interview, and c) presence of parents during the interviews with children.

The sampling method is a key methodological aspect of the project since this study sought the participation of a part of the families that participated in the first round of fieldwork. A minimum of 5 families were required as participants in the second round of fieldwork of the project and we decided to involve 6. At first, we decided to send an email (see Annexes) with the proposal of extending the participation in the study having another home visit and waited for the families to respond. We only had a couple of positive answers and so we turned to another strategy: ask directly to those families that were 'convenient' to visit (i.e. neighbours, living in the same city as one of the researchers) or that had shown interest and disposition for the continuation of the study during the prior fieldwork. The consequence of this is that we had not been able to maintain the diversity of the sample and some of the more diverse families of the first study were not involved. Furthermore, it is important to highlight that our study is partial in the sense that it does not include functionally diverse populations (e.g. deaf, blind, with aphasia, etc.) that might appropriate technology in very different ways.

The research tools we employed (the online questionnaire and the interviews) were designed in coordination where it was possible. The online questionnaire served as a preamble to the "single" home visit, so it had a 'filter function'. The online questionnaire gave key information to prepare the interview before the home visit, as it was planned to be short and focused on the theme of the change. However, not all the families filled the questionnaire online and this implied a difference in terms of preparation and focus among the families between those that provided the answers in questionnaire and those who did not. Both the questionnaire and the interview protocol for the visit were proven to be effective tools to systematically address the same research questions by two research teams located in geographically different contexts (in the case of Spain).

Another methodological aspect that could be improved is the presence of parents during the interviews conducted with children. In the case of Spain, some interviews with children were conducted in the presence of parents while in other cases they were not present (in the room). In some cases, we could observe bashful answers to the researcher's questions or some discomfort when the parents were around. Perhaps in these cases there may have been differences in their narratives if parents were not present during the interview. When researchers have perceived this, it may have been better if they had asked parents explicitly to leave the room during the interview. At the same time, there were occasions when the child and one of the parents have initiated a conversation or a discussion about a particular aspect and it

has enriched our data regarding the perceptions of the digital among the family members. Therefore, while considering each family on a case by case basis, when it is possible and productive it may be better to conduct interviews with children without the presence of parents.

It would be also interesting to explore the perceptions of other family members that influence largely the digital practices of young children in particular families, such as uncles/aunts and older/younger siblings. They were most often not present at the interviews, despite their significant role they are commented on to play in the digital life of children and their family.

In summary, a critical analysis of this study leads to the following **methodological recommendation** for future research in the area of digital practices 0-8:

- Include more diverse populations, particularly children and families with functional diversity in the sample.
- Conduct the interview to the children without the presence of the parents, if possible and beneficial to the study.
- Involve in the fieldwork other key family members that play a significant role in the digital learning of children.

5.3 What challenges exist for the future of the research on children 0-8 and digital technology in the Spanish context?

Having discussed the current study and the ways to improve the research we would like to suggest some directions for future research. **In the Spanish context** specifically, three issues remain a **challenge for research** on the digital in the life of children 0-8 to be developed:

1. More emphasis in studies on the family and in non-school contexts, and with more presence of populations with functional diversity.
2. More collaboration among researchers working on the same topic from different fields.
3. More internationalization of the local research.

These issues may be general to research on digita technologies across ages groups and have some additional particularities when the focus turns to children in the 0-8 age range. Regarding the first point, studies on children younger than 8 years old remain still scarce, in particular in the context of family life and outside school settings, as discussed in the Introduction. Moreover, the studies that do exist do not include populations with functional diversity although professional work and anecdotal experiences suggest functional diverse children may appropriate technology with different meanings and use it differently; thus, opening up other

areas of exploration. Regarding the second point, the studies and knowledge that exist also remain scattered in different fields and need to be integrated to advance the knowledge more effectively. Lastly, it would be important to increase the dissemination of research conducted in Spain at an international level as national studies tend to be written in Spanish and are not disseminated globally.

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7. Annexes

Annex 1: Contacting the families for the second phase

Email sent to the participant families in the first round of fieldwork.

Estimadas familias,

¡Ante todo feliz año! El año pasado colaborasteis en este estudio a través de las entrevistas que realizamos en vuestro hogar a padres e hijos en la familia sobre el uso de tecnologías digitales en niños menores de 8 años. Tu participación en el estudio, junto con la de otras 215 familias europeas, nos ayudó a poder hacer una "fotografía" transnacional sobre cómo las familias con niños usan la tecnología y qué oportunidades y riesgos existen.

Ahora, queremos observar los cambios en las percepciones, usos y habilidades de los miembros de tu familia, padres y niños, y para ello te pediríamos que completaras este breve cuestionario on-line. El cuestionario lo puedes completar directamente en este formulario que se abre en el link que tenéis más abajo o, si lo prefieres, podemos mandarte una copia en pdf o papel. Hemos calculado que se tarda aproximadamente 30 minutos en completar el cuestionario. Si accedes a completar el cuestionario verás que la primera pregunta pide un código del niño, el cual usamos para preservar el anonimato de las respuestas. En un mensaje diferente os enviaremos a cada familia el código asignado a vuestro hijo/a y familia.

Los resultados de este estudio informarán investigaciones futuras sobre este tema. También esperamos que tengan impacto en el diseño de políticas educativas relacionadas con el uso de la tecnología digital por parte de niños. Gracias, pues, por tu tiempo y colaboración. Si tenéis alguna pregunta no dudéis en poneros en contacto conmigo

Atentamente,

David Poveda
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Acceso al cuestionario on-line:
https://goo.gl/forms/6rxfCKbvcp117sAD2

ANNEX 2: Online Questionnaire

https://goo.gl/forms/aPhLvMtg05YKKWoO2

ANNEX 3 Answers Questionnaire sent to Spanish Families

https://docs.google.com/spreadsheets/d/1dQJHkCygk_-3iPU4FCJFqlQXAgrdpwrEneEbQjUBrFo/edit?usp=sharing

ANNEX 4 Observation/Interview Protocol in Spanish

Infancia (0-8) y tecnología digital: Protocolo segunda entrevista dirigida a las familias v.01_2016

Este protocolo ha sido construido para valorar cambios entre los dos momentos entre entrevistas dentro de la misma familia por lo que se refiere a las siguientes dimensiones:

1. Dispositivos: Nuevos dispositivos, dispositivos que se han dejado de usar, nuevas expectativas
2. Actividades / Intereses / Oportunidades: nuevas y abandonadas
3. Habilidades: Tipo de habilidades que los niños han adquirido o perdido
4. Mediación / Reglas
5. Percepciones: ¿cómo se valoran las tecnologías digitales, igual que antes, de modo diferente?

Además, también vamos a controlar el efecto de la primera entrevista en los 5 puntos anteriores.

El enfoque general de la entrevista es el cambio, identificarlo y documentar las razones que se proporcionan para este: ¿Por qué se ha producido este cambio?

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Puntos a tener en cuenta

** El niño a entrevistar (o niños, en caso de gemelos) sigue siendo el mismo para poder comparar los resultados, aunque el niño ahora sobrepase los 8 años de edad en el momento que se realiza esta segunda entrevista.
** Por favor, aseguraros de que el padre o madre que responde a este cuestionario previo sea el mismo va a ser entrevistado.
** Por favor, haced saber a los padres que (quizás) algunas de las preguntas planteadas se repetirán a lo largo de la entrevista. Aseguraros de que las familias entienden que este cuestionario es una herramienta más que forma parte de nuestra investigación.
** Este protocolo incluye cuestiones que deben ser consideradas dentro de una colección de preguntas en las que el entrevistador escogerá las más pertinentes en cada momento. Se puede considerar como una caja llena de herramientas (preguntas) que al final ayudará a evidenciar el cambio sobre las 5 dimensiones anteriormente citadas.
-- --

Introducción - Recordando la primera entrevista

El primer grupo de preguntas está destinado a proporcionar el contexto de la primera entrevista y a reactivarlo en la memoria de los entrevistados y lo que su contenido.

La entrevista se inicia con la localización de la entrevista en el tiempo: el día de la semana, la hora del día, las condiciones climáticas y cualquier otra especificidad de la primera entrevista realizada que puede haber cambiado desde entonces (usted estaba embarazada, tenía un coche nuevo, simplemente nuevo, tenías dos gatos, …)

Ejemplo:

¿Recordáis cuando vinimos por última vez?

Fue un día lluvioso / soleado / un sábado por la mañana de septiembre. Acababais de regresar con (el niño/a a entrevistar) de las clases de ballet
(...)

y entonces pasamos a recordar el objeto de la entrevista y la investigación original:

¿Qué recordáis de nuestra última visita? ¿el tema? ¿las preguntas? (¿los sentimientos?)

Y cualquier otra pregunta que apoye este objetivo de recordar el momento de la primera entrevista y su contenido.

Las siguientes preguntas desarrollan el cuerpo de la entrevista, que es el interés por el cambio en las prácticas, usos, comportamientos, percepciones sobre la tecnología digital en la familia de los niños pequeños.

Cada sección comenzará con un par de preguntas que conducirán al entrevistado a recordar puntos concretos de la primera entrevista. Éstas serán marcadas en azul.

Además, encontraréis comentarios que os ayudarán a responder las preguntas [...], Los comentarios son para ayudaros a entender el propósito de la pregunta o la importancia de vincularla con otras preguntas o con una parte del cuestionario previo (pre-entrevista).

Ejemplo:
[Relaciona esta respuesta con la pregunta 9 del cuestionario previo (pre-entrevista) "¿De quién aprendió tu hijo/a a usar su tecnología digital favorita?"]

1. Dispositivos: nuevos, en desuso o "abandonados"...

Recordamos que en vuestra casa había X/Y/Z dispositivos ¿sabéis dónde están ahora?

Recuérdanos que teníais/ usabais/....
También recordamos, de la pre-entrevista que teníais A, B, C.. pero ahora vemos que tenéis X/Y/Z como dispositivos Nuevos.

> ¿Sabe dónde están?
> - ¿Es así? ¿Hay algo más que hayamos olvidado?

- ¿Cómo ha llegado a vuestra casa? ¿Lo queríais? ¿Lo comprasteis vosotros? ¿os lo regalaron? ¿También lo tienen otros familiares o vuestro círculo de amigos?
- Esperabais que el dispositivo os fuera útil o para algo/ actividad en particular? ¿Cumplió con vuestras expectativas?
  - en caso afirmativo, ¿cómo? ¿Lo recomendaríais a otras persones?
  - en caso negativo, ¿Por qué? ¿Os arrepentís de tenerlo?

- ¿Limitáis el acceso de este nuevo dispositivo a vuestros hijos? ¿Cómo, qué medidas tomáis? ¿Funcionan? ¿Empleáis las mismas estrategias que el año pasado?

- ¿Dijisteis en el pre-cuestionario que compraríais / no compartíais este dispositivo / estos dispositivos con vuestros hijos? ¿Esto es así? ¿Es correcto? ¿Fue una decisión que tomasteis o simplemente vino naturalmente? ¿Por qué?

- ¿Teníais miedo de cómo usar el nuevo dispositivo con vuestros hijos? ¿Por qué?

- (si procede) ¿Cómo manejasteis la diferencia de edad entre vuestros hijos para acceder al dispositivo?

- ¿Intercambiasteis las estrategias de uso con vuestra pareja/ amigos/ otras familias/otros padres de la escuela / maestros / otras comunidades? ¿Has tenido que establecer medidas diferentes?

- ¿Tenéis algún contacto en el que confiar y que os de consejos o recomendaciones? Por ejemplo, blogs, revistes, amigos, conferencias en la escuela, museos... ¿Confías en ellos? ¿Sabías de ellos? ¿Quién os los recomendó?

2. Actividades / Intereses / Oportunidades: nuevas, en desuso o "abandonadas"...

vinculado a

3. Habilidades: tipo de habilidades que los niños han adquirido, "perdido"...

[Esta primera pretende recordar el contexto. El objetivo es hacer una transición que va desde los dispositivos hacia las actividades / habilidades]

(Recordando el dispositivo favorito). Nos acordamos, a partir del perfil familiar/FAMILY PORTRAIT, que vuestro hijo utilizaba el dispositivo X / Y / Z para ver vídeos en YouTube / jugar / tomar o editar imágenes / hacer vídeos / pintar / escribir / hacer deberes/ contactar con amigos o familia, etc.. En la primera entrevista que tuvimos, su dispositivo favorito era X. En el cuestionario previo (PRE- INTERVIEW) nos habéis informado de que X,Y, Z eran los tres dispositivos favoritos de vuestro hijo. De la actividad "Mi familia digital" en la que dibujasteis todos juntos al principio de esa entrevista, vimos que su niño prefería el dispositivo X /Y como sus favoritos.

- ¿Es una sorpresa para ti/vosotros? SÍ / NO, ¿Por qué?
- ¿Preferiríais que vuestro hijo tuviera otro dispositivo favorito diferente? SI / NO, ¿Por qué?

[Pregunta sobre Cuestión sobre percepción] [Tened en cuenta que esta pregunta es algo diferente que preguntar "¿Os arrepentís de tener/usar este dispositivo" (dimensión 1). Evitad esta pregunta en caso de que se haya comentado ya con anterioridad]

Actividades y habilidades

Nos acordamos que a vuestro hijo le gusta hacer X / Y / Z. [Esta pregunta abre un conjunto de actividades y habilidades]
- ¿Todavía lo disfruta?
- ¿Habéis observado si vuestro hijo/a ha dejado de hacer algunas actividades desde el año pasado? ¿Cual/es? ¿Por qué creéis que sucedió? ¿Y cuando empezó de nuevo en la escuela?

Vuestro hijo era capaz de hacer X / Y / Z (por ejemplo, descargar una aplicación, buscar un video en YouTube, intercambiar mensajes en Facebook). En el cuestionario nos habéis comentado que vuestro hijo ahora es capaz de X / Y / Z.

[Vincular esta respuesta con la Q7 y 8 del cuestionario previo (pre- questionnaire) sobre percepciones]

- ¿Cómo sabéis que vuestro hijo es capaz de hacer todo esto? ¿Os lo dijo? ¿Los visteis? ¿Lo pensáis? ¿Lo hicisteis juntos? ...
- ¿Desde las vacaciones de verano, vuestro hijo ha aprendido a usar/utilizar/saber hacer algo nuevo? ¿Desde el verano ha aprendido a hacer algo nuevo con las nuevas tecnologías digitales? ¿Y Desde el inicio del curso escolar?

[Esta pregunta tiene la intención de obtener información sobre el aprendizaje formal (en la escuela) e informal (fuera de la escuela), El énfasis en "el verano" y "el inicio del curso escolar" es útil para diferenciar contextos formales e informales]

- ¿Cómo aprendió esta(s) nueva (s) habilidad (s)? (Se la enseñasteis vosotros, o bien a través del contacto con otros niños, o a través de otro miembro de la familia, en los campamentos de verano, en la escuela, en algunas extraescolares o talleres, en museos, bibliotecas, eventos culturales, en YouTube, o aprendieron por sí mismos ...).

- ¿Cuándo os distéis cuenta de que era capaz de hacer esta nueva habilidad? [Especialmente esta pregunta es relevante si las familias han dicho que aprendieron por sí mismos"]

[Vinculad esta respuesta con la pregunta Q9 del cuestionario previo "¿De quién aprendió vuestro hijo a usar su tecnología digital favorita?"]

Estrategias de aprendizaje

¿Está vuestro hijo/a motivado por alguna actividad digital en particular?
- ¿Cómo se enfrenta a este reto/desafío? ¿Cuáles son sus estrategias de aprendizaje?
- ¿Son las mismas estrategias las del año pasado?
- ¿De dónde le vienen estas nuevas estrategias de aprendizaje?
- ¿Estáis cómodo / contentos con esas nuevas habilitadas adquiridas?
-          ¿Si es así por qué? ¿De qué manera creéis que son buenas / beneficiosas para ellos?
- Si no, ¿por qué? ¿De qué manera crees que no son tan buenas para ellos?
- ¿Os gustaría que vuestro hijo/a aprendiera a concentrarse hacia otro tipo de habilidades? ¿Cuáles? ¿Por qué? [Por favor, abrid también la pregunta a habilidades no digitales]

Enfoque en la escuela

- ¿Está la escuela permitiendo / apoyando / integrando las tecnologías digitales? ¿Ha cambiado su posición respecto al año pasado? ¿Qué tipos de dispositivos permiten en la escuela / en la clase [tened en cuenta que la escuela y la clase no son lo mismo]?
- ¿Qué pensáis sobre la posición de la escuela sobre este tema?
- ¿Cuál sería el papel/rol ideal de la escuela respecto a las nuevas tecnologías y el fomento de las habilidades digitales?

Enfoque en el entorno social

- ¿Cómo son de importantes socialmente los dispositivos / habilidades digitales en la vida de vuestro hijo? Las habilidades digitales tienen un impacto en la forma en que los niños son incluidos / excluidos del grupo o de una actividad. ¿Pasa lo mismo que el año pasado?

- ¿Asiste vuestro hijo a actividades extraescolares donde utilicen/ apoyen habilidades digitales? ¿Vuestro hijo asistía ya a esta actividad con anterioridad? P.ej. Sesiones de programación [Si no se ha mencionado aun]

[Vincula esta respuesta con Q4 y Q5 del cuestionario previo "¿Qué importancia tienen las tecnologías digitales para los niños, para vosotros y para la vida familiar?" Y "¿Qué aspectos diríais aportan las tecnologías digitales a vuestra vida familiar?

4. Mediación / normas

[Algunas de las preguntas que se presentan a continuación pueden coincidir con las referentes a las percepciones]

- ¿Cuáles son los mínimos consejos/ cosas que siempre le recordáis a vuestro hijo acerca de las tecnologías digitales (si las hay)? ¿Son iguales a las del año pasado?
- Si la respuesta es SÍ, ¿cuáles son? ¿Por qué son importantes para ti? ¿Tu pareja comparte estas mismas opiniones?
- Si NO, ¿cuál son diferentes? ¿Por qué son diferentes?
- ¿Tu pareja comparte las mismas opiniones que tu? SÍ, NO, ¿POR QUÉ?
- ¿Ya era así el año pasado? ¿Alguno de vosotros ha cambiado de opinión o ha evolucionado sobre este tema? Si la respuesta es Sí, ¿qué ha sucedido? ¿Qué pasó y cómo es que has fue cambiado de opinión?

Conversación con el niño

En la Q12 del cuestionario previo, tu/ tu pareja nos habéis dicho que habitualmente habláis de X / Y / Z con vuestro hijo.

- ¿Puedes recordar la primera vez que tuviste este tipo de conversación con tu hijo?
- ¿Cómo surgió esta conversación?
- ¿Lo planeaste o sentiste la necesidad de que ocurriera?
- ¿Tu hijo fue receptivo?

Conversación entre los padres

[Esta información es útil para entender cómo se deciden y negocian las estrategias de mediación]

¿Qué pasa en tu caso o el de tu pareja?
- ¿También habláis de estos temas?
- ¿Es un tema que os preocupe?
- ¿Cuáles son los temas recurrentes?
- ¿Qué desencadenó / motivó la conversación? ¿Alguna situación en particular? Algún tema dominante de la conversación? ¿A través de una conversación con otras personas?

[En caso de padres separados, si el tema aparece, sería interesante saber cómo se las arreglan para comunicarse / o deciden sobre las nuevas tecnologías en la vida de su hijo.]

- ¿Están ambos padres de acuerdo en esto? ¿Tiene puntos de vista diferentes?

Reglas

Recordamos que tenías la regla/norma X / Y / Z (o ninguna regla) con respecto al uso que tu hijo hace de las nuevas tecnologías digitales.

- ¿La regla/norma sigue siendo efectiva?
- ¿Tuviste que cambiarla / modificarla / adaptarla? ¿y por qué?
- ¿Viste un cambio de interés / dispositivo / comportamiento / amigos / mundo social?
[Por favor, repita las preguntas para cada regla que localizamos en la primera entrevista, o al menos las más importantes].

Mediación

[Por favor, comience desde la Q12 del cuestionario previo, donde hay un mapa de las actividades que han sido un tema de conversación entre los padres y el niño durante el último mes.]

[Inspírese en las siguientes preguntas para profundizar en la comprensión de la mediación de los padres y el posible cambio en el tiempo. Por favor, remita y compare la pregunta a las respuestas proporcionadas por los padres en el cuestionario previo a la entrevista.]

- ¿para qué actividad/es tenéis reglas/normas claras? ¿Existían ya estas reglas ya hace un año? ¿O son nuevas? O las habéis adaptado? ¿Por qué son necesarias estas reglas?

- Recordamos que tu o tu pareja compartáis actividades digitales X / Y / Z con vuestro hijo. ¿Aún las compartís? ¿Tenéis alguna nueva? ¿Por qué?
- Recordamos que tu o tu pareja no compartíais muchas actividades digitales con su hijo. ¿Sigue siendo así? ¿Por qué?
- En el cuestionario, nos comentabais que elegíais "aplicaciones gratuitas / aplicaciones de pago/ aplicaciones de pago y aplicaciones gratuitas". ¿Cuál es tu opinión al respecto? ¿Sigue siendo así?
¿Es esta elección igual que el año pasado? ¿Cambiaste de opinión?
- En el cuestionario previo [Q3, Dónde y con quién se usan los diferentes dispositivos en el hogar], usted / su pareja decís que compartís vuestro "smartphone" con vuestro hijo. ¿Cómo lo hacéis? ¿Tenéis alguna norma? En caso afirmativo, cuál. Si no, ¿por qué no hay? ¿Son las mismas que el año pasado? ¿Las negociaste?

Riesgo y prevención

[Si aún no han aparecido la prevención de riesgos / cuestiones de seguridad de seguridad]:

Nos dijiste en la primera entrevista que estabas preocupado por cuestiones de seguridad X. Ahora tu hijo ha cumplido un año más y puede hacer más cosas (con tecnología digital, ha ganado autonomía, las habilidades aumentaron, su círculo social, ...), así que ahora, ¿cuál es tu percepción? ¿Crees que tu hijo se encuentra más seguro o puedo tener más riesgos hoy en día? ¿O a nivel de seguridad todo está igual?

[Si estos posibles efectos no aparecieron en la primera entrevista, aquí tienes un montón de preguntas para plantear]:

- Recordemos la primera entrevista (por ejemplo: era un sábado por la mañana, tu marido estaba allí, era un día lluvioso, tú planeabas ir al cine por la tarde ...) PERO ¿puedes recordar lo que sucede cuando no fuimos y cerraste la puerta ¿Hablaste de la entrevista? Con tu hijo? ¿con tu pareja? Tus Padres, hermanos? ¿amigos? ¿profesores?

- ¿Crees que la entrevista dio la oportunidad de reflejar el uso de la tecnología en tu vida familiar? ¿Te diste cuenta de algo nuevo gracias a ésta? ¿Cambiaste o decidiste de hacer algo nuevo después de la entrevista? Sí, ¿por qué? Tuvo éxito ?
- ¿Te informaste más?
- ¿Le preguntaste algo a tu hijo/a? ¿Qué dijo después de nuestra visita?
- ¿Cambiaste algo a la hora de utilizar la tecnología digital tu mismo (en general y / o en presencia de su hijo?)

5. Percepciones: ¿la forma como perciben las nuevas tecnologías digitales, igual que antes, de manera diferente?

En el cuestionario previo [Q5] tu / tu pareja comentasteis que las tecnologías digitales aportaban X / Y / Z a tu vida familiar.

- (incluye todos los elementos que surjan) ¿En qué circunstancias?
- ¿Hay algo más que quieras comentar?

Puedes usar el 'juego de cartas' disponible en la unidad compartida para ayudarte en esta parte de la entrevista. El juego de cartas provee palabras solamente (como "canguro", "aburrido", "imaginación", "educativo", "adictivo") percepciones cercanas a las presentes en la pregunta 5 del cuestionario previo a la entrevista. Si tanto el padre como la madres están presentes, por favor proporcionad un juego de cartas para cada uno.

Final

Proporcionad un breve resumen de los cambios que habéis visto en esta entrevista.

- ¿Cuáles serían los consejos que darías a nuevos padres? (al menos 3)
- ¿Cuáles serían los consejos que te hubiera gustado tener cuando tu hijo tenía 3 años en referencia a su vida digital?
- ¿Cuáles serían los consejos que te gustaría recibir ahora que tu hijo cumple los XX años?

Agradecer a los padres esta conclusión y preguntad si tienen preguntas que quieran preguntar.

Annex 5: Family portrait of ES13 in Spanish based on the first round of interview (Summer, 2015)

Miembros de la familia

- Mother, 38, ES13m38
- Father, 39, ES13f39

- **Girl, 4, ES13g4, 2º ciclo de infantil**
- Boy, 2, ES13b2

Narración

ES13g4 vive con sus padres y su hermano pequeño en un piso de dos habitaciones con un patio exterior, en una urbanización con piscina y zonas comunes situada en un barrio de nueva creación del norte de la ciudad de Madrid. El padre trabaja como cocinero y el trabajo de la madre no fue revelado durante la entrevista. La vida familiar y el juego de los niños dentro del hogar suele organizarse en el salón. Además de en casa, entre semana los niños suelen pasar parte de su tiempo libre en el parque por las tardes, después del horario escolar.

La familia posee varios dispositivos digitales en el hogar. Cada padre tiene su propio smartphone personal (además, ES13f39 tiene uno del trabajo) y ambos son propietarios de un ordenador portátil que comparten con sus hijos. En su salón tienen una televisión con TDT, un reproductor de DVD, un disco duro con series y dibujos de los niños que conectan a la tele, una mini-cadena y un mini-ordenador de juguete. Además, los padres tienen una televisión en su dormitorio y un lector de libros electrónico propiedad de ES13m38. La familia es propietaria de una tablet que le regalaron por la compra de su coche y que sólo utiliza ES13g4, y de otro disco duro que utilizan cuando salen de viaje a casa de algún familiar. También hay un radio-cassette que utiliza el padre principalmente.

ES13g4 tiene alguna forma de acceso a todos los dispositivos señalados y, según ES13m38, la televisión es el dispositivo que más usa. Los niños utilizan la televisión con ayuda de sus padres para ver películas y dibujos a través del disco duro externo y de los canales de la TDT (p.e., Clan); además, ES13g4 usa Youtube en el portátil (sabe manejar el ratón para seleccionar vídeos), el cual también es conectado a la televisión del salón por sus padres. ES13g4 también utiliza la tablet con frecuencia, y lo hace para pintar, hacerse fotos, ver sus programas y dibujos favoritos a través de la app de Clan y, especialmente, jugar a juegos (p.e., Angry Birds, juegos de buscar diferencias, juegos de maquillar, asear y/o vestir muñecas). No obstante, según Arantxa38, el dispositivo favorito de ES13g4 es el smartphone. ES13g4 y su hermano utilizan los tres smartphones de sus padres para ver vídeos en Youtube (ES13g4 también hace/mira fotos). Durante la entrevista, ES13g4 mostró soltura para seleccionar vídeos de la lista de recomendados y nos enseñó con entusiasmo algunos de los vídeos que le gustan, la mayoría canciones infantiles en inglés que fue cantando a la vez que las reproducía. Por su parte, a ES13b2 le encantan los vídeos de trenes. Aunque ES13g4 disfruta del uso solitario de los teléfonos móviles, sus padres comentan que disfruta tanto o más de otras actividades no-digitales en las que ellos intervienen, como hacer puzzles o cocinar.

Como comentó ES13m38, sus hijos utilizan los dispositivos señalados una media aproximada de dos horas al día entre semana, y algo más los fines de semana.

La presencia de los dispositivos digitales dentro del tiempo libre / momentos de juego / actividades en el hogar de los dos hermanos, viene acompañada de una serie deestrategias que varían en función de la localización y portabilidad del dispositivo en relación al tiempo de uso.

(1) En el caso de la televisión del salón, los niños tienen poca limitación de acceso (la encienden cuando quieren) y ésta suele estar encendida toda la tarde cuando la familia está en casa, mientras los niños intercalan momentos de juego no digital con otros de visionado de la televisión (es decir, suelen ver la televisión el tiempo que quieren mientras juegan a otras cosas en el salón, y son los propios niños quienes regulan los intervalos en los que ven la televisión o juegan con otras cosas).

(2) El uso de la tablet y los smartphones está más limitado por el permiso de los padres, aunque los dos hermanos pueden acceder a ellos en múltiples momentos (p.e., en la cama antes de irse a dormir). No existen límites estrictos de tiempo en el uso de estos dos dispositivos, aunque los padres se encargan de marcar el momento de fin de su uso, y siempre están conectados a la red.

Gracias a la portabilidad del móvil y de la tablet, ES13g4 intenta con frecuencia utilizarlos sola en su habitación. Cuando esto ocurre, ES13m38 y ES13f39 le piden a ES13g4 que vaya a jugar con el cacharro al salón donde están todos los demás y le explican que quieren estar con ella (ES13m38: [refiriéndose a lo que le dicen a ES13g4] "Carmen no puede ser porque te quedas ahí toda la tarde encerrada y, sabes, queremos estar contigo y…"): Otra manera de fomentar la realización de estas actividades individuales en presencia del resto de la familia es conectando el ordenador a la televisión para que ES13g4 proyecte ahí sus vídeos:

ES13m38: "Con el ordenador hace lo mismo que aquí lo que pasa que lo ve en tele, porque lo que pasa es que por eso le decimos muchas veces que queremos que esté aquí con nosotros porque ella coge el móvil, se pira y se aísla, ¿sabes? Entonces como no, queremos que estés aquí si quieres ves los vídeos pero en la tele. Entonces tú puedes elegir tus vídeos para ver y los vemos en la tele, pero los ves aquí con todos, ¿sabes?"

Esta estrategia favorece la emergencia de momentos de interacción compartidos?

ES13g4 y ES13b2 van configurando sus gustos e intereses en relación a algunos contenidos (p.e., dibujos, vídeos, etc.) dentro de una serie de opciones convencionalmente dirigidas al público infantil (p.e., ES13g4 tiene interés por los

vídeos de canciones "infantiles" en inglés y ES13b2 por los vídeos de trenes, la película de Cars, etc). ES13m38 y ES13f39 ponen a disposición de los niños estos contenidos, por ejemplo, mediante el uso de dispositivos (p.e., discos duros para cuando están en casa/salen de viaje) cuyos contenidos se ajustan a los gustos de sus hijos. Esto también ocurre con las descargas de aplicaciones que realiza ES13m38 para su hija.

Además de todo anterior, la mediación de los dos padres se hace explícita en relación a la ayuda que ofrecen a los niños para llevar a cabo / alcanzar / realizar / iniciar sus actividades digitales (p.e., a ES13b2 necesita ayuda de sus padres para abrir la aplicación de Youtube y seleccionar el primer vídeo antes de poder seguir usando el móvil de manera independiente) o que ofrecen a los niños cuando éstos tienen algún tipo de problema inesperado con los dispositivos (p.e., durante la entrevista pudimos observar a ES13m38 dándole indicaciones verbales a su hija cuando la tablet se quedaba atascada).

ES13m38 y ES13f39 han encontrado en el gusto de sus hijos por los dispositivos mencionados un medio para promover en sus hijos la realización autónoma de algunas actividades, ya sea porque esto facilita/posibilita la gestión del cuidado y el conjunto de actividades de todos los miembros de la familia (p.e., ES13g4 y su hermano pueden desayunar solos delante la televisión por las mañana, mientras los dos padres terminan de preparar las cosas necesarias antes de salir de casa), o porque favorece una transición progresiva hacia las metas de desarrollo de importancia para los padres (p.e., desde hace pocas semanas, los dos hermanos utilizan los móviles en la cama por las noches durante 10-15 minutos para aprender a irse solos a dormir).