

A Day in the Digital Lives
of Children aged 0–3

The 'A Day in the Digital Lives of Children aged 0–3' project aims to identify the way in which digital technologies inform the lives of very young children and their families. This report summarises the work carried out so far by researchers in six countries as part of the research of DigiLitEY Working Group 1 'Digital Literacy in Homes and Communities' and points to the implications for policy.

Research Questions

The aim of this project is to answer the following questions:

1. How does technology inform the daily lives of children aged from birth to three?
2. What digital literacy skills and competences do children in this age group develop as they engage with technologies?
3. How do parents or carers mediate young children's use of technologies?
4. What are parents' or carers' perceptions of and attitudes towards the current and potential future use of technologies by their young children?





Methods

The researchers used the 'Day in the Life' (DITL) methodological approach (Gillen et al., 2007; Gillen & Cameron, 2010) – using a combination of interviews, field notes and video recordings to collect data - with the focus being on one day in the life of the child and their family. In this study, researchers carried out a preliminary discussion with the parents (either in person or by telephone) followed by three visits to the family: a 'Familiarisation' visit to meet the family, fully explain the project and gain consent for the research; a 'Day in the Life' visit to record the child's activities for a minimum of six hours; and a final 'Iterative Stage' visit to review and discuss the recordings with the parents. This final stage sought to ascertain the parents' attitudes to technology and their thoughts and concerns about their children's usage of it, using a combination of discussion prompted by the video and more formal interviewing. Visits took place in 2017/ early 2018.

Participants

The researchers visited 11 families, with the focus on one child in each family (some had older siblings or a younger baby in the family).

The focal children, eight girls and five boys, were aged between nine months and 34 months at the time of the visits. Families were recruited from England, Spain, Israel, Finland, Sweden and Portugal. Seven of the families were already known to the researchers – either personally or via previous research participation – whereas the rest were recruited through personal or academic contacts.

Whilst some researchers found that it was difficult to find willing participants, several noted that those who did agree to take part were very enthusiastic about contributing to the research, mentioning previous positive experience with academic research.

Researcher reception

Most of the researchers found that the families were welcoming and although some children were initially unsure about having someone else around, they all became accepting and some were very curious and keen on having another person visiting. Researchers aimed to cause as little disruption to the family's normal routine as possible, and in the majority of cases felt that they had achieved this. Children were often interested in the camera equipment at the start of the process, but most researchers noted that they felt that the family carried on with their normal activities despite being observed and filmed. For example, one researcher states that "what we have on video is a regular day of this family during weekends... We tried to interfere as little as possible and I think it was achieved".

However, in a few instances, researchers observed possible changes to the family's behaviour – for example in a one-parent family where the researcher explains that "despite stressing that it should try to be as normal as could be, I felt that the mother took advantage of having an adult in the house to look after the boy, or maybe she felt she would interfere less; and she may have felt that there was a desire to show that the young boy used the tablet".

Findings

RQ1 How does technology inform the daily lives of children aged from birth to three?

All of the children had some form of digital technology in their lives. The households listed between five and thirteen digital devices that they owned, and children also accessed a few elsewhere (relatives' homes, nursery). Most devices which were used by the children were owned by a parent or belonged to the household, and where children were described as 'owning' their own technological items, these were predominantly electronic toys such as battery-operated dolls or cars. Some households had items to which the children had no access, including laptop computers which parents used mainly for work – several parents commented that the children associated the household PC or laptop with work. There were also devices such as computer gaming systems which were owned by older siblings and to which the younger child had limited or no access.

The lowest level of usage by a child involved just watching TV/ YouTube cartoons which were put on by the parents. Most children had a higher level of usage than this, including some usage of games or apps on tablets or smartphones. Children were also involved in activities such as Skype calls with relatives.

Technology plays a range of roles in the children's lives and is often integrated into the 'rhythm' of the day – they might watch a cartoon or play a game after a meal or nap, or before bedtime. It can be a social activity, e.g. watching YouTube with siblings, or a solitary one, such as playing with a game. Technology is frequently used to influence the children's mood or behaviour, i.e. putting on a cartoon to cheer them up, or giving them a smartphone to 'play with' if they are impatient in a restaurant or waiting room.

The children also had traditional toys and games, but in some cases these were influenced by technology, such as soft toys or pillows featuring characters from their favourite TV cartoons. They were often observed or reported to repeat songs or phrases from videos or games, even when away from technology.

Researchers noted that even where children were not using technology themselves they were frequently interested in observing their parents and siblings using it. For example, one child whose only personal engagement with technology was watching cartoons and music videos on a laptop and DVD player, nevertheless observed many uses of a laptop, smartphone and an e-reader by her parents.

Some of these uses were simply observed by the child – the parents jointly using the laptop and discussing the contents on the screen in her presence. Others were described by the researchers as "directly targeted towards her", such as being recorded by a parent using the smartphone. Even when the technology is not being used as such, it is often present, for example, the television being on in the background, or the parent's smartphone always being present even if not currently in use.



Findings

RQ2 What digital literacy skills and competences to children this age group develop as they engage with technologies?

Children are learning how to use technology for education and entertainment, how to access the content they are interested in and how to make choices about their technology use. Many parents commented on the children's abilities to identify the apps they like to use (e.g. YouTube or a particular game on a tablet), to find the content they prefer, and to make alterations such as changing the volume.

How technology is used in an educational way varies between the families – in some cases children are using technology to learn about other things, e.g. apps which teach literacy or numeracy skills, or educational videos on YouTube. Some parents used the internet as an educational tool, for example getting children to suggest an animal to search for and showing them the pictures they have found – so they are gaining awareness of how to search online as well as about the animal. In these instances, they are simultaneously learning how to use the technological devices and using technology to learn other skills.

Both researchers and parents commented that children also learn about technology usage and people's relationships with technology through observing others using devices, for example knowing how to unlock a smartphone and find an app on it, even though they haven't directly been taught how to do this: "We never teach her, we never give her our device, but when she has the device, she knows how to unlock it: she knows how to find YouTube". Children will also try to apply skills they have learned from using one device to another, such as trying to unlock an unfamiliar smartphone or tablet.

Researchers observed that the young children's skills were still developing; they might for example watch a video with the screen rotated the wrong way. Children are often seen to mimic behaviour, for example: "He knows how to turn the TV on, but he cannot make choices of the programs. But he pretends to when using the remote control". Parents would support a child's use, for example one child made a short WhatsApp video to send to a friend who had moved away, supported by his mother.

Parents, especially when reviewing the video footage at a later date, sometimes commented on changes in children's attention levels – this is sometimes impacted negatively by technology, and in one case had been noticed by the child's nursery school, but there were also comments about increased levels of concentration with age, e.g. children being able to concentrate on a game or interact with an app for longer.

Findings

RQ3 How do parents or carers mediate young children's use of technologies?

Mediation of children's usage of the devices varied greatly, from interaction that was entirely controlled by adults (e.g. parents showing them a YouTube video on a laptop) to completely unsupervised access (e.g. child using smartphone on their own in their room or using a remote control device). In most cases there is some supervision, and there is use of 'blocking' technology if children have access to the internet, so they cannot access unsuitable content.

For the children with the lowest levels of technology use, parents limit the number of devices in the home. Many parents negotiate the levels of usage – for example agreeing in advance the number of episodes of a cartoon the child can watch or the length of time they can spend playing a game. Parents will often sit with a child when they are using a device, but the researchers identified some problems with mediation in these situations – the child may struggle to pay attention to what the parent is telling them because their attention is on the technological device.

With children who have higher levels of use, there is sometimes a sense that technology is being used to 'babysit' with less parental supervision or mediation, although some parents use remote monitoring, such as receiving emails informing them which content the children have accessed on YouTube. Parents will intervene if they feel there is a problem, such as children becoming possessive over technology, arguing with siblings over devices, or spending too long on one activity.

Several families demonstrated and reported issues with parents not agreeing on levels of mediation, for example "mother is 'more old-fashioned' than father who has a more 'no holds barred approach'".

There is some evidence of children starting to mediate their own technology usage – for example asking to get down from their chair when they've watched one episode of a cartoon.



Findings

RQ4 What are parents' or carers' perceptions of and attitudes towards the current and potential future use of technologies by their young children?

The parents all acknowledge that children need to learn how to use technologies. They hope for and expect them to become skilled users. Some parents think that children will be able to pick up these skills easily – feeling that devices are “designed for dummies” – whilst others feel that they need to show/ teach the children these digital skills. They have all had to make decisions around when they introduce or allow different types of technology.

Many parents felt that their teaching of digital skills would help to limit any potential damage caused by children accessing technology in an uncontrolled way outside the home. Where they expressed concerns these were mainly around the internet – access to unsuitable material – and social media, especially the potential for contact with undesirable people and issues such as online bullying. There were some concerns around excessive technology use interfering with the child's development, with too much screen time affecting concentration levels and keeping them away from traditional, 'creative' play and education. There is also a sense of social 'embarrassment' for some parents in admitting technology usage - “yesterday we just had to put a film on” – as if this reflects negatively on their parenting skills. However, most parents seem aware of the potential benefits of technology, and keen to identify those aspects of it which they believe will be good for the children, such as educational videos or apps which develop motor skills.

Some parents describe themselves as 'skilled users' but others express worries about their abilities to teach technological skills and appropriate mediation in technology use, as they did not grow up with this technology themselves, and feel that there is a lack of or conflicting information on the right ways to introduce their children to it.

Policy implications

There are a number of emerging policy implications of this work. These are as follows:

- This study indicates the extent to which technology is now embedded in the daily lives of many young children aged under three, but there is little research in this area. Research councils and research organisations need to ensure that sufficient attention is paid to this area in the development of new funding programmes.
- There are differing levels of parental support/ mediation in relation to young children's uses of technology, which relates to confidence and expertise in using technology. Offering family digital literacy sessions would be helpful in developing parents' skills, which may then impact positively on children's development.
- Given parents' perceptions about conflicting advice on children's use of technology, a public campaign should be developed which identifies a set of clear and consistent messages that parents can reflect on.

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Researchers:

Cristina Aliagas, Spain
Yehuda Bar-lev, Israel
Rosie Flewitt, UK
Julia Gillen, UK (Project Lead)
Ana Jorge, Portugal
Kristiina Kumpulainen, Finland
Jackie Marsh, UK
Mitsuko Matsumoto, Spain
Marta Morgade, Spain
Raquel Pacheco, Portugal
David Poveda, Spain
Heidi Sairanen, Finland
Helena Sandberg, Sweden
Fiona Scott, UK
Ulrika Sjöberg, Sweden
Ebba Sundin, Sweden
Raquel Pacheco, Portugal
Ilham Tigane, UK
Vitor Tomé, Portugal

References

Gillen, J., & Cameron, C. A. (2010). International perspectives on early childhood research: A day in the Life. *International Perspectives on Early Childhood Research: A Day in the Life*. <https://doi.org/10.1057/9780230251373>

Gillen, J., Cameron, C. A., Tapanya, S., Pinto, G., Hancock, R., Young, S., & Gamannossi, B. A. (2007). "A day in the life": Advancing a methodology for the cultural study of development and learning in early childhood. *Early Child Development and Care*, 177(2). <https://doi.org/10.1080/03004430500393763>

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