

The digital reading habits of children.



A National survey of parents' perceptions of and practices in relation to children's reading for pleasure with print and digital books.

Natalia Kucirkova and Karen Littleton

February 2016



Supported using public funding by
**ARTS COUNCIL
ENGLAND**



Contents

List of Figures and Tables	4
EXECUTIVE SUMMARY	5
1. Introduction	9
1.1 The nature of children’s engagement with digital technologies at home	10
1.2 Book Trust mission and focus	11
1.3 Academic focus	14
2. Methodology	17
2.1 Recruitment	17
2.2 Survey instrument	17
2.3 Data analysis	18
2.4 Respondents’ characteristics	18
3. General reading practices with children (quantitative analyses)	22
3.1 Practices in relation to the use of digital media	22
3.1.1 Confidence of using digital media	22
3.1.2 Frequency of use	22
3.1.3 Reasons for using digital devices	23
3.1.4 Concerns around the use of digital media	24
3.1.5 Co-viewing and co-using digital devices	25
3.1.6 Advice and guidance on the use of digital media	25
3.2 Practices in relation to reading with digital and print books	25
3.2.1 General practices	25
3.2.2 Frequency of reading	25
3.2.3 Reasons for using print or digital books	26
3.2.4 Concerns regarding digital books	27
3.2.5 Co-reading and child reading independently	28
3.2.6 Advice on books and e-books	29
3.3 Comparisons with US data	29
4. Parents’ perceptions- qualitative answers	33
4.1 Advice and guidance on the use of digital media	34
4.1.1 Best ways to use digital media resources	35
4.1.2 Best resources	35
4.1.3 General information	36
4.1.4 Advice based on research evidence	36
4.2 Advice on the use of digital books	36
4.3 Challenges for the use of digital media	37
4.3.1 Child’s engagement with digital media	39
4.3.2 Technology appeal	40
	2

4.3.3	Health implications	40
4.3.4	Relational nature of engagement	40
4.3.5	Variety of experiences	41
4.3.6	Social and media pressures	41
4.3.7	Family ethos	42
4.3.8	No challenge as no balance necessary	43
4.4	Difference between digital and print books	44
4.4.1	Affective engagement	45
4.4.2	Shared engagement	46
4.4.3	Sustained engagement	46
4.4.4	Creative engagement	46
4.4.5	Personalised engagement	47
4.4.6	Interactive engagement	47
4.4.7	Aesthetics	47
4.4.8	Educational potential	48
4.4.9	Health and social risks	48
4.4.10	Other opinions	48
4.5	Ways to improve interactive books	49
5.	Conclusion	51
	Acknowledgments	52
	References	53
	Appendix	56

To cite this report:

Kucirkova, N. & Littleton, K. (2016) *The digital reading habits of children: A National survey of parents' perceptions of and practices in relation to children's reading for pleasure with print and digital books*, Book Trust. Available from : <http://www.booktrust.org.uk/news-and-blogs/news/1371>

Please note:

This paper was originally submitted in August 2015, revised in December 2015 and published in February 2016.

List of Figures and Tables

Figure 1: Summary of parents' highest academic qualification	20
Figure 2: Percentage of parents by children's age 0-8 years	21
Figure 3: Percentages of parents listing different kinds of advice they would like in relation to digital media (N= 444)	35
Figure 4: Percentages of parents requesting specific kind of guidance for digital books (N= 271)	37
Figure 5: Percentages of parents for individual categories capturing the biggest challenges in relation to balanced digital activities (N= 709)	39
Figure 6: Key categories for parental responses in relation to the difference between digital and print books (N= 603)	45
Figure 7: Percentages of parental responses concerning key categories for ways to improve digital interactive books (N= 99)	50
Table 1: Geographical location of respondents	18
Table 2: Percentage of parents listing specific reasons for their child's use of digital media	22
Table 3: Most important concerns in relation to the use of digital media and corresponding percentage of parents	23
Table 4: Concerns around use of digital books with their children (parents could choose more than one option so their answers do not add up to 100%).	27
Table 5: Comparison of US and UK percentages for reasons to use digital media with their child (only comparable options from the two datasets are listed)	29
Table 6: Percentages of responded by US and UK parents in relation to the key reasons for parents not using digital media together with their children	30
Table 7: Percentages of US and UK parental responses concerning parents' views of how much they agree or disagree with given statements	31

Executive Summary

Prepared by Book Trust

The survey was designed specifically to explore young children's use of digital media and e-books, with a particular focus on children's reading for pleasure and shared reading with their parents at home. It investigates parental reports of practices and the associated perceptions of these practices by parents of 0-8 year old children. In total 1511 parents (886 mothers and 625 fathers) of UK children (825 boys and 685 girls) aged between 0-8 years completed the survey. The survey was conducted online and over the telephone and comprised 38 closed questions and 5 open-ended questions.

Note: Figures used in this summary are based on parents' perceptions or experiences of their child.

The key findings relating to **digital reading habits** are:

- **Most parents have concerns over children using interactive e-books, with only 8% having no concerns.** Concerns include that interactive e-books will:
 - increase children's screen time (45%);
 - mean they lose interest in print books (35%);
 - expose them to inappropriate content (31%) or too much advertising (27%);
 - affect a child's attention span (26%);
 - reduce parents' ability to monitor what children look at (22%) or result in children purchasing add-ons without parents' knowledge (21%)
 - inhibit learning (14%);
 - harm a child's brain (10%);
- **Parents want advice about interactive e-books.** Almost half of parents would like more advice regarding interactive e-books with 62% of these parents wanting advice concerning how they can be harnessed to support their child's learning and 58% wanting advice about how they can be used to entertain their child.
- **Print books are the preferred reading format for children.** There is a strong preference for print books for reading for pleasure (76%) and educational reading (69%) over interactive e-books (30% reading for pleasure and 34% educational reading) or simple e-books (15% reading for pleasure and 15% educational reading).

- **Reasons for preferring print books over e-books for reading for pleasure are multiple.** More than half of parents that prefer print (52%) say their child likes turning pages, whilst 43% say their child likes to own their print book and 41% say their child likes choosing books from the library. Of those parents whose children prefer reading e-books 48% say it's because their child enjoys using digital devices, with 39% of children liking to interact with the e-book and 35% liking the additional features.
- **Even highly digitised households use print books for children's reading.** Although 92% of parents and 73% of children were said to be confident users of technology, only 19% of children use an e-reader daily and 57% never use one despite having one in the home.
- **Half of parents said their children read alone for pleasure.** 51% of parents report that their child reads print books alone every day or almost every day, with only 7% reading interactive e-books and 5% reading simple e-books alone every day or almost every day.
- **Most parents read with their child because the child enjoys it.** Of the 82% of parents who say they read with their child, (with 56% reading print books and 6% reading e-books every day or almost every day) the main reason for co-reading was that the children enjoy it (64% for print and 53% e-books). Next, is that it is a good way to spend time together (63% print and 52% e-books) and thirdly because parents enjoy it (58% print and 43% e-books).
- **Parents consider their child's age before introducing digital books.** Parents believe the best time to start reading with their child is at age: 0-1 year for print books; 2 years for interactive e-books and 3 years for simple e-books.
- **6-7 year olds read print books less and e-books more than younger children.** Children of 6-7 years were reported to use print resources less often than children in the other age categories. Overall, the use of simple e-books several times a week was reported by 14.5% of parents but for the 6-7 age group this rose to 21.1%.

Additional findings relating to **digital media use** are:

- **Digital media is for fun.** Sixty per cent of children often use digital media for entertainment compared to 42% who often use it for learning. Seventy per cent generally use it to play games, 65% use it to watch TV or films and 60% play educational games. Some children (44%) sometimes use media independently so parents can get things done.
- **Parents' biggest concern with digital media generally is exposing children to inappropriate content (40%).** This is closely followed by concerns about addiction to technology (36%), missing out on other important experiences (34%), not playing outside (27%) losing contact with other children (26%), becoming overweight (11%) and harming a child's brain (11%). Only 16% of parents had no concerns about their children using digital media.
- **There are some differences between US and UK parents' perceptions in relation to the use of digital media with their children.** Comparison with an existing US data set indicates that there are differences between US and UK parents in terms of the main reasons given for using (or not using) digital media together with their children. For instance, more US than UK parents use digital media together with their children to ensure their child is not exposed to inappropriate content and more US than UK parents do not use digital media together with their children because they report that they need time to get other things done.

Considering the survey findings, there is a need to:

Seriously address the concerns of parents around using digital books with their children. It's clear that as children get older they will read more digital material. Those who have discovered the digital world with their parents may be more discerning readers and be less vulnerable to the allure of inappropriate or poor quality content.

Parents need support to:

- *recognise how print and e-books can complement each other*
- *find examples of good e-books to share with children*
- *access advice offered by other users of e-books*
- *recognise "good" digital content for reading*
- *explore the functionality of digital books*
- *reduce the child's risk of exposure to inappropriate content or advertising*
- *understand how digital and print books can support children with special educational needs*

We must also be aware of the diversity of opinion regarding digital books and the influence of other factors in forming that opinion, for example, parents wanting to carry on family traditions with paper books.

There is also a need to carefully contextualise reading-related guidance so it takes account of children's varied experiences in different families.

1. Introduction

Today's children and their families live in an era that is characterised by the prevalence of digital media, with a wide range of technologies influencing both their perceptions of reading and writing and their reading and writing-related practices (e.g. Strasburger et al. 2013; Radesky, Schumacher & Zuckerman, 2015). Reading in the 21st century includes the use of a variety of reading platforms, each of which offers a variety of ways of interacting with both the text and the narrative being conveyed. In particular, the current decade has witnessed a surge of interest in the potential of mobile technologies to support children's engagement with stories. Print books are published alongside innovative reading devices, presenting readers with novel gateways into stories and the life-worlds of characters. Questions have been asked about whether the use of new reading platforms such as tablets and e-readers could be harnessed to address some of the wider social, cognitive and economic barriers to reading and literacy (see e.g. Livingstone & Helsper, 2007; Laidlaw & O'Mara, 2015; Zhang, Trussell, Tillman & An, 2015). However, in order to understand and take advantage of the potential opportunities that could be afforded by this new landscape, a robust evidence base from which to design and develop programmes and interventions to support reading is required.

This research was designed to contribute to a deeper understanding of this new literacy landscape, by offering an exploration of parents' perceptions of the role new technologies, and in particular digital technologies for reading, play in young children's lives. The research addresses, and this section is organised according to, three main objectives:

1. to understand the nature of children's engagement with digital technologies at home, notably in relation to reading for pleasure and in contrast to print books;
2. to inform Book Trust's mission to deliver the best reading materials to all families across the UK and nurture children's love of reading;
3. to address some of the gaps in our understanding of the key factors influencing parents' perceptions and practices in relation to children's reading for pleasure with digital interactive books.

1.1 The nature of children's engagement with digital technologies at home

Since the early 2010s, there has, in the UK, been a rapid uptake of mobile technologies - perhaps most notably the take-up of smartphones¹ and tablets, as well as various digital e-readers such as Kobo and Amazon Kindle. These new platforms have introduced new patterns of engagement (both with and through technology) for individual children, their families and their peer groups. As was the case with the introduction of earlier technologies (such as TV, for example) the advent of mobile devices has been accompanied by the proliferation of several negative narratives. For example, articles published in the popular media, often portray these devices as intrinsically bad, contributing to increased child obesity rates and anti-social behaviour. It has also been suggested that new technologies may negatively impact children's learning, including their reading practices.

It is thus against this backdrop, involving narratives of fear and concern, that a number of studies have attempted to understand the nature of children's engagement with new technologies at home or in school - with several international and national surveys being conducted. In the US, for instance, the *Common Sense Media* survey (Rideout, 2013) looked at children's media use (as assessed by their parents) including how much time they spent with different reading devices, their access to these devices at home, how early they start using the media, and which platforms they prefer for educational use. Additionally, the *Michael Cohen Group* survey (2014) (conducted with a selected sample of 60 American 2-8-year old children) explored children's use of media, including emergent reading preferences.

In the UK, a number of national surveys have been undertaken to explore children's and parents' media use and attitudes to technology. For instance, recent Ofcom surveys *Children and Parents: Media Use and Attitudes Report*, (2013 and 2014) provide detailed descriptions of media use, attitudes and understanding amongst children and young people aged 3-15 in the UK. In addition, several other UK surveys have been conducted with a specific focus on engagement. The *Childwise Monitor Report* (2014), for instance, provided an in-depth analysis of children and young people's media consumption, brand attitudes and key behaviour. Over 2400 children aged 5-16 were interviewed in-depth on a range of topics, including those concerned with patterns of reading such as the frequency and time spent on reading online, using e-book readers or apps. *The Parents' perspectives: Children's use of technology in the Early Years* survey (Formby, 2014), carried out by the National Literacy Trust with parents of children aged 3-5 years old, focused on children's access to books and touch screens, and parents' attitudes to print and technology. *Kids and Media: The Appy Family*, a market-based analysis, commissioned by

¹ iPhone was introduced in 2007 (<http://www.theguardian.com/technology/2012/jan/24/smartphones-timeline>) and T-Mobile G1 in 2008.

Disney in 2012, surveyed 2000 British parents specifically about apps. A study funded by the Economic and Social Research Council (ESRC) in 2015 examined technology use in 2,000 families with one or more tablet computers and found that 31% of under-fives had their own device. The report² includes recommendations for early years practitioners on how to use tablets and how to choose apps that promote play and creativity for pre-school children.

Overall, these surveys' findings, taken together with other empirical evidence (e.g. Zhang & Kudva, 2014), suggest that the usage of digital media at home is on the rise for increasingly younger children and that, when it comes to reading, a diverse landscape of print and digital books exist - with the reading of digital books complementing rather than replacing print books. The present survey builds on other national and international surveys concerned with children's engagement with digital media by focusing on children's use of digital and print books *for reading for pleasure*. It extends previous findings by paying close attention to parent-child joint media engagement and parents' perceptions of the value and limitations of digital media at home. Unlike market research surveys, which are often platform- or product-focused, this survey adopts a more inclusive definition of digital reading, with close attention paid not only to which devices parents have at home, but also to their perceptions regarding the purpose, benefits and limitations of these devices in children's reading development and the ways of using such technologies at home.

The focus on young children (0-8 years) and reading for pleasure with digital books in this age group were of particular importance to the commissioning partner of the survey, Book Trust.

1.2 Book Trust mission and focus

Book Trust (www.booktrust.org.uk) is the largest reading charity in the UK. They work to inspire a love of reading in children because they know that reading can transform lives. They give out over 5 million carefully chosen books to children throughout the UK; every parent receives a Book Trust book in the baby's first six months. Book Trust books, guidance and resources are delivered via health, library, schools and early years practitioners, and are supported with advice and resources to encourage the reading habit. As a result of the current rapidity of change in the UK's digital reading landscape, there has been an increased interest in the potential of, and possible opportunities afforded by, digital bookgifting schemes. Although several market reports highlight the continuing importance of paper books for young children's reading (e.g. The Childwise report "*The Monitor Report*", 2015), national surveys in the UK and US document young children's increasing use of digital media at home for both education and entertainment purposes (Rideout, 2013; Ofcom, 2013, 2014). This survey therefore represents an important development for

² http://techandplay.org/reports/TAP_Final_Report.pdf

researchers, and others, seeking to understand the nature and significance of the new literacy landscape and for Book Trust, who are seeking to better understand the implications for their programmes.

In particular, Book Trust commissioned this survey to understand the nature of the guidance parents are seeking concerning digital media and to gain a deeper understanding of children's digital reading practices at home - with a specific focus on reading for pleasure and joint media engagement with their parents. Given the different age groups targeted by the charity's reading programmes, one of the objectives for the survey was to identify potential age-groups of children where the use of digital books is particularly prevalent or perhaps where guidance on their use is perceived as being needed by their parents.

Clearly, parents are at liberty to decide how their children interact with digital media. Some may choose not to restrict the use of devices at all, whilst others may decide to impose some ground rules or regulations concerning the frequency or nature of use. However, given that previous research (Montgomery, 2000, 2002) suggests that some types of media are potentially harmful for children and not developmentally appropriate (e.g. heavily commercialised content), it is important to ascertain whether such considerations are informing parents' decision-making regarding their children's use of digital devices.

Allied to this, notably for children under the age of two, there is controversy regarding the age at which they should be introduced to digital books and the provision of digital media at home overall. Currently the only official guidance is the recommendation issued by the American Academy of Paediatricians (AAP) that



outlines that: "Television and other entertainment media should be avoided for infants and children under age 2. A child's brain develops rapidly during these first years, and young children learn best by interacting with people, not screens.³" Several strands of evidence can be presented to support this guidance. A body

³ <https://www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/pages/media-and-children.aspx#sthash.x6JI0EFq.dpuf>

of research (e.g. Robb, Richert & Wartella, 2009; Vandewater, 2011) shows that children under the age of two cannot learn new words from screens (e.g. an instructional video) but only from other real humans. For example, Kuhl, Tsao, & Liu (2003) looked at whether English-speaking 9-month-olds would distinguish Mandarin speech if they are presented with Mandarin words on the screen or by face-to-face interaction. Children who were only exposed to the Mandarin sounds on video showed no difference in learning, while those who observed Mandarin speakers in person showed increased learning.

There is also evidence that passive TV watching has associations with children's obesity (Peck, Scharf & DeBoer, 2015). This evidence, however, appears to be different for children's computer use which has not been associated with obesity and where the interactive element is more prevalent than with watching TV. The situation is even more complicated and unknown with interactive books, which although presented on the screen, are predominantly designed to be educational, with the aim to both entertain and educate children about letters and stories.

However, after the AAP's national conference in May 2015, the American Academy of Pediatrics signalled that it will amend media guidelines discouraging screen time for children under two, with a new statement of policies expected in autumn 2016.⁴

An important aim of this survey was therefore to understand parents' perceptions of the appropriate age for children to start using interactive books and the reasons given for and against their use as part of their reading for pleasure routine.

It was also of interest to see how the parents' responses compare with the views of US parents of children of similar age. To this end, data from the The Joan Ganz Cooney Centre's survey [Learning at Home: Families' Educational Media Use in America](#) were used for comparative purposes. Joan Ganz Cooney Center's survey specifically focused on parents' views in relation to the platforms they perceive as being most effective for their children's education and some of the obstacles to greater use of educational media. Questions that were comparable with the UK survey focused on the reasons for and against the use of digital technologies at home.

Additionally, building on other UK survey data (Formby, 2014) and increasing anecdotal evidence, Book Trust was interested to ascertain whether there is a gender difference with respect to reading with digital resources at home. Several children's authors, including Jonathan Emmett, the author of *Pigs Might Fly*, have voiced the concern that many boys are put off reading for pleasure⁵ and that there is significant gap between boys' and girls' literacy development. A national survey commissioned by The National Literacy Trust in 2014 found that tablet technologies

⁴ <http://aapnews.aappublications.org/content/36/10/54.full>

⁵ See <http://www.dailymail.co.uk/news/article-2609192/Boys-turning-action-packed-video-games-books-girly-says-award-winning-childrens-author.html>

(such as iPads) are of particular interest to boys (aged 3-5 years) and, based on these findings, suggested that new technologies could be used as a way to get boys interested in reading activities. However, there is clearly a need for more nuanced understandings of boys' digitally mediated literacy engagements; for instance, how specific technologies might enhance or constrain the reading development of boys with different levels of reading and language skills. For example, prior research suggests that boys who differ in terms of their literacy development interact quite differently with the same digital reading resource (Littleton, Wood & Chera, 2006).

Book Trust is seeking to explore the ways in which parents mediate children's access to/use of digital technology and any concerns about its use. Such understanding will enable Book Trust not only to inform the public about family media use in the UK but also to inform the use of digital media within Book Trust programmes. Overall, the survey was designed to enable the charity to consider how it can effectively support parents and their children's media use and reading for pleasure in the digital age.

1.3 Academic focus

In addition to orienting to practical considerations, this survey also had a strong academic focus: to contribute to current understandings of the factors influencing parents' perceptions and practices in relation to digital interactive books with young children. Specific analyses were conducted with the aim of identifying the demographic factors (specifically child's age and gender) that are associated with parents' preference for reading digital or print books with their children in the context of reading for pleasure.



In particular, given that interactive digital books are increasingly popular with young children but little explored academically (Kucirkova, 2013), the academic focus is centred on interactive books. Interactive books are e-books or digital books with

embedded video and interactive features. Digital interactive books require a digital reader (e.g. a tablet or smartphone) and internet access to download and purchase a copy of a title. These are not resources typically directly available to young children - they rely on their parents to gain access to such digital media, including interactive

books. It is, however, important to distinguish between the various kinds of interactive features available with digital books. Extant research (Bus et al., 2014) shows that multimedia features such as animated illustrations, music and sound effects can be beneficial for children's literacy development, especially if they are closely related to the concepts represented in the book (e.g. a sound effect is matched with the picture and word depicted in the book). In contrast, interactive elements embedded in interactive books such as hotspots⁶ and games can interfere with children's understanding of the story and can result in cognitive overload (Bus et al., 2014). This is important to bear in mind notably in relation for children who are at risk of language and learning difficulties, and who, generally, tend to be more distracted by the interactive features.

Literature also shows that there is a huge variability in the quality of children's digital books, with many popular titles often not meeting the basic criteria (e.g. user interface, audio and visual design, and instructional support) for developmental appropriateness (Chau, 2014).

In terms of the benefits of digital books for young children's literacy development, researchers have examined the potential of different types of digital interactive books (e.g. electronic console (EC) books⁷, CD-rom books, and e-book apps) to predict children's literacy outcomes. In a study with 165 parent-child pairs, Parish-Morris et al. (2013) found that the more interactive features there were in the books, the more the dialogue between parents and children was disrupted and children's understanding of the story impeded. Researchers have also compared children's comprehension of a story if this is read to them by a human from a print book (i.e. a researcher) or by the digital book itself (ie the iPad). Reich (2015) compared the effects of the two with 120 3-5-year olds. Perhaps not surprisingly, the researchers found that children's talk when reading the print books was more about the story plot while their talk centred on the technological aspects of the iPad when they were read the story by the digital book itself.

Recently, Takacas et al. (2015) conducted a robust synthesis of the available empirical evidence on interactive books, comparing technology-enhanced story presentations to more traditional print presentations of the same or similar story. The authors compared the two media in relation to the effects on children's language and literacy development, with a total of 43 studies with 2147 children. The findings indicated a small but significant positive additional effect of technology on measures of story comprehension and expressive vocabulary. Taken together, what all this means is that digital books can *add* to the benefits of more traditional book reading with printed books. This, however, is related to some specific interactive features such as the presence of hotspots or animations. While research examining the

⁶ Selecting or clicking on a 'hotspot' makes the application display additional information/material or run a video, for instance.

⁷ These are battery-operated books typically designed by LeapFrog™

individual features of digital books (e.g., interactivity, personalisation) continues, it is important to understand the parents' perspectives on their value for children's reading for pleasure - which was the aim of this survey.

2. Methodology

2.1 Recruitment

In total, 1511 parents of 0-8 year olds were recruited by the Survey firm Opinium. In order to ensure representation from all socio-economic groups, and to reach parents who may not have internet access, surveys were conducted via two methods: 1000 online, and 500 by telephone. The sample selected for interview via online surveys were members of an online consumer research panel and the telephone respondents were members of a database who have opted in to receive surveys of this nature.

2.2 Survey instrument

The survey took approximately 15 minutes to complete and comprised a range of single and multi- coded questions, grids and open- ended responses. The order of the presentation of the questions was the same for all respondents, but the presentation of answer options was randomised to avoid order effects. The content of the survey questions reflected the three main foci of the survey, as outlined in Section 1. Following discussion with the Book Trust research team and colleagues at the Joan Ganz Cooney Center, the following topics were selected for coverage in the survey:

- Demographics (including social class, ethnicity, English as Second Language, special educational needs);
- Number of media devices in the home/owned by the child/ used by the child/ purpose of use;
- Time spent by the child on different types of reading and media use and parents/others role in this;
- How parents decide which media to use/allow – reasons for and against use, and for and against parental involvement;
- Parents' opinions (concerns and benefits) about reading and digital media use;
- Child's active engagement in reading and digital media use (i.e. talking and discussing what they are doing, dialogic reading⁸);
- The nature of the parent's involvement in their child's reading as well as their own reading practices and media use;

⁸ Dialogic reading is a reading technique developed by Grover J. Whitehurst to improve children's learning from picture books. A body of research documents the effectiveness of the technique for children's language and emergent literacy skills. For more information see: <http://dialogic-reading.blogspot.co.uk/>

- The kinds of advice and guidance parents would like concerning children's use of media and digital books.

In addition, working with the Joan Ganz Cooney Center in the US, we adapted some survey questions from the survey [Learning at Home: Families' Educational Media Use in America](#) to enable a cross-country comparison, adding a comparative, cross-cultural dimension to the analysis. Ethical clearance was sought from The Open University. The usual ethical parameters of consent, right to withdraw, confidentiality and contact details for additional information, applied.

2.3 Data analysis

There were two kinds of responses in the survey: the five open-ended questions allowed the respondents to describe their views in their own words. For the other 38 questions, parents were required to choose from the options given or select 'other' if none of the options captured their view. All data were analysed either in Excel or with the statistical software SPSS v17. Data were first examined visually and statistically for outliers. All numeric data were non-parametric. Therefore, no distributional assumptions about the data were made and non-parametric tests were used for all analyses. Descriptive analysis was used in conjunction with inferential non-parametric analyses. Chi-square tests that are used to investigate whether distributions of categorical variables differ from one another, were used for all the analyses. For open-ended answers, qualitative content and thematic methods of analysis were used.

Quantitative analyses of the data, that is those related to the closed questions, are reported in Section 3. Here, the focus was on general patterns in the data. Also, based on the current literature and Book Trust strategic focus, we explored whether significant demographic factors (such as the child's age and gender) were associated with parents' responses. In Section 4, we report content analysis of parents' open-ended responses, which we categorised according to the most frequent themes in parents' accounts.

2.4 Respondents' characteristics

There were 886 mothers and 625 fathers of children aged between 0-8 years. 54% of parents were in full-time work and 21% worked part-time, with 3% of parents working less than 8 hours a week. 7% were unemployed, 1% were full-time students and 0.3% were retired.

There was a relatively even spread of the geographical location of respondents.

Table 1: Geographical location of respondents

UK Region	North East	North West	Yorks & Humber	East Midlands	West Midlands	East of England	London	South East	South West	Wales	Scotland	Northern Ireland
Number of parents	72	194	127	80	122	136	218	232	114	82	102	32
% of parents	5%	13%	8%	5%	8%	9%	14%	15%	8%	5%	7%	2%

Most parents (75%) self-identified as British, with a mixture of ethnicities for the remaining 25%, with 1% Irish, 0.4% Gypsy or Irish Travellers, 5% parents of other white background, 1% of White and Black Caribbean, 1% of White and Black African, 3% of White and Asian, 0.6% of mixed or multiple ethnic background, 2% Indian, 1% Pakistani, 1% Bangladeshi, 0.5% Chinese, 0.3% of other Asian background, 3% African, 0.8% Caribbean, 0.5% of other Black/African/Caribbean background, 0.06 Arab, 0.5% of other ethnic group and 1% preferred not to say. The main language spoken at home was English for the vast majority of parents (81%), 16% reported that they speak English mainly but also some other languages and 3% mainly other languages, with some English.

We also asked about the parents' highest level of qualification, the results of which are reported in Figure1 below. A large proportion of parents were: educated to undergraduate degree (21%), to A Level (19%) or GCSE level (21%).

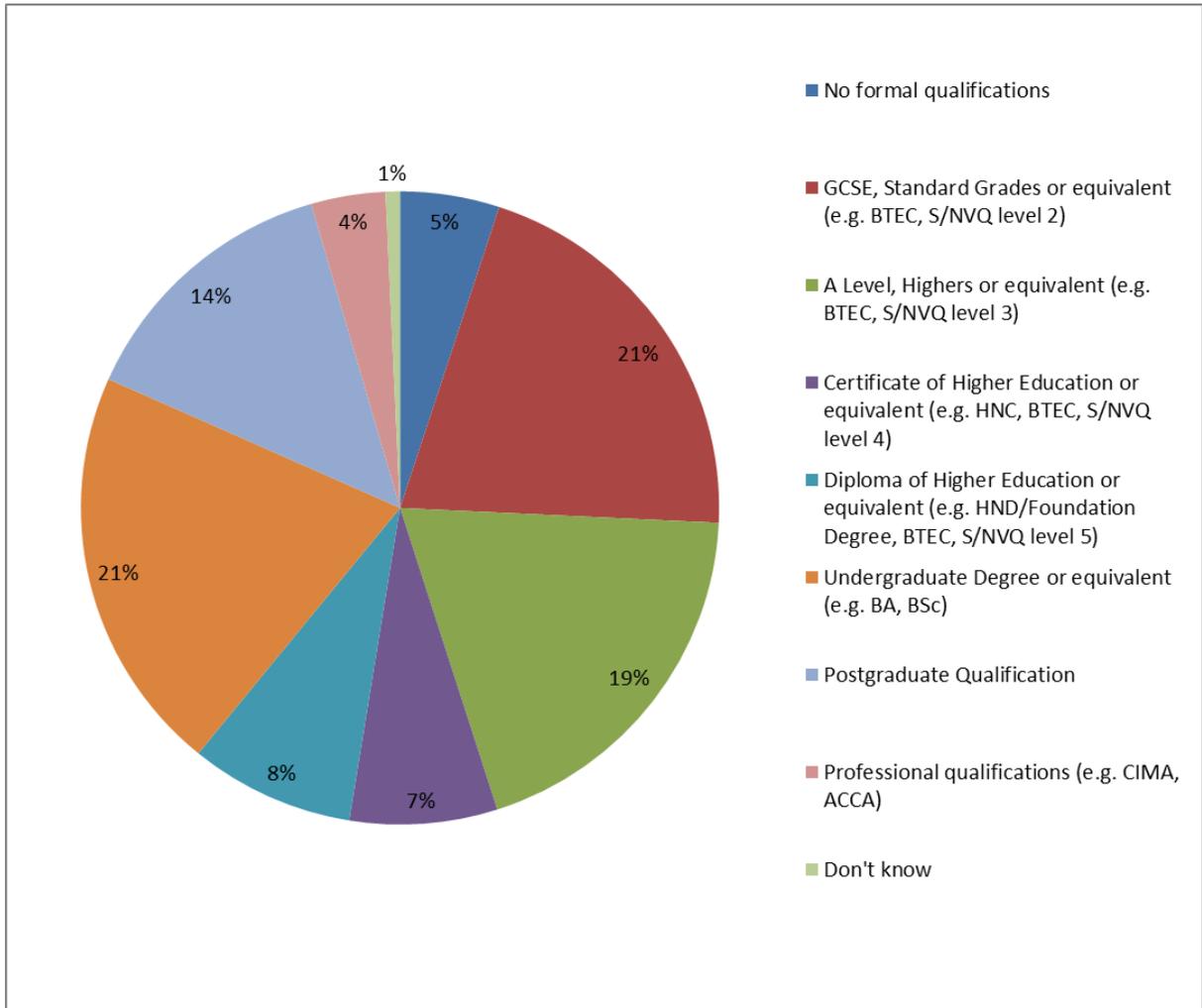


Figure 1: Summary of parents' highest academic qualification

With respect to the child's gender, there were slightly more boys than girls in the sample, with 825 boys and 685 girls (one parent refused to state the gender of their child). In terms of the child's age, there were slightly more parents of children aged 5 and above. The Pie chart below indicates the percentage of parents in each age group.

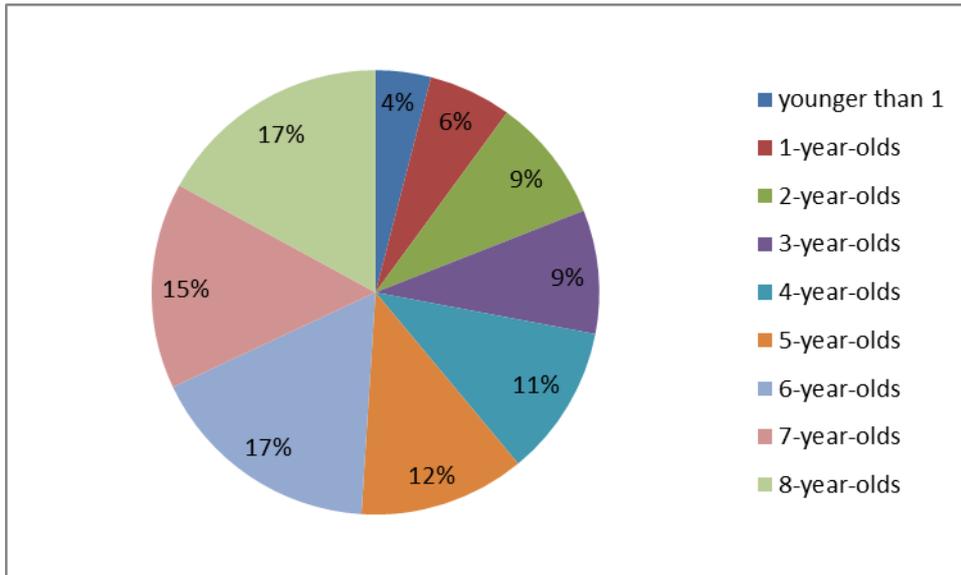


Figure 2: Percentage of parents by children's age 0-8 years (children younger than one were included in the 1 category).

The parents reported that most of the children had siblings but a third (34%) of the children were an only child. Those with siblings were: 32% the younger child; 9% middle child; 24% the oldest child and 1% of children were either a twin, triplet or quadruplet. Overall in the sample, there were 7% children with special educational needs, as identified by a professional.

3. General reading practices with children (quantitative analyses)

This section outlines key findings concerning parents' general reading practices with their children, the specific focus being on digital media and their concerns about their children's use of these. We also outline how these patterns relate to the child's gender and age. Digital media are defined broadly to include a range of devices, including TV, Games console (like an X-Box, Playstation, or Wii); handheld video game player (like a PSP, or Nintendo DS); "smartphone" (i.e. a mobile phone that you can use the internet on); iPod Touch or other type of video iPod; tablet device (like an iPad, Galaxy Tab, Nexus 7, Microsoft Surface, or Kindle Fire); basic e-reader device (such as a Kindle or Nook); laptop or desktop computer; and/or educational game device (such as a Leapster or a V-Smile). Given that the terms digital media and new technologies are often used synonymously in literature and popular discourse, we use them interchangeably in this report.

3.1 Practices in relation to the use of digital media

3.1.1 Confidence of using digital media

Confidence in respect of the use of digital media is high with 92% of parents saying that they are confident users of technology. This is higher than the reported confidence of use of technology by their child, with 73% of parents saying their child is a confident user of digital media.

3.1.2 Frequency of use

When asked about the amount of time their child spends using digital media devices at home, TV was reported as the most frequently used technology across all age groups: 82% of parents responded that their child watched TV every day - with 44% saying they watched TV up to 3 hours a day. A further 28% of parents said their child watched TV up to an hour a day. Almost a third (30%) said their child used a games console every day, with 15% saying that they played for up to an hour a day. In contrast, just one in five (19%) of parents said their child uses an e-reader every day with 57% saying their child never uses one despite having one in their household. Similarly, 38% said their child never uses educational game devices despite having one in their household. Almost one in ten (9%) parents feels their child spends far too much time using digital media.

We found no statistical differences when looking at how overall usage of digital media relates to child's gender or age. However, across all devices many parents of 0-2 year olds said their child never used each device when compared with other age groups. This warrants further investigation.

Ownership and frequency of usage of the individual digital media at home are reported in detail in the Appendix, focusing specifically on the age and gender of the child.

3.1.3 Reasons for using digital devices

We asked parents about the reasons their child uses digital media, giving them a list of seven options: to be entertained; to learn something; to relax; so that they (the parents) can get things done; to keep the child safe and out of trouble; to connect with other family members and other reasons.

Of those parental responses that indicated that their child spent some time using digital media, 60% of parents said that their child often uses devices to be entertained. Following this, 42% of parents said that their child often uses digital media to learn something new, whilst 68% said that their child uses it at least sometimes so that they can get things done themselves.

We checked the frequencies for each response with the chi-square test to ascertain possible statistically significant differences between boys and girls. Overall, gender was a significant factor only within the category: “Connecting with family” ($X^2(3) = 9.07, p = .028$), with parents of boys more likely to say their child ‘never’ uses digital media to connect with other family members (z-score 2.60; boys: 29%, girls: 23%). There were no statistically significant age differences for this question.

Table 2: Percentage of parents listing specific reasons for their child's use of digital media

Reasons for why their child uses digital media	Frequency of use digital media for the individual reasons			
	Often	Sometimes	Once	Never
Entertainment	60%	34%	5%	1%
Learning	42%	48%	7%	3%
Relax	36%	41%	14%	9%
Parent can get things done	24%	44%	22%	11%
Child keeps safe	22%	35%	21%	23%
Connect with family	14%	37%	23%	26%

70% of parents whose children use digital media said they do so to play games, 65% said they watch television or films and 60% to play educational games. Only a quarter (25%) said their child uses them to read e-books.

3.1.4 Concerns regarding the use of digital media

Parents were asked about their concerns regarding children’s digital media use with nine options to choose from. Table 3 summarises the results (multiple responses were allowed for this question). The concern that their child might be exposed to inappropriate content was the most prevalent among parents (40%), closely followed by possible addiction to technology (36%). The concern that child will miss out on other important experiences was a concern to more than a third of the parents.

Table 3: Most important concerns in relation to the use of digital media and the corresponding percentage of parents

Biggest concerns	Percentage of parents
My child might be exposed to inappropriate content	40%
My child will get addicted to technology	36%
It takes them away from other experiences that are important for children’s development	34%
My child will not want to play outside	27%
My child will have less social contact with other children	26%
No concerns	16%
My child might become overweight	11%
They can harm my child’s brain	11%
Don’t know	1%

Concerns around possible harm to the child’s brain are a particular worry to parents of boys (13% of parents of boys versus 8% of parents of girls, $X^2(1) = 7.37$, $p = .007$), while the concern about missing out on other important experiences is more prevalent among parents of girls than boys (38% versus 30%; $X^2(1) = 9.76$, $p = .002$). Inappropriate content was a worry especially for parents of eight-year-old

children when compared to parents of the younger age groups ($\chi^2(3) = 9.97, p = .038$). (Eight-years old is the oldest age group that we surveyed).

3.1.5 Co-viewing and co-using digital devices

We were interested in ascertaining the reasons parents gave for using, or not using, digital media with their child. Overall, 79% of parents said they use digital media with their child. However, half of parents (51%) said that their child uses digital media alone on some occasions. Of those that use digital media together with their child, the most common reason for this is that their '*child enjoys doing so*' (64%) followed by '*it helps them learn digital skills*' (54%) and '*it's a good way to spend time together*' (52%).

Of those that don't use digital media with their child, a quarter (26%) said that they prefer to spend the time with their child doing something else whilst a further 24% don't have time, and one in five (19%) said they and their child have their own separate devices to use.

3.1.6 Advice and guidance on the use of digital media

Half (51%) of parents indicated that they would like more advice, support or guidance from experts about how to find good TV programmes, games and websites that can support their child's learning. In line with this, 48% would like advice from experts about how much time their children should spend using TV, games and computers.

3.2 Practices in relation to reading with digital and print books

3.2.1 General practices

Parents tended to report that they read print books with their child more than e-books, with 56% of parents saying they read print books with their child every day or almost every day. Only 6% of parents read e-books with their children every day or almost every day.

Similarly, more parents reported they read print books every day or almost day themselves (29%), than e-books (11%). Half (50%) of the parents said that they enjoy reading for pleasure very much whilst 16% said that they don't like reading very much or at all.

3.2.2 Frequency of reading

When asked about their children's reading for pleasure, half (50%) of the parents said their child reads alone, whilst 82% said they read with their child. Of those whose child reads alone, 51% of parents said that their child reads print books every day or almost every day by themselves, compared to only 7% for interactive e-books

and 5% for simple e-books. The differences between the frequencies of children reading print books and interactive e-books or simple e-books on their own were statistically significant at the $p < .001$ level. Significantly more girls than boys use print books every day (60% of girls versus 52 % of boys, $X^2(1)= 6.5, p =.011$). Otherwise, there are no gender differences in respect of the frequency of reading of interactive or simple e-books. For print books, there were significant differences between the age groups for parents reporting that their children use these resources on an everyday basis ($X^2 (3) = 16.57, p < .001$), with children of 6-7 years being reported to read print books less often than children in the other age categories ($p < .001$, based on analysis of adjusted standardised residuals). For simple e-books, there were also age differences ($X^2 (3) = 22.78, p < .001$) with parents of 6-7 year old children reporting that their children use simple e-books several times a week significantly more than the rest of the children ($p < .001$). Overall, the use of simple e-books several times –per week was reported by 14.4% of parents but in the age-group of 6-7 this was 21.1%.

A higher proportion of parents reported that the amount of time their child spends reading print books is just right (67%), compared to e-books (59%). However, more parents reported their child does not spend enough time reading print books compared to e-books (21% compared to 13%). A substantial minority of parents reported that they didn't know how they felt about the amount of time their child spends reading e-books (18%).

3.2.3 Reasons for using print or digital books

Following this was interactive e-books (30% reading for pleasure and 34% reading for education) then simple e-books (15% and 15% for reading for pleasure and reading for education). (The percentages do not amount to 100% as some parents

chose more than one format).



Parents who reported that their child prefers reading print books for pleasure told us that this was because their child likes turning the pages of print books (52%), that they like to own their print books (43%) and 41% said children like to visit the library to choose the books. Of those parents whose children

prefer reading e-books for pleasure, half (48%) said this is because their child enjoys using digital devices. Following this, 35% said their child likes the additional features available in e-books and 39% said they like interacting with the e-book.

3.2.4 Concerns regarding digital books

To better understand the relatively low reported usage of interactive e-books with their children, we analysed parents' concerns regarding the use of these, giving them a list of 10 possible reasons, outlined in Table 4 below. The biggest concerns about interactive e-book-use was that it would increase children's screen time (45%); that it may mean their child would lose interest in print books (35%), followed closely by worries that their child would be exposed to inappropriate content (31%) or too much advertising (27%).

Table 4: Parents' concerns regarding the use of digital books with their children (parents could choose more than one option so their answers do not add up to 100%).

Biggest concerns	Percentage of parents
I don't want my child to have too much screen time	45%
I am concerned my child will lose interest in print books	35%
My child might be exposed to inappropriate content	31%
My child might be exposed to too much advertising	27%
I'm concerned about the impact it might have on my child's attention span and/or ability to focus	26%
I am less able to monitor or guide what my child looks at	22%
I am concerned about my child purchasing add-ons without my knowledge	21%
I don't think e-books help my child to learn effectively	14%
They can harm my child's brain	10%
No concerns	8%
Don't know	3%
Other	2%

Parents of girls reported concerns about digital books more frequently than parents of boys across most factors:

- I am less able to monitor or guide what my child looks at (27% of girls versus 18% of boys, $X^2(1)=18.1$, $p<.001$)
- My child might be exposed to inappropriate content (38% versus 28% of parents of boys, $X^2(1)=27.3$, $p <.001$)
- My child might be exposed to too much advertising (31% of parents of girls versus 24% of parents of boys, $X^2(1)=7.75$, $p =.005$).
- I'm concerned about the impact it might have on my child's attention span and/or ability to focus (29% versus 23%, $X^2(1)= 7.51$, $p =.006$)
- I am concerned about my child purchasing add-ons without my knowledge (24% versus 19%; $X^2(1)=5.73$, $p =.017$).
- I am concerned my child will lose interest in print books (38% of parents of girls versus 33% of boys, $X^2(1)=4.77$, $p =.029$).

Interestingly, parents who said they have no concerns about interactive digital books were more likely to have a boy than a girl (11% versus 4.4% of parents of girls, $X^2(1)=22.70$, $p <.001$).

There were no age differences for this question.

3.2.5 Co-reading and child reading independently

Following the high percentage of parents (82%) who report reading together with their children, we analysed why parents think it is important. Parents who read print books with their child said the most important reasons are that their child enjoys it (64%), it is a good way to spend time together (63%) and parents enjoy it themselves (58%).

Of those parents who do read e-books with their child, the same top reasons were cited: more than half (53%) do so because their child enjoys it whilst 52% think it's a good way to spend time together and 43% enjoy it themselves. (The questions about the main reasons for co-reading were asked separately for print and simple and/or interactive e-books).

With respect to the child's independent reading, 68% of parents who said their child reads print books by themselves said that they do so because they like to read independently, whilst 36% said that it helps them learn how to use a print book and 33% said it helps them benefit from the content. The most common answer as to why their child reads e-books alone is that the parent thinks that children like to read independently (63%) followed by the belief that it helps children learn digital skills (37%).

Of those parents whose children do not read e-books independently, 31% said the reason behind this was that they don't want their children to use a screen too much whilst 22% only want their child to read print books and a further 22% said their child

isn't interested in using e-books. The average age that parents think is the 'best' time to start reading with their child is aged 0-1 year for print books, 2 years for interactive e-books and 3 years for simple e-books.

3.2.6 Advice on books and e-books

47% of parents would like more advice regarding interactive e-books and out of these parents, 58% want advice about how they can be used to entertain their child and 62% of parents would like advice concerning how they can be harnessed to support their child's learning. Congruent with wanting advice, just 39% of parents agreed that they feel up to date regarding the current debates around children's use of interactive e-books and 31% reported sometimes feeling confused about the right thing to do when it comes to their child's use of interactive e-books.

3.3 Comparisons with US data

To place the present data in an international context, we compared the main findings with the national survey *Learning at home: families' educational media use in America* (Rideout, 2014), commissioned by the Joan Ganz Cooney Center USA. We were keen to ascertain whether the key findings of the *Learning at home: families' educational media use in America* survey would be replicated in a UK sample, notably those in relation to the key reasons why parents do or do not use digital media with their children. The Joan Ganz Cooney Center dataset was shared with us and the data sets were prepared in ways that made a comparison possible by adjusting children's ages and removing additional options provided in the UK data for selected questions. This section reports some tentative comparisons in relation to questions that we included in the UK survey drawing on Joan Ganz Cooney Center's original survey.

There are parallels in terms of ownership of digital devices at home, with the highest percentage reported for TV ownership. However, when comparing the UK and US samples in terms of tablet device ownership, 80 % of UK 0-8 year olds had a tablet at home, while for the US sample, only 55% of 2-10-year olds have access to a tablet at home. As for the common reasons why parents use media with their child, we offered parents a similar set of options to the original Joan Ganz Cooney Center's survey, with some additional options. This allowed us to examine whether there are any similar patterns. In Tables 5, 6 and 7, we compared children of the same age for both datasets, which represents N= 1185 parents in the American survey and N=1359/1360 (one responder refused to give child's gender) in the UK survey.

Table 5: Comparison of US and UK percentages for reasons to use digital media with their child (only comparable options from the two datasets are listed)

Key reasons	US	UK
-------------	----	----

	parents	parents
It's a good way to spend time together	49%	54%
To make sure he/she doesn't get exposed to inappropriate content	62%	50%
It helps him/her to benefit from the content	41%	47%
He/she asks me to	54%	44%
I enjoy it	56%	38%
I happen to be in the same room	26%	30%
To make sure he/she doesn't break the equipment	21%	22%

A statistical comparison of those items that are comparable, controlling for child's age and gender, showed that there were some significant differences between US and UK parental responses. Notably, more parental responses in the US dataset indicated that US parents want to use digital media together with their child to ensure that their child is not exposed to inappropriate content ($X^2(1) = 31.1, p < .001$) or because the child asks them to use the digital media with them ($X^2(1) = 21.67, p < .001$) or because, they, as parents, simply enjoy the joint use ($X^2(1) = 69.65, p < .001$).

Conversely, there were more British parents who indicated that using digital media together with their child, helps their child to "benefit from the content". $X^2(1) = 7.06, p = .008$. However, this difference only stood for boys ($X^2(1) = 7.61, p = .006$) and not for girls ($p > .5$)

Other parental responses were not significantly different between the US and UK parents or were only significant for specific groups of children.

Another question that was comparable in the US and UK dataset asked about the reasons why parents did not use digital media together with their children.

Comparing the percentages of parental responses showed some significant differences for specific reasons. Table 6 shows the US and UK percentages.

Table 6: Percentages of responded by US and UK parents in relation to the key reasons for parents not using digital media together with their children

Key reasons	US parents	UK parents
I know my child is using safe content	34%	27%
I need the time to get other things done	47%	24%
It's better for him/her to do it independently	23%	22%
We have our own separate devices	13%	21%
He/she doesn't want me to	8%	15%
I'm not home enough	15%	10%
He/she uses media in a different room from me	9%	10%
We have difficulty finding content we both enjoy	9%	9%
Other	7%	1%

Statistical comparison of these differences showed that more US parents selected the reason that they '*need the time to get other things done*' than UK parents ($\chi^2(1) = 41.80, p < .001$). More UK parents, however, responded that the reason is that they have their own separate devices ($\chi^2(1) = 9.23, p = .002$). This, however, only held for boys ($\chi^2(1) = 10.64, p < .001$) and not for girls ($p > .5$). In contrast, more UK parents selected the option '*He/she doesn't want me to*' ($\chi^2(1) = 8.35, p = .004$), but the difference between US and UK parents for this option was only significant for girls ($\chi^2(1) = 11.75, p < .001$) and not for boys (UK: 17% US: 9%).

Finally, we compared the extent to which US and UK parents agree with a set of statements about the kind of guidance and advice they would like in relation to the use of various digital media.

The comparable items are displayed in Table 7, along with the corresponding percentages for US and UK parental responses.

Table 7: Percentages of US and UK parental responses concerning parents' views of how much they agree or disagree with given statements

	I would like more information from experts about how to find good TV shows, games and websites that can support my child's learning.		I would like more information about how much TV, gaming, and computer time is good for my child's development.		I'd like more information on what age my child should be allowed to get a cell/mobile phone.	
	US	UK	US	UK	US	UK
Agree	59%	51%	55%	48%	37%	39%
Disagree	33%	22%	36%	24%	39%	31%

A comparison revealed that the US and UK parental responses for this question were significantly different only when comparing the parents of boys. Namely, there were more UK parents of boys than US parents of boys who agreed with the statement that they would like more information on how to find good resources to support their child's learning ($\chi^2(1) = 6.29, p = .012$; UK: 72% US: 65%) or about how much digital use is appropriate for their child's development ($\chi^2(1) = 8.49, p = .004$; UK: 69% US: 62%) or what age they should be allowed to use a cell (mobile) phone ($\chi^2(1) = 6.16, p = .013$; UK: 62% US: 50%).

4. Parents' perceptions- qualitative answers

As part of the survey, parents were asked some open-ended questions about their perceptions of the value of digital media and digital books for their children's learning and reading for pleasure. The respondents were asked five open-ended questions in total, with no restriction on the length of their answers for any of the five questions.

The questions were:

- Are there any other kinds of advice, support and guidance you would like concerning children's use of digital media?
- What other kinds of advice, support and guidance, if any, would you like around interactive e-books and your child?
- Are there any ways that children's interactive e-books could be improved?
- Do you think there are any other differences between reading a print book, a simple e-book or an interactive e-book with your child?
- Are there any challenges to balancing your child's engagement with digital activities (e.g. watching TV, using a computer, tablet, smartphone, e-reader or games console) and other activities (e.g. reading print books, writing, drawing, craft activities)? Please give details.

In many cases, parents used this opportunity to air their general concerns about digital technology or used the open-ended answers as a place to express their opinion in very broad general terms rather than answering the question set. This is the reason the frequency counts are relatively low for these answers. Only parents who decided to fully and meaningfully answer the open-ended questions were included in a more in-depth analysis reported here.

Method for analysing parents' responses:

For all questions reported here, we used content analysis to identify and code the main themes in parents' responses. Content analysis is a research method frequently used within qualitative research. Content analysis enables the researcher to draw inferences from written data in a systematic and objective way in order to capture and quantify specific phenomena (Neuendorf, 2002). In order to generate codes in a reliable way, the analysis was conducted in a series of steps. First, we agreed on coding rules and conceptualised the content of each code. Second, we generated initial analytical codes from the data, each coder individually. We then met to discuss our categories, identified redundant and similar codes, each of the authors creating an initial list of categories into which the responses could be allocated. We then created a set of analytical codes with illustrative examples for each. Using these codes, we coded a random selection of data, compared our coding and discussed potential discrepancies. If new analytical codes were created in this process, we checked again for consistency in coding between us with illustrative examples for

each of the new codes. The final codes were then used to code the entire sample. Reliability of coding was checked by an independent coder who coded a random selection of 20% of the data, using our final categories. The inter-rater agreement between the independent coder and the first author of this report was Kappa= 0.768 ($p < 0.001$), which is, according to Landis & Koch (1977) substantial.

4.1 Advice and guidance on the use of digital media

As indicated in Section 3, we asked parents whether they would like some expert advice and guidance regarding their children's media use and just over half (51.5 %) indicated that they agree or strongly agree that they would like more advice or guidance from experts on how to find good TV programmes, games and websites that can support their children's learning. These percentages were lower but similar for the advice in relation to the amount of time their child should spend using digital media (39%) and the appropriate age for using digital media (48.1%). 42.2% also agreed that they would like more guidance on how to limit the usage of digital media. A small minority of parents (1.3%) said they "did not know" whether they wished to have any further advice, the rest of the parents (again, almost half of them) disagreed or strongly disagreed that they would need any advice regarding these issues. We were keen to understand the reasons behind this striking difference among parents.

With the first open-ended question, we asked the parents: "Are there any other kinds of advice, support and guidance you would like concerning children's use of digital media?" Almost a third of all respondents, (444 out of 1503) answered this question in full so we cannot generalise based on the answers for the entire population, but we can identify some common patterns.

Out of these 444 parents, 270 indicated that they don't want any advice at all, either because they feel confident enough about how their child spends their time (e.g. '*No, already limit screen time*') or because they feel their child is too young for the use of digital media (e.g. '*No not at the moment as she is only 8 months old*'). In contrast, the other half of this subset of parents explicitly said they would very much welcome more guidance in this area. The answers of these parents were examined for general patterns using content analysis. This analysis yielded four main categories: Research evidence, Best resources, Best ways to use the resources, General information. These are presented in Figure 3 and further explained in the following sections.

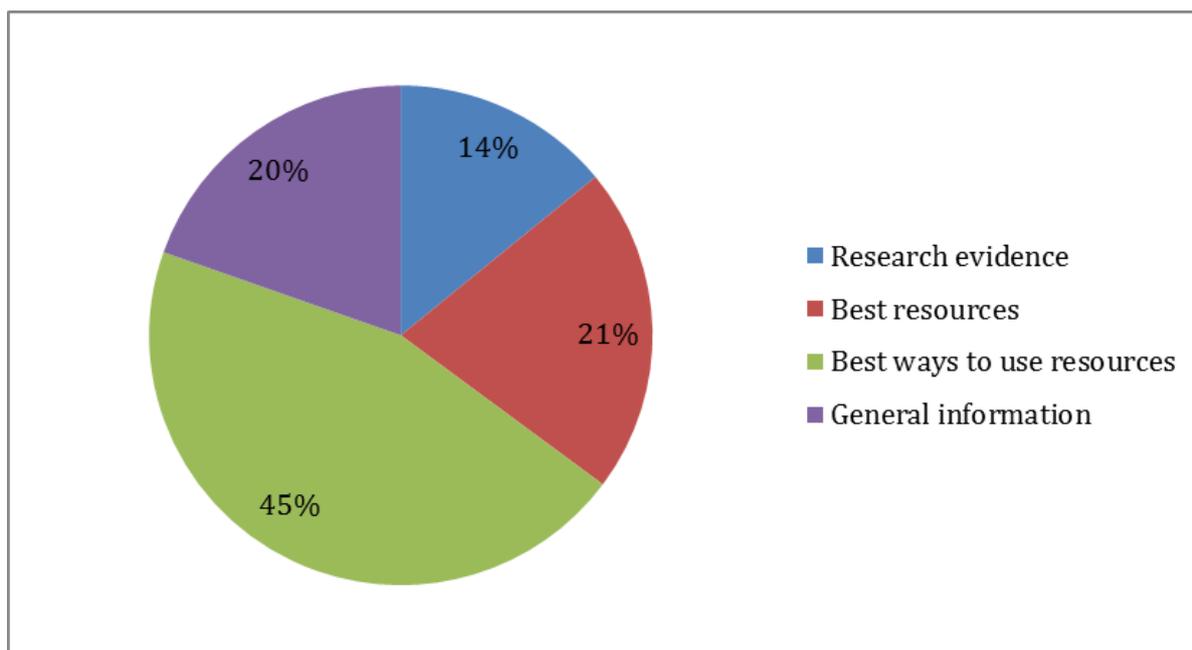


Figure 3: Percentages of parents listing different kinds of advice they would like in relation to digital media (N= 444)

4.1.1 Best ways to use digital media resources

Almost half (45%) of parents interested in some kind of advice or guidance around digital media wanted to know how to effectively use the resources already available. The main issue seemed to be finding the right balance between digital and non-digital entertainment, as exemplified by the answer: *'How to keep it in moderation'*. In addition, parents were keen on receiving more guidance in relation to safeguarding and protection from inappropriate content when their child uses digital media. Parents mentioned that they would like more advice on how to lock certain sites or install blocking filters and generally: *'How to protect them [the children] from bad media'*. We did not ask specifically about where the concern for inappropriate content stemmed from, but several answers indicated that parents are worried that their children might access inappropriate content because of the lack of blocking mechanisms or because of the presence of *'religious influence online'*, *'inappropriate popups'* or *'inappropriate adults'*.

4.1.2 Best resources

Although many parents were keen for advice on how to use digital media with their children, a fifth (21% of parents) were keen to find out more about which are the best digital resources to use with their child, where to find them and which features they should have (e.g. more sounds, better pictures or labels). It was clear that when looking for resources, parents were keen to find those which were either aligned with the school curriculum (e.g. *'Content that will support the national curriculum'*) or generally deemed to be educational (e.g. *'Proven apps for development and*

education and specific developmental support or *'Age appropriate content and free content relevant to learning'*). Only a handful of parents indicated that the *'Main concern is finding things that have an educational value but are still fun'*.

4.1.3 General information

Interestingly, out of the 19.5 % of parents who indicated that 'any advice' would be helpful, their answers varied in terms of who should provide this kind of advice. Some parents felt that it should be the government, some told us that they expect this advice to come from the school their child attends and some would like more opportunities for parent exchange. Overall, there was a mixed picture in terms of the kinds of advice parents would like regarding the use of digital media, with a strong caveat that almost half of the sample did not want any guidance, support or advice at all.

4.1.4 Advice based on research evidence

Responses in this category (14% overall) tended to indicate that parents would welcome expert advice regarding health risks and the developmental influence of digital media. Parents were keen to have more general health-related guidance, for example *'about health issues like vision or posture problems'* or about *'specific media types which might be appropriate for their child.'* As one parent explained, parents are keen to understand the differences between various media and how they might impact on their children's development: *'I'd like more advice on why screen time is bad for children under 3 because this might help me to make better informed choices about what sort of media she sees, for example, is an interactive children" story on a phone app acceptable, and if not, why is that different to a picture book?'*

4.2 Advice on the use of digital books

In the survey, we asked parents more specifically about their practices and perceptions concerning digital books and the role these play in supporting their children's reading for pleasure. We found that overall, parents preferred print books in relation to supporting and enjoying co-reading with their child. However, and similar to the use of digital media, about half of the parents surveyed indicated they would like more advice regarding interactive e-books. We asked the parents an open-ended question in order to ascertain the details of the kind of support, if any, they would like around interactive e-books and why this might be the case.

From parents' answers, it was evident that their experiences with interactive digital books or enhanced e-books varied, with some saying they would like to know *'how to get the most out of them'*, and others revealing that *'I've never seen an interactive e book so maybe they could be demonstrated at the library'*. There were overall 271 parents who shared in detail the kind of advice they would need to be able to better support their children's reading for pleasure practices. Parents' answers were

consistent with the four categories we established for previous questions around advice and guidance for digital media use: Advice based on research evidence; Best resources; Best ways to use digital media resource and General information.

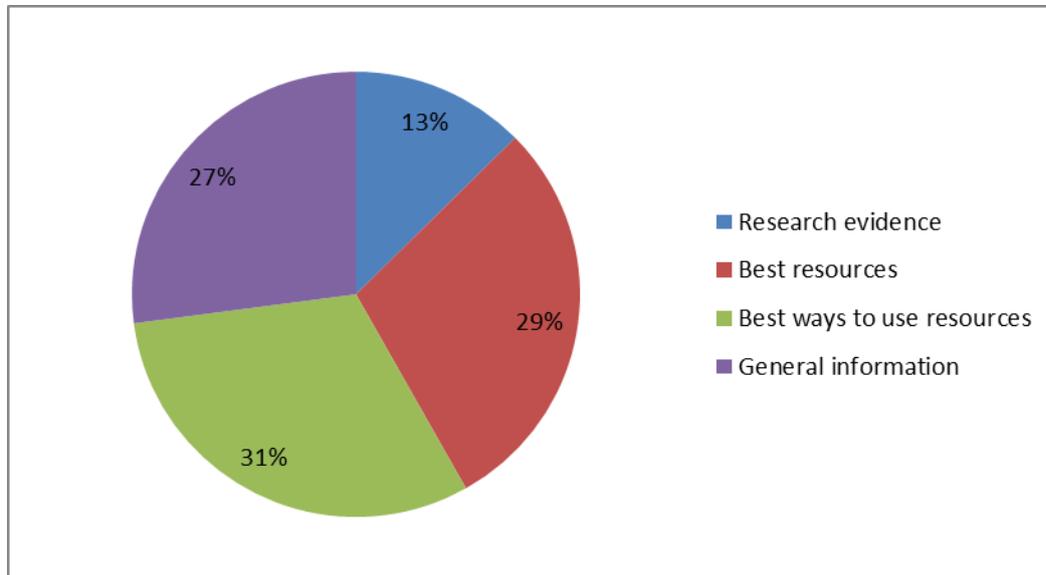


Figure 4: Percentages of parents requesting specific kind of guidance for digital books (N= 271)

Like the advice requested regarding the use of digital media more generally (4.1.), parents were most keen to know ‘how’ to use the resources in the most effective way: 31% of the 271 parents reported wanting to know *how* to use the interactive books: *‘how best to use them as you can’t always read them like a printed book’*. While some parents (overall 27%) were keen on any kind of advice (e.g. *‘any help would be good’*), others were more specific about the kind of advice they are after, with 12.5% of parents saying they would like more expert advice on the developmental appropriateness of specific e-books. For this category, it was interesting to note a greater variety in terms of ‘who’ should provide guidance regarding interactive books. While for digital resources the suggestion seemed to have been that this should come from a government organisation, for this question we found parents saying that the support could come from other parents, the school or the children themselves: *“parents like me giving feedback”; ‘I think schools should be advising parents about the use of interactive ebooks’; ‘recommendation from other children would be useful”* or *‘readers choice (sic) a list of top most read books.’*

4.3 Challenges for the use of digital media

Cognisant of the need to strike a balance between traditional and digital engagement for children’s holistic development, we asked parents about the strategies they employ, any concerns or tips they have to share, in relation to their children’s

engagement with digital and non-digital media. One of the open-ended questions therefore was: 'Are there any challenges to ensuring there is a balance between your child's engagement with digital activities (e.g. watching TV, using a computer, tablet, smartphone, e-reader or games console) and their engagement with other activities (e.g. reading print books)?'

This question was answered by 709 parents, representing a high response rate. We analysed the question in two phases: Phase I using content analysis and Phase II using detailed thematic analysis. We include only the results of the content analysis here, the results of the thematic analysis, focused on main themes in parents' narratives about digital media, will be found in Kucirkova & Littleton, in preparation, a).

When looking across the parents' responses, there was a strong sense of the need for balance in children's digital and non-digital engagement and indeed, many parents used this open-ended question as an opportunity to express their views on the importance of print or non-digital engagement in their children's lives. We include some of these answers below:

'My son reads for pleasure every night before he goes to sleep. He has only stopped having his stories read to him by me at night in the last few months. He only has digital stimulation before bedtime when there is no school the next day.'

'Too much digital media of any kind tends to distract from old fashioned games and toys. I want my son to not rely in (sic) technology too much even if this is the future as I would like him to be able to deal with problems that arise if technology either fails.'

'My child does craft activities. And reads print books a lot. However; she also watches to (sic) and uses apps (games and educational). Most of all I would like my daughter to play out more within the community.'

'Modern life means much more digital content available, but kids need outdoor exercise and social interaction to develop. Getting the balance right is a challenge.'

The content analysis focused on the challenges parents identified in achieving the balance. The analysis generated eight main codes, that is eight key challenges identified by parents. We outline each category along with illustrative examples. The percentage of parents whose answers fitted the description of the individual categories appears in Figure 5 below.

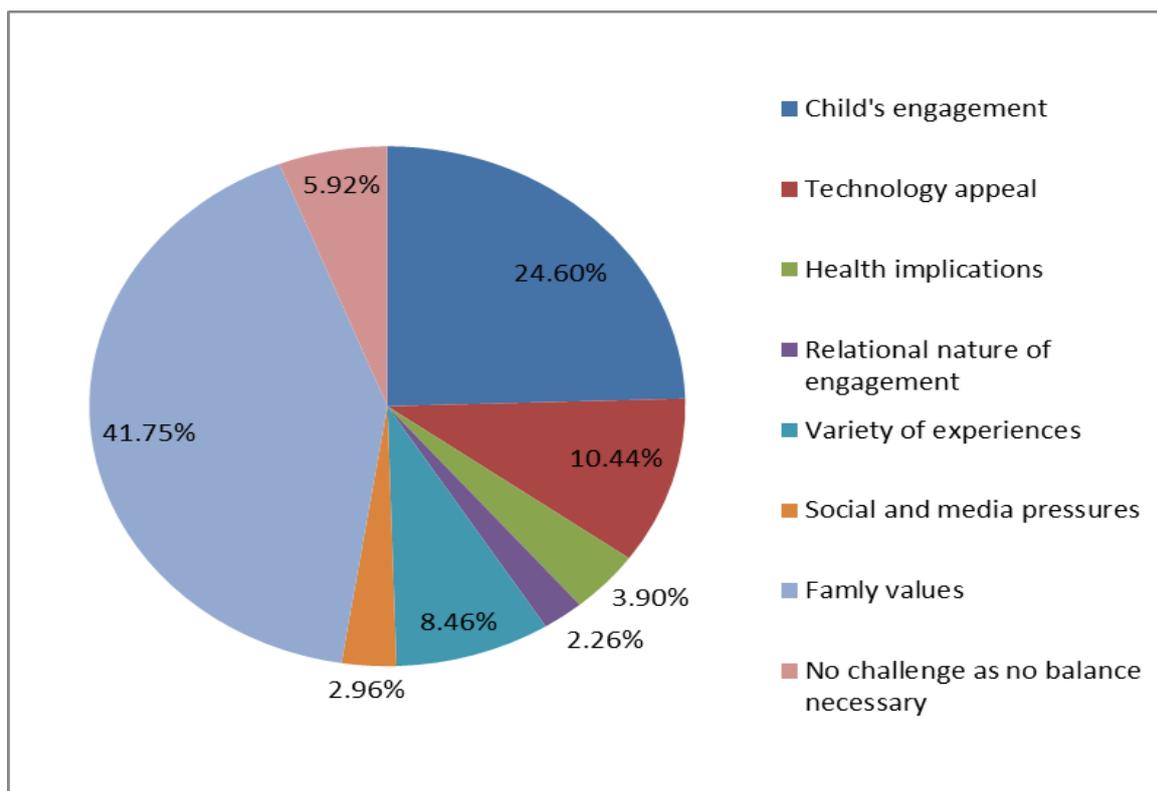


Figure 5: Percentages of parents for individual categories capturing the biggest challenges in relation to balanced digital activities (N= 709)

4.3.1 Child's engagement with digital media

Answers in this category indicated that the parents' biggest challenge in striking the balance between their child's digital and non-digital activities is the child's engagement; it is their preference and need. The parents in this category either perceived that the challenge stemmed from the child or at least that their child is the key reason why it is difficult to strike the balance. Parents whose answers were included in this category told us, for example, that: *"Mostly kids like attractive and new things"* ; *"Child prefers to use digital devices rather than paper books, likes to browse and choose different books of her choice to download"* ; *"It is hard for my child to understand that he can do something else other than using the PC."*

Some parents told us that *'Children seem to want to use adult things, I want to encourage age appropriate non technological toys.'* Or *'Particularly as my son has older siblings it is a challenge to maintain his 'simple' attitude.'*

One parent also told us that : *'My child spends time doing varied activities from reading, drawing, playing with toys, playing outside, listening to music and using simple apps on an iPad. There's no challenge or need to get him to spend time doing each of these activities at this stage.'*

4.3.2 Technology appeal

Unlike the parental responses in the child's engagement category, parental responses in this category indicate that the biggest challenge to balancing their child's digital activities is the appealing nature of the technology. The agentive role assigned to technologies by the parents was evident in several answers, as exemplified in the extracts presented here:

'Also the touch screen is so child friendly with naturalistic swiping actions so it is no problem that children can learn to use the tablets.'

'My children are happy playing, until the TV goes on...then they would sit in front of it for hours if I let them.'

It wasn't made clear what exactly it is about the technology that has this almost mesmerising effect on children. Some parents seemed to think it is the ubiquity of technology while others thought it is the newness or appealing design and exciting activities it offers:

'Electronic / interactive solutions are flashy and more immediately appealing compared to more traditional entertainment so it can be difficult to convince a child to use the traditional over the new.'

'Technology is exciting to children - traditional media can seem boring.'

It wasn't the case that parents always perceived technology's wide appeal as negative. Rather, there seemed to have been a perception that digital media can, at times, offer children more opportunities for creative and imaginative play than non-digital media, as this parent expressed it: *'They don't always want to 'just play' as they don't have the characters, toys or imagination that just plugging in a game or the TV can offer.'*

4.3.3 Health implications

Parents' responses in this category indicated that the challenge is mostly about ensuring their child's healthy development with digital and non-digital devices. Answers in this category described strategies parents have developed to limit their child's exposure to media or look for other ways of striking a balance - mainly because of their concerns around their child's health. Answers such as *'Screen time should be limited until we know how it affects young brains'* were the most frequent concern mentioned in this category.

4.3.4 Relational nature of engagement

The responses in this category indicated that for some parents the challenge is the relational nature of engagement with digital media. For instance, parents admitted that they sometimes leave their child with digital media so that they can perform the tasks they need to, as illustrated with this quote: *'The ability for me to get domestic*

jobs done can sometimes mean I will encourage TV watching or use of her tablet' or 'Its easy to turn on things and leave them to it. I can get other stuff done" or "I need to get things done so I get my son to watch shows on the tablet because that is the only thing that will keep his attention for long enough.'

On the other hand, there were also responses in this category that indicated that the balance is sometimes tilted more towards non-digital engagement, again because of the parent's own involvement with the child: *'I'm always with my child he prefers to play on the floor with me than watch TV'*. Whether it was the prevalence of digital or non-digital engagement in their child's life, it was clear that the time parents have available was key: *'Exposing a child to digital content can be an easy option to keep them quiet. Interacting, preparing activities and going out and doing things takes more time, energy and planning.'*

4.3.5 Variety of experiences

Responses in this category emphasised the challenge of providing the child with a variety of activities and how this affects the balance for children's digital activities. For instance, parents told us that they want their children to *'spend more time outdoors'*, but also see the need for digital engagement: *'I want to limit the amount of screen time she has but appreciate a lot of it is educational and needed for school etc.'*

It wasn't clear why parents think that a variety of activities is important, but for many diversity was the antidote to the dominance of digital entertainment, as illustrated by this quote: *'My child wants to use the TV, watch YouTube all the time, if I let her and cries if I turn it off sometimes. TV trumps most activities, so it is better to try to cut down on TV time and distract with other activities.'*

Although for some families diversity of engagement was not a problem *'they've always done lots of different things'*, most parents in this category felt that it is very difficult to ensure their children get the best of both worlds: *'Difficult to know the correct balance as you want them to be computer literate but also not lose interest in books'* or that *'Planning the day effectively so all activities are covered can be a challenge.'*

4.3.6 Social and media pressures

This category captured the responses of parents who mentioned social and media pressures as key reasons for why they find striking a balance is challenging. One parent summarised the peer pressure faced by their children as follows: *'The phrase "everyone else can" comes to mind'*. Other parents indicated that it is not only the peer pressure, but also general pressure of media affecting their child's digital engagement. Advertising geared towards young children was perceived as especially problematic, as one parent pointed out: *'Media pressure i.e. adverts specifically targeting kids.'* For some the school was perceived as a trigger for

children's exposure to media: *'Teachers at school taking the easy way out and using digital media to teach kids.'* Most importantly, however, parents in this category indicated that whether it is peer or media pressure, it is their role to act as mediators: *'Children are influenced by advertising and what their friends have or what their friends are doing. If their friends think it is cooler to play on a smartphone than do some actual activity like craft or painting, then they will think that as well. It is up to parents to give their child enough confidence not to follow the herd'*.

4.3.7 Family ethos

This category captured not so much the challenges but rather the realities experienced by parents who told us that they have achieved a balance in their children's digital and non-digital engagement because of the ethos of use within their family. Some parents simply stated that the balance is *'not a problem for us'*, while



other parents told us more specifically how this balance has been achieved in their household: *'I feel confident that we've set good foundations. We don't so much limit screen time as have plenty of other things to do and encourage creative play, while including some occasional screen time, so my children*

don't feel the need to spend too much time in front of a screen.' For many parents, 'ground rules' and 'routines' seemed to be the pivotal reasons why the balance works: *'Because we have a routine that we follow.'*; *'I have a set time and my child is happy to stick to house rules'*. Or *'There are challenges, but we have family rules on screen time so my child still chooses other activities such as print books, craft and role play'*. In some families, it seemed to be the child who regulates their own engagement in a balanced way, as this parent told us: *'My child enjoys doing a wide range of things, such as art, crafts, reading, writing, and using her iPad, and independently manages her free time to include at least 2 different activities.'* Other parents were more specific about the interplay between child's own engagement and rules they set in home: *'My child is restricted to screen time, but happily so without asking for more. He 'earns' screen time by independently completing educational work.'*

Overall, parents who answered this question indicated that a good balance between digital and non-digital engagement is important to them and their family. Responses of two parents exemplify the flavour of the opinion shared by most parents: *'should be a balance between ebook and normal books because the child should be able to read both types of book'* and that *'you just need to get it right not too much but still give them freedom'*.

Interestingly, for some parents the reason cited for knowing they have achieved a balance was their children's current educational achievement, as suggested by this parent: *'they (sic) doing just fine at school so i do not need to change anything'*. Other parents were clear that they do not always have control over what their child engages with, as revealed by this father; *'My child's mother doesn't live with us and I cannot have any input into what my child does when she is with her.'*

However, there were also parents (5.92% of responses) who were not worried about their child spending more time with digital than non-digital activities or vice-versa. What mattered to them was the educational nature of their engagement rather than the kind of platform on which this was achieved. These responses were captured in the last category.

4.3.8 No challenge as no balance necessary

The nature of the responses in this category is exemplified by this extract: *'As long as he's being educated that's all that matters'* or another parent told us; *'I am relaxed. The important thing is my son reads. The source is of lesser importance.'*

Other parents seemed to have been less worried about the 'right' balance because of the varied experiences their child has across the day. This parent, for example, explained how a balanced engagement happens across time for her child: *'I think my child has a balanced life; she spends her mornings at nursery, I allow her to watch a movie when she comes home, she's very interactive with her role play toys and I put a lot of effort in to play with her and teach her new things.'*

Also, some parents indicated that their response to this question may alter when their child gets older: *'It's not a big problem now because she's only 5 months but I know it will be in the future. She already enjoys pressing buttons on my phone and looking at photos of herself and her baby cousins. I'm not sure to what extent this is good or bad for her. Her grandparents say that her one year old cousin prefers smartphones to other toys, and will run to grab one if she sees it lying around. I've heard lots of parents say the same of their toddlers. So I can see that is the direction we're heading in and it worries me slightly.'*

4.4 Difference between digital and print books

In several instances throughout the survey, parents indicated that they perceive a clear difference between print and digital books. Some parents also voiced the strong opinion that technology is not something they associate with reading or indeed learning more generally. For instance, these two answers illustrate the nature of such views: *'I do not allow my children to use tech of any kind anywhere. They only use print books'* or *'Reading = Print Books. Entertainment = Electronic. Keep the two separate'*.

In one of the open-ended questions, we asked parents to tell us more about how they think digital and print books compare when it comes to supporting reading for pleasure. Overall, 603 parents answered this question in full, which allowed us to conduct a detailed content analysis. We used a deductive-inductive content analysis for these answers, building on our previous work concerned with digital and print books differences (Kucirkova, Littleton & Cremin, submitted). This work, which drew on a synthesis of literature and informal discussions with teachers, children and research colleagues, identified six key engagements to be particularly salient in reading for pleasure with digital books. By applying the codes to parents' responses, we had the opportunity to refine the facets of engagement with additional categories that captured the factors identified by parents of 0-8 year olds in this survey.

The inductive part of the content analysis involved grouping parents' answers that did not fit any of the six facets and a separate analysis that generated new themes. Answers included in the new themes were reviewed, compared and grouped according to conceptual similarities. These fell in six main areas: Educational potential; Aesthetics of the medium; Health risks; Social role of the medium; Practical features of the hardware; Arbitrary opinion.

We combined these inductive codes with the theoretical (deductive) codes by considering conceptual similarities, which made us arrive at a set of twelve analytical categories:

Affective engagement; Shared engagement; Sustained engagement; Creative engagement; Personalised engagement; Interactive engagement; Educational potential; Aesthetics of the medium; Health risks; Social role of the medium; Practical features of the hardware; Arbitrary opinion.

These categories were further refined through thematic analysis and used as explanatory factors for parents' practices with digital books, reported in Kucirkova & Littleton, in preparation, a). Below, we report the frequency of occurrence and illustrative examples for the key categories that emerged in the inductive-deductive content analysis.

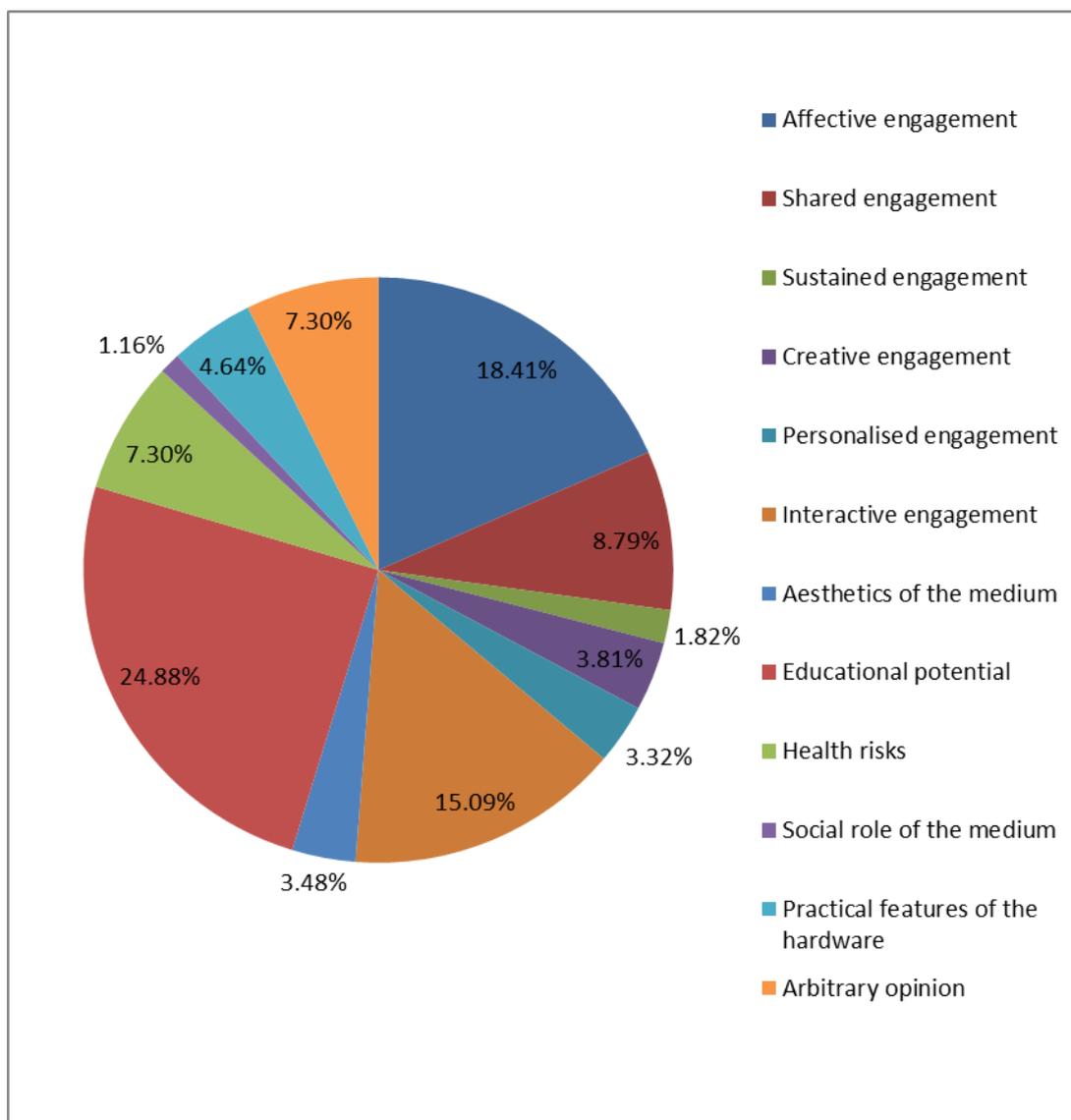


Figure 6: Key categories for parental responses in relation to the difference between digital and print books (N= 603)

4.4.1 Affective engagement

Affective engagement concerns feelings and motivation, especially how the child feels when reading a print or digital book. Parents who perceived the two media to be different in terms of affective engagement focused their answers on the importance of tactility and/or ways of handling the books, for instance turning pages and holding the book in the child’s hands. Responses in this category also mentioned differences in terms of the ways they as parents interact with their child when they co-read a print or digital book. The answers included responses such as *‘it just feels nicer’* or *‘it is cosier reading a print book at bedtime, physically turning the pages is more rewarding.’*

4.4.2 Shared engagement

Shared engagement relates to collaboration and a feeling of a shared experience whilst reading. Responses in this category were united by the view that print and digital books differ in the ways in which they facilitate opportunities for shared engagement with the child. For instance, print books were portrayed as being an appropriate medium for reading at bedtime and there was a clear perception that digital books tended to foster individual, rather than shared, engagement with stories: *'My child is actively socialising with other people when reading a print book. If I gave her a screen she would tell me to go away and disappear into her own world for far too long.'*

4.4.3 Sustained engagement

Sustained engagement relates, in this case, to real-time presence during the reading experience, concentrated attention and focus on the reading resource. Answers in this category indicated that the child tended to get easily distracted with one or the other medium. Again, contrasting opinions were evident for both digital and print books. For print books, some parents thought that: *'With a print book the child won't concentrate more as he can't explore additional content'*, while other parents thought that the print book *'can help your child to focus more than the interactive book'*. The answers in this category thus present a contrasting picture, with some parents perceiving digital books and some perceiving the print books as more or less appropriate to nurture their child's sustained engagement in reading for pleasure.

4.4.4 Creative engagement

Creative engagement relates to an immersive experience that encourages children to envisage 'what if' scenarios and possibilities. The key word for this category was 'imagination' and the potential of one or the other medium to enable children to use their own creativity and come up with their own stories or story characters. Such creative possibilities were by some parents perceived to be superior in print books, because with print books: *'the child uses their own imagination and thought processes with print books.'* Others, in contrast, considered the multimedia features of digital books for supporting creative encounters: *'They can hear how things sound and experiment with sound effects with e-books'*. Creativity in terms of thinking of new solutions, or in this case, new stories, was, however, perceived to be the domain of print books, as this parent explained: *'Printed we can make up extra stories with the pictures. Online stories go the way they are programmed only.'* There were, however, some parents, who offered a more nuanced distinction in terms of the creative potential of print and digital books: *'A print book and, to a lesser extent, a simple e-reader are best for the development of the imagination when reading. I feel the interactive e-reader is just another form of entertainment- one step away from watching television.'*

4.4.5 Personalised engagement

Personalised engagement relates to experiences that are individualised or tailored for each child, such that they are personally meaningful for him/her. This category captured responses that indicated that parents' perceived that one or other medium feels more personal and authentic. Print books were perceived as more: *'personal'*, or *'more intimate'* by parents, who seemed to think that *'print books are more personal and special'* and that they allow for more agency too: *'Yeah you can express your self more with a print book'*.

4.4.6 Interactive engagement

Interactive engagement relates to the child's active involvement in the reading activity, requiring a child's input and contribution. As the label indicates, answers in this category centred on the interactive nature of digital and print book reading. Some parents perceived digital books to be *'more interactive'* or more *"fun"*, while others thought there are more possibilities for interactive engagements with print books: *'printed material is much better to interact'* or *'print books are more engaging'*. Interactivity was perceived as being potentially educational, as encapsulated in this parent's answer: *'Yes, dynamic content of an interactive book is excellent for describing complex theory or ideas and allows the child to steer their own learning helping them to stay engaged'*. One parent's response also reminds us that the interactive content of digital books can in some circumstances compensate for a parent's reading difficulties: *'Some adults can't read.'* Similarly, interactivity in digital books can also support child's independent reading, as one parent highlighted: *'interactive books allow more child's input'*.

4.4.7 Aesthetics

Aesthetics was a category added after finding that 21 parents simply found one reading medium to be more beautiful than the other. For most parents, the aesthetic features centered around the quality of the pictures, notably the superior quality of pictures in print books. The frequent answer was that the difference between digital and print books is that print books have *'much nicer pictures'* or pictures which are *'colourful'* and *'add another dimension'*. However, a few parents also indicated that they would like their children to experience the aesthetics of both kinds of media. For instance, one parent said: *'I want my children to experience reading in all different types of media, to experience the skills, the smells, the visual appearance'*.

4.4.8. Educational potential

Although we asked parents to specifically reflect on the difference between digital and print books in terms of their children's reading for pleasure practices, a substantial percentage of the parents indicated that they perceive the main difference to be the educational potential of one or the other medium.

There was a strong preference for print books to support children's early reading development. For instance, parents indicated that: *'Print books are original and the best first books to read introducing ebooks later on'* or *'I think reading should start with print books as this helps children to read without distraction.* They also indicated that they thought that printed, rather than electronic, text facilitates reading comprehension: *"Better to take story in when printed."* Some parents indicated that whilst it may not apply to all digital books, overall they perceived the use of print books to be more appropriate in supporting the teaching of reading: *"Of course... they all vary in style, but I feel printed books are the most genuine device to teach reading!"*

4.4.9 Health and social risks

Responses in this category emphasised that both digital and print books, *'should be used in developmentally appropriate ways'* and parents were frequently concerned about the health and social risks associated with the use of digital books. Parents thought that print books are *'better'* for children's eyes, that they give their children *'less headaches'* and also are better for their children's healthy sleep. They also pointed out that, unlike print books, digital books require greater care when handling. Some parents also voiced concerns about social risks associated with reading digital books, especially in terms of children's addiction: *'more addiction with interactive books'*. However, parents in this category also pointed out that because of their children's existing health issues, one or the other medium is preferable. For instance, one mother indicated that: *'My child is visually impaired and in future would benefit from e-books etc., as she can make the text bigger'*.

4.4.10 Other opinions

Some parents presented further subjective perspectives on why they think digital and print books differ and we grouped these answers under the category *'other opinions'*. These parents cited unique and idiosyncratic reasons for why they think digital and print books differ. Answers in this category included replies such as: *'The only difference I can think of is that print books are becoming defunct. Children should concentrate only on digital media'*.

Many parents based their preference for print books on their own reading experiences, or the tradition and history of print books. For instance, parents reminisced that: *'its so nice to remind me of the books i (sic) used to read when a child.'* Parents in this category were also quite clear about the definition of a book being based on what they have always been used to : *'A book is a book and should have pages to turn.'*

In addition to the coded categories, we also found that some parents perceive no differences between digital and print books. What matters to them is that the child is engaged with the narrative, as this parent explained: *'Not really. As long as you're (sic) child is enjoying the story, I don't think it matters too much what format it's in.'* Unlike the digital versus non-digital engagement responses, there were a few parents who didn't feel confident in answering this question because they: *'have never read an ebook before'* or because they felt it should be the child who knows the difference best: *'I don't find there to be, but I don't know how children perceive it.'*

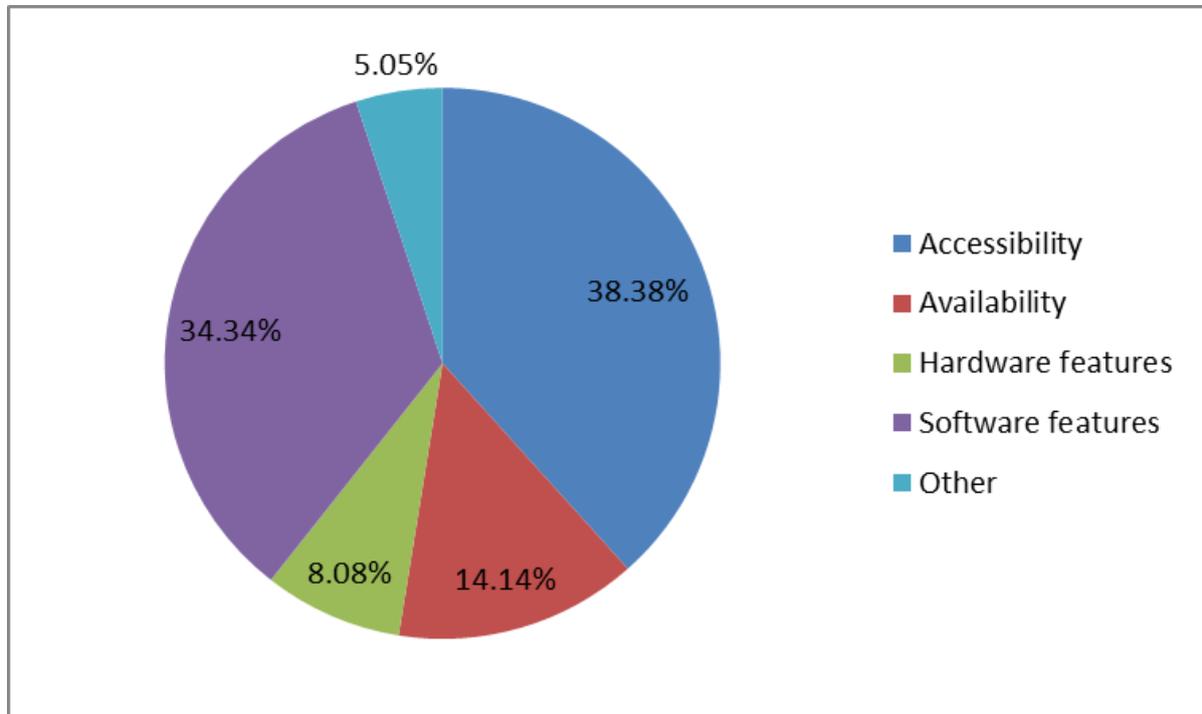
We also found parents using this question as an opportunity to tell us in detail about how they use digital books at home or to voice their opinion about digital books in general. For instance, this parent shared that he thinks that children: *'get more into the future with digital ones. Whereas the printed ones are too much to carry and eventually become an unwanted object. Also, it seems people prefer digital books then carry big printed ones. I guess that's what I think about printed books now for instance. I'd rather have books on my tablet than buy many printed books and pack my space with them. Besides nature thanks us. Children tend to link moving thigs. (sic).. A printed book won't let them touch its page just by pressing the screen'*. Many also recognised that there is a considerable variety in quality and characteristics among digital books: *'a lot of differences on text style and way of description changes in every different type'*.

4.5 Ways to improve interactive books

Although a large percentage of parents perceived significant differences between digital and print books for their child's reading for pleasure, there were only very few parents who had suggestions as to how to improve digital books. In the last open-ended question, we asked the parents whether they could think of ways in which children's interactive books could be improved. We were keen to generate responses that would be of interest to the publishers and designers of these resources for young children. Overall, 99 parents answered this question in full. The responses of these parents fitted four main categories: 1, Accessibility- including reduced cost and advertisements; 2, Availability-including wider range of titles; 3, Hardware features-including improvements to the font, size or weight of digital books and 4, Features of content, including interactivity, aesthetics and more examples of "good story".

The pie chart below summarises these responses.

Figure 7: Percentages of parental responses concerning key categories for ways to improve digital interactive books (N= 99)



5. Conclusion

This survey focused on parental responses in relation to the use of media in the home with 0-8-year old children. Analysis of the survey data indicated that some practices are prevalent in most families, across all age groups (e.g. the use of TV). For some practices, such as the use of digital interactive books for example, parents believe that they should start using these when their child is two years and older.

The reasons for using or not using digital devices with their children are different between US and UK, with US parents, for example, being more concerned about the appropriate content their child is exposed to when using digital media. There are some significant gender differences in relation to the most frequent concerns around use of digital devices, for example the worry that digital media may harm the child's brain is particularly pronounced for parents of boys and the concern about missing out on other important experiences is more prevalent among parents of girls than boys. Further research is needed to assist in interpreting these findings. Also, the concern that their child might be exposed to inappropriate content was a worry especially for parents of eight-year-old children. However, when looking in more depth at the rationale behind these concerns, we find many different reasons, including the concern around health implications, relational and social consequences or child's varied media diet.

As for reading for pleasure with digital and print books, the majority of parents prefer print books for reading together with their children, and print books are also the first type of books parents use with their children as they grow up. Concerns around the nature and use of digital books echo parents' concerns of digital media exposure although many would like to find out more about how these new resources can support their children's learning and reading for pleasure. Parents identified several differences between print and digital books when it comes to reading for pleasure and this survey offers a categorisation of the key themes according to the nature of



child's engagement with print and digital books. This categorisation, along with examples of parents' views and the quantitative expression of their prevalence in the UK population, can serve as a powerful resource for organisations seeking to better understand the diverse reading landscape of 0-8 year-old children in the UK.

Acknowledgments

The authors of the report would like to thank Antonios Kyparissiadis (School of Psychology, University of Nottingham) for his help with the statistical analyses reported here. Special thanks to Michael Levine, Lori Takeuchi and Vicky Rideout for their help and support of the project. We would also like to thank Stephen Hunt and Kelly Walsh from Book Trust for their comments on an earlier version of this report.

This research was supported using public funding by Arts Council England.

References

- Book Trust (2014) Judging criteria for digital books: reading for pleasure. Unpublished internal report.
- Bus, A. G., Takacs, Z. K., & Kegel, C. A. (2014). Affordances and limitations of electronic storybooks for young children's emergent literacy. *Developmental Review*, 35, 79-97.
- Chau, C. L. (2014). Positive Technological Development for Young Children in the Context of Children's Mobile Apps (Doctoral dissertation, Tufts University).
- Childwise Monitor Report (2014) Trends in Media Use by Children. Available from: http://www.saferinternet.org.uk/content/childnet/saferinternetcentre/downloads/Research_Highlights/UKCCIS_RH59_Childwise_Monitor_Report.pdf
- Childwise Monitor Report (2015) Children's media use and purchasing. Available for purchase from: <http://www.childwise.co.uk/reports.html>
- Disney, UK (2012) The Appy Family, report not available online but main findings summarised for example here: <http://www.kidsandmedia.co.uk/the-appy-family/>
- Formby, S. (2014) Parents' perspectives: Children's use of technology in the Early Years, National Literacy Trust report, available online from: http://www.literacytrust.org.uk/assets/0002/1140/Early_years_parent_report.pdf
- Kucirkova, N. (2013). Children's interactions with iPad books: research chapters still to be written. *Frontiers in psychology*, 4.
- Kucirkova, N. & Littleton, K. (in preparation, a)
- Kucirkova, N., Littleton, K. & Cremin, T. (submitted)
- Kuhl, P. K., Tsao, F., & Liu, H. (2003). Foreign-language experience in infancy: Effects of short-term exposure and social interaction on phonetic learning. *Proceedings of the National Academy of Sciences of the United States of America*, 100, 9096–9101.
- Laidlaw, L., & O'Mara, J. (2015). Rethinking Difference in the iWorld: Possibilities, Challenges and 'Unexpected Consequences' of Digital Tools in Literacy Education. *Language and Literacy*, 17(2), 59-74.
- Landis, J. R., & Koch, G. G. (1977). The measurement of observer agreement for categorical data. *Biometrics* 33:159-174.
- Littleton, K., Wood, C., & Chera, P. (2006). Interactions with talking books: phonological awareness affects boys' use of talking books. *Journal of Computer Assisted Learning*, 22(5), 382-390.
- Livingstone, S., & Helsper, E. (2007). Gradations in digital inclusion: children, young people and the digital divide. *New media & society*, 9(4), 671-696.

Marsh, J., Plowman, L., Yamada-Rice, D., Bishop, J.C., Lahmar, J., Scott, F., Davenport, A., Davis, S., French, K., Piras, M., Thornhill, S., Robinson, P. and Winter, P. (2015) Exploring Play and Creativity in Pre-Schoolers' Use of Apps: Final Project Report. Accessed at: www.techandplay.org.

Michael Cohen Group (2014) Young Children, Apps & iPad. Report available online from: http://mcgroup.wpengine.com/wp-content/uploads/2015/03/ipad-study-cover-page-report-mcg-info_new-online.pdf

Montgomery, K. C. (2000). Children's media culture in the new millennium: Mapping the digital landscape. *The Future of Children*, 145-167.

Montgomery, K. (2002). Digital kids: The new on-line children's consumer culture. *Children, young people and media globalization*, 189-208.

Neuendorf, K. A. (2002). *The content analysis guidebook* (Vol. 300). Thousand Oaks, CA: Sage Publications.

Ofcom (2013) Children and Parents: Media Use and Attitudes Report, Available online from: <http://stakeholders.ofcom.org.uk/market-data-research/other/research-publications/childrens/children-parents-oct-2013/>

Ofcom (2014) Children and Parents: Media Use and Attitudes Report, Available online from <http://stakeholders.ofcom.org.uk/market-data-research/other/research-publications/childrens/children-parents-oct-14/>

Parish-Morris, J., Mahajan, N., Hirsh-Pasek, K., Golinkoff, R. M., & Collins, M. F. (2013). Once upon a time: parent-child dialogue and storybook reading in the electronic era. *Mind, Brain, and Education*, 7(3), 200-211.

Peck, T., Scharf, R.J., & DeBoer, M. (2015) Viewing as Little as 1 Hour of Television Daily Is Associated with Higher Weight Status in Kindergarteners: The Early Childhood Longitudinal Study, Paper presented at *Pediatric Academic Societies (PAS)* annual meeting in San Diego, USA.

Radesky, J. S., Schumacher, J., & Zuckerman, B. (2015). Mobile and Interactive Media Use by Young Children: The Good, the Bad, and the Unknown. *Pediatrics*, 135(1), 1-3. doi:10.1542/peds.2014-2251

Reich, S.M. (2015) Educational Affordances of Interactive Technology for Children, paper presented at the *Society for Research in Child Development* 2015 Biennial Meeting March 19-21, Philadelphia, Pennsylvania, U.S.A.

Rideout, V. J. (2013). *Zero to eight: Children's media use in America 2013: A Common Sense Media research study*. Available from: <file:///userdata/documents9/nk3499/Documents/zero-to-eight-2013.pdf>

Rideout, V. (2014) *Learning at Home: Families' Educational Media Use in America*, The Joan Ganz Cooney Centre, Available from [:http://www.joanganzcooneycenter.org/publication/learning-at-home/](http://www.joanganzcooneycenter.org/publication/learning-at-home/)

Robb, M. B., Richert, R. A., & Wartella, E. A. (2009). Just a talking book? Word learning from watching baby videos. *British Journal of Developmental Psychology*, 27, 27–45.

Strasburger, V. C., Hogan, M. J., Mulligan, D. A., Ameenuddin, N., Christakis, D. A., Cross, C., & Swanson, W. S. L. (2013). Children, Adolescents, and the Media. *Pediatrics*, 132(5), 958–961. doi:10.1542/peds.2013-2656

Takacs, Z. K., Swart, E. K., & Bus, A. G. (2015). Benefits and Pitfalls of Multimedia and Interactive Features in Technology-Enhanced Storybooks A Meta-Analysis. *Review of Educational Research*, 0034654314566989.

Vandewater, E. A. (2011). Infant word learning from commercially available video in the US. *Journal of Children and Media*, 5, 248–266.

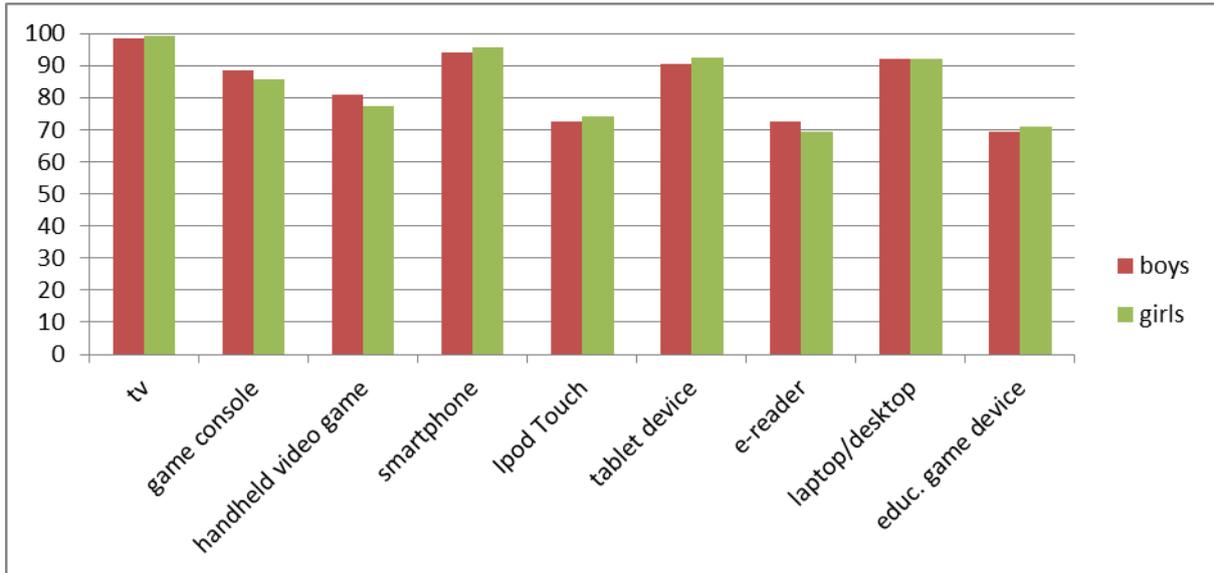
Zhang, Y., & Kudva, S. (2014). E-books versus print books: Readers' choices and preferences across contexts. *Journal of the Association for Information Science and Technology*, 65(8), 1695-1706.

Zhang, M., Trussell, R. P., Tillman, D. A., & An, S. A. (2015). Tracking the Rise of Web Information Needs for Mobile Education and an Emerging Trend of Digital Divide. *Computers in the Schools*, 32(2), 83-104.

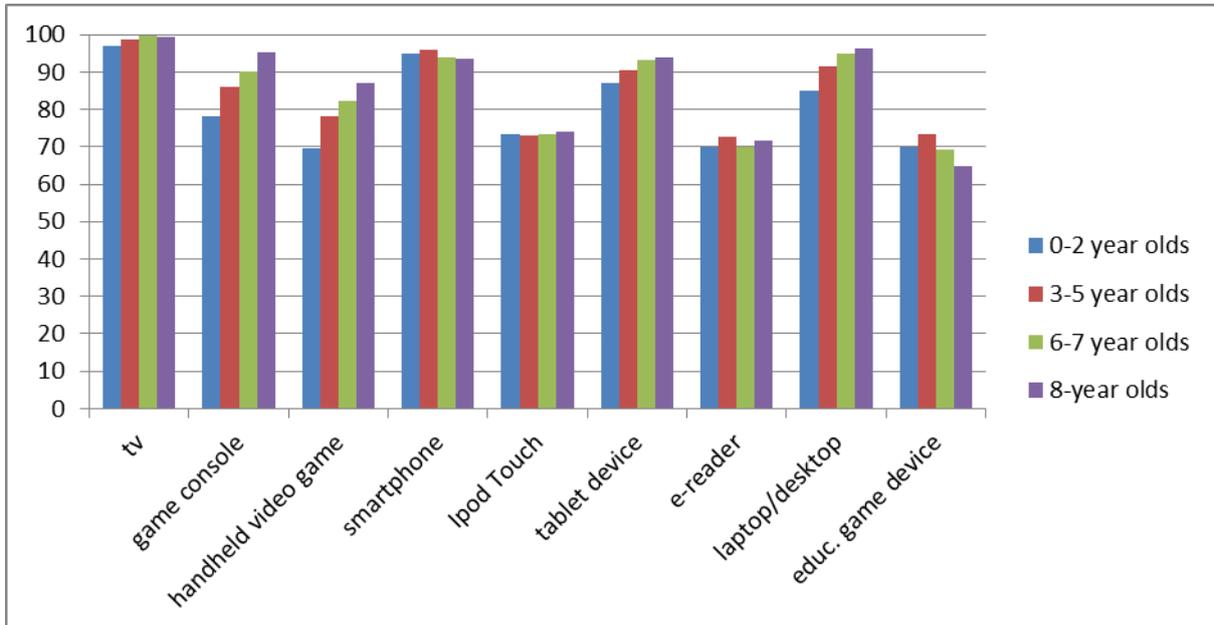
Appendix

The column on the left corresponds to the percentage of parents, legend is provided on the right for each individual graph.

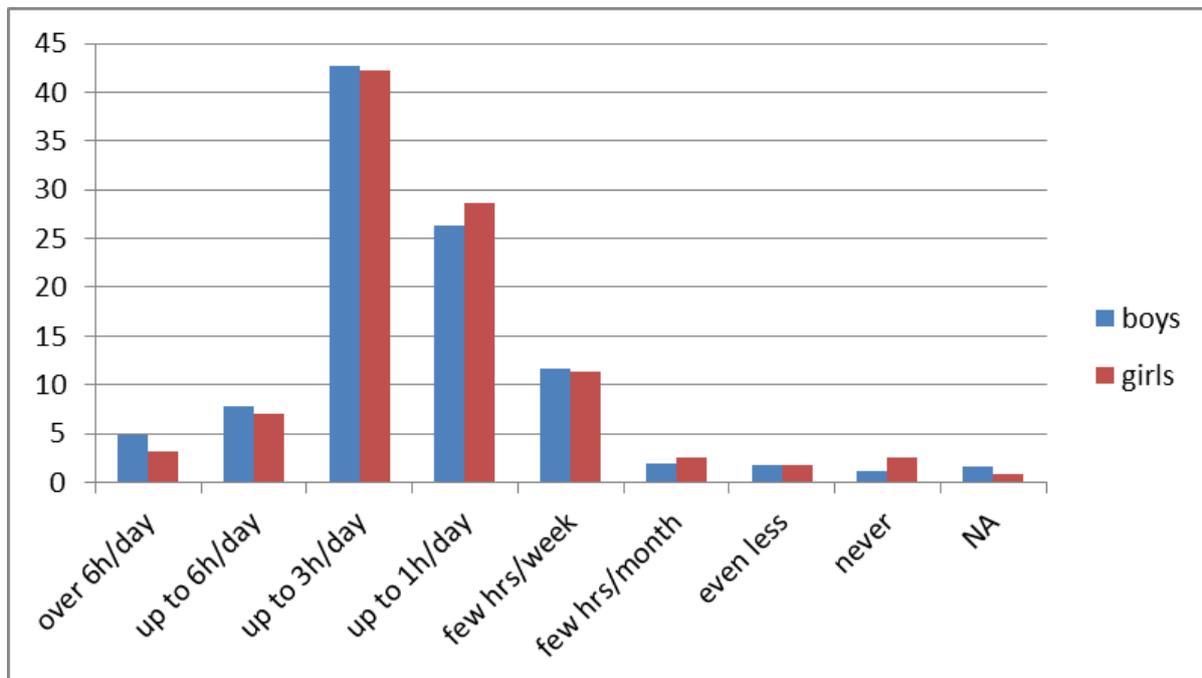
Digital media ownership: by gender (boys and girls)*



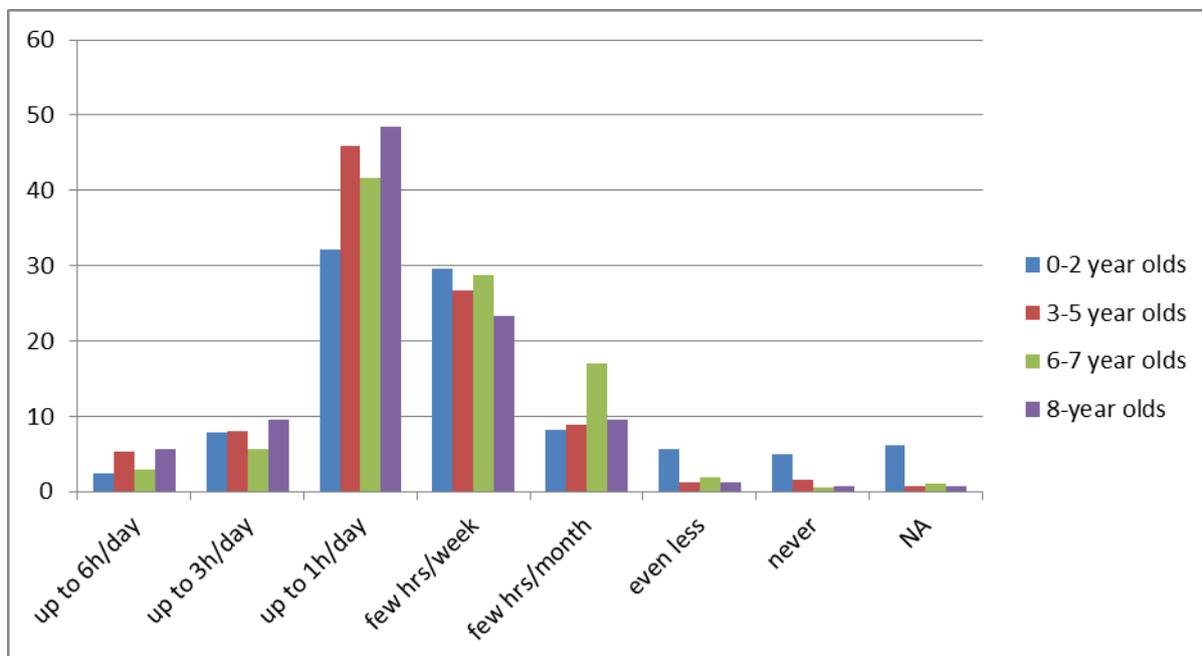
Digital media ownership: per different age groups*



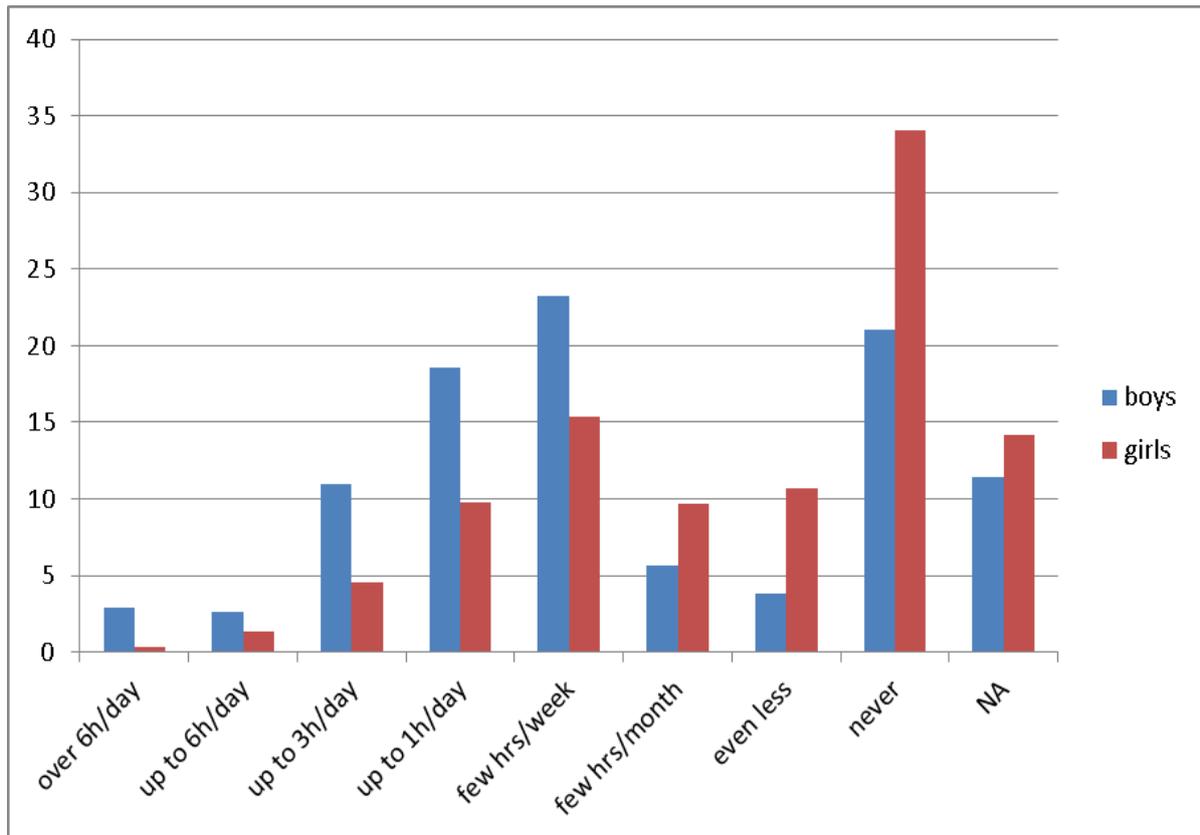
Frequency of TV usage: by gender*



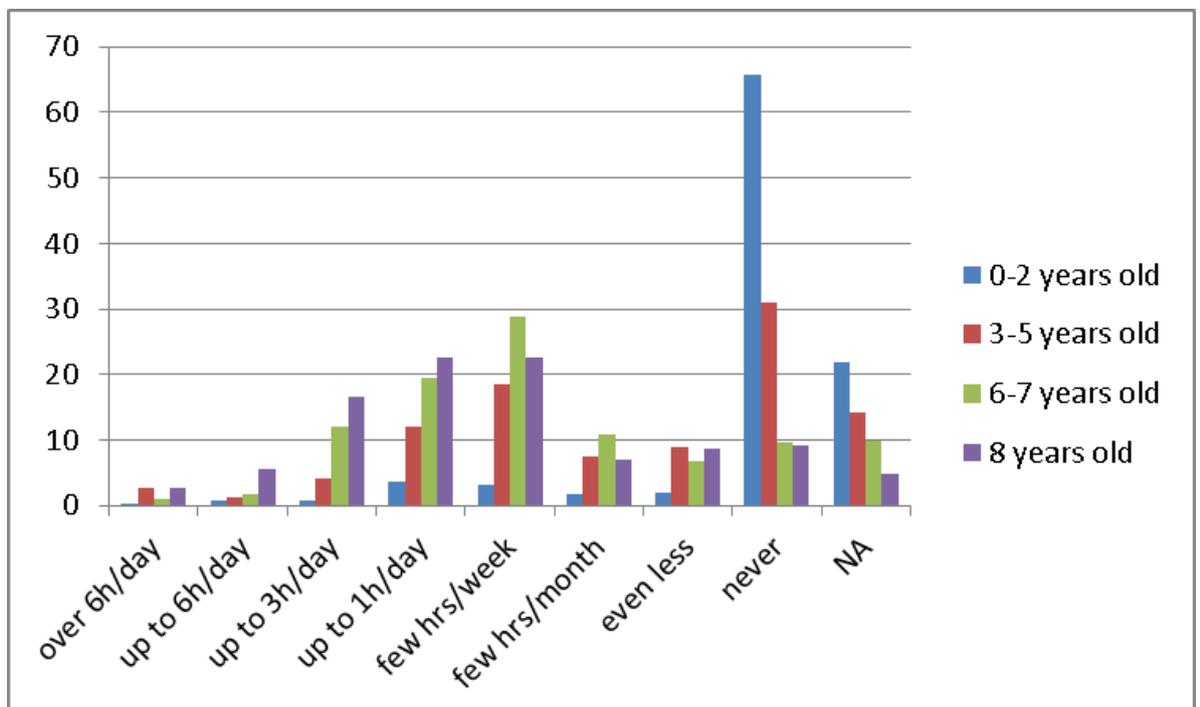
Frequency of TV usage: per age groups*



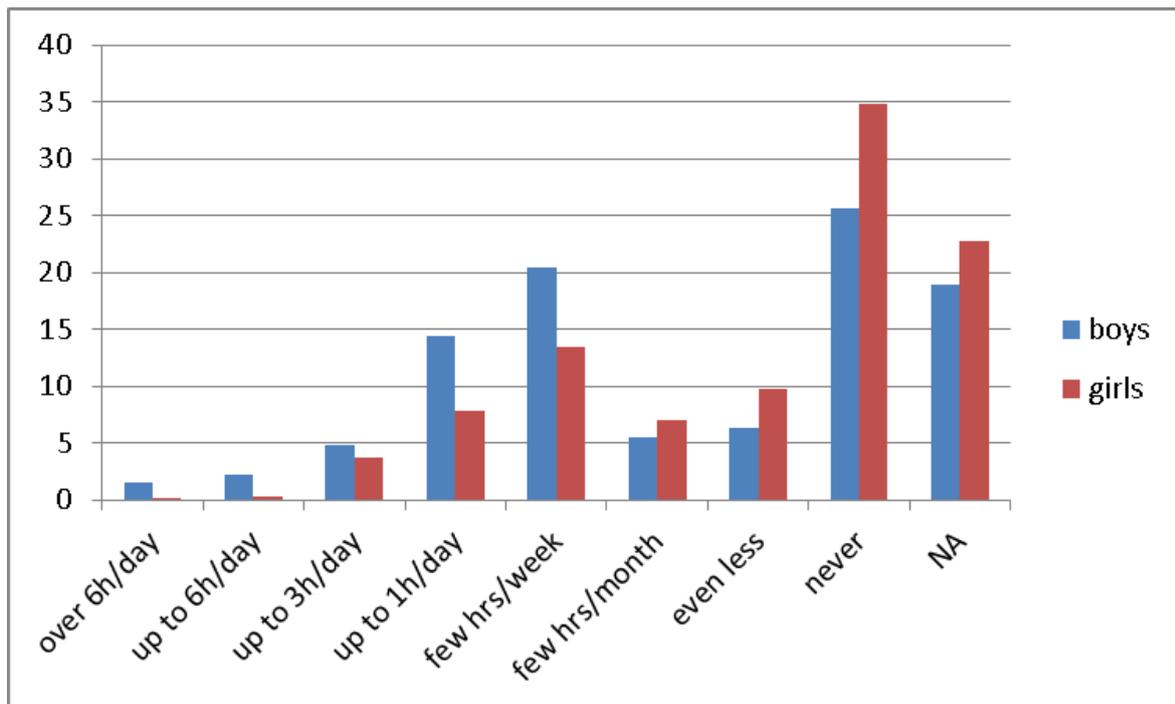
Frequency of game console usage: by gender*



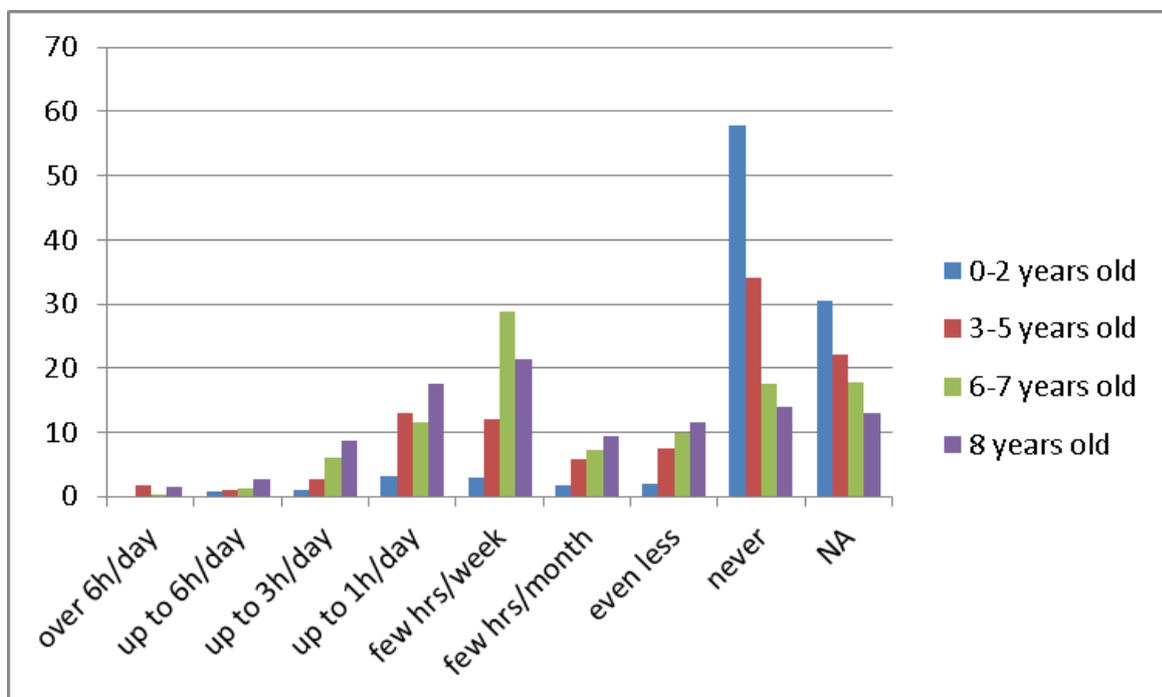
Frequency of game console usage: per age groups*



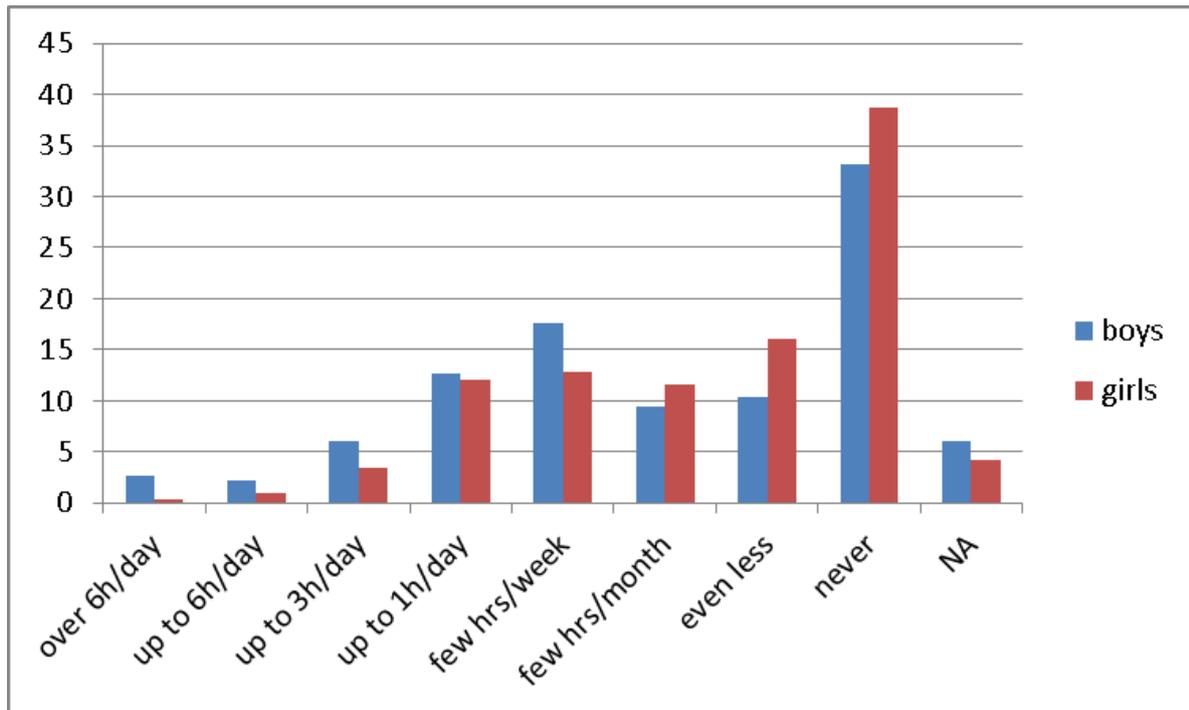
Frequency of handheld video game player usage: by gender*



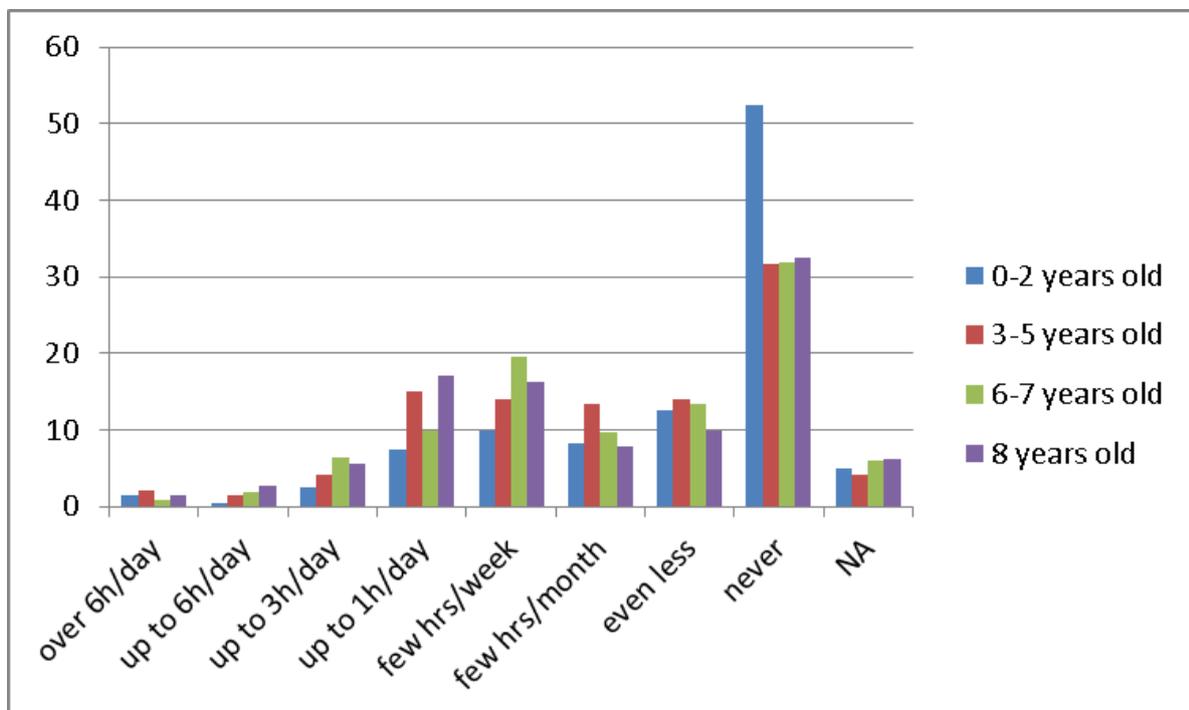
Frequency of handheld video game player usage: per age groups*



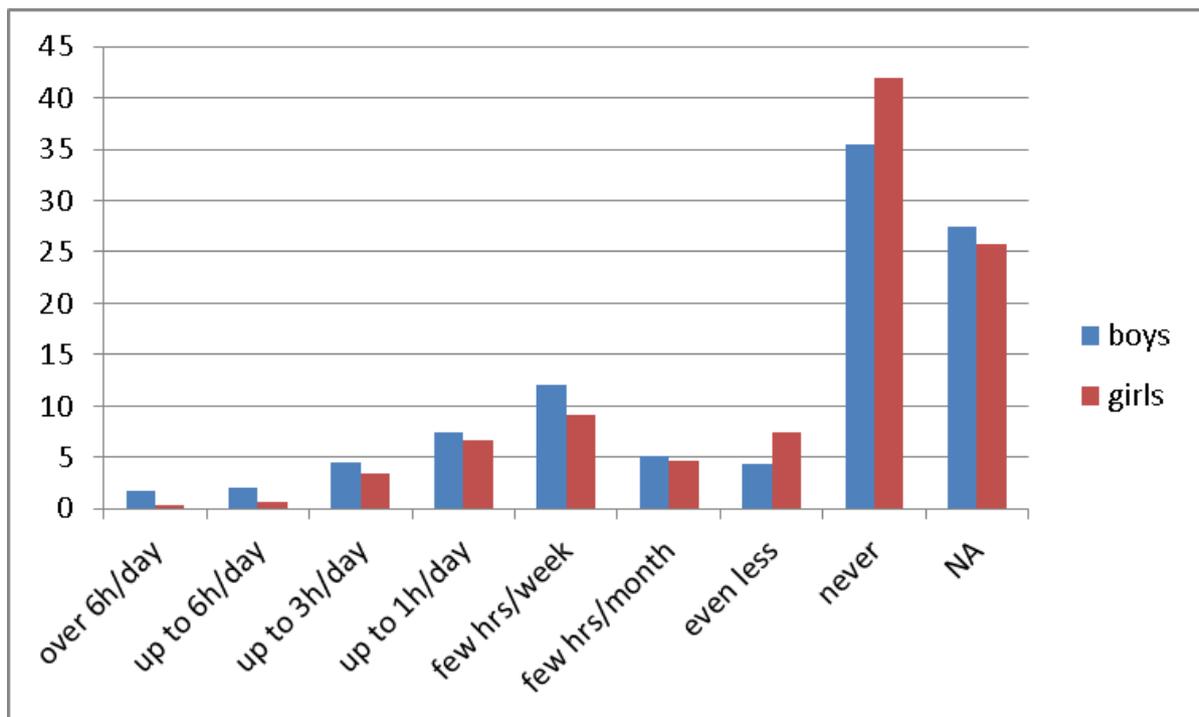
Frequency of smartphone usage: by gender*



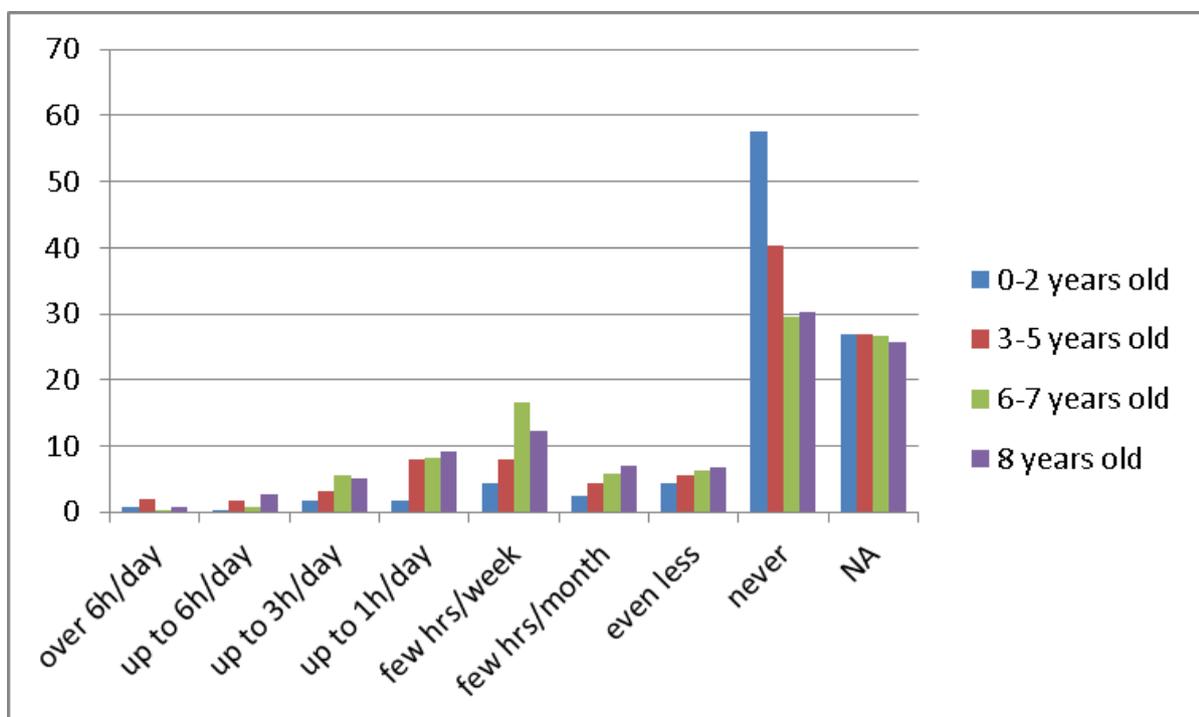
Frequency of smartphone usage: per age groups*



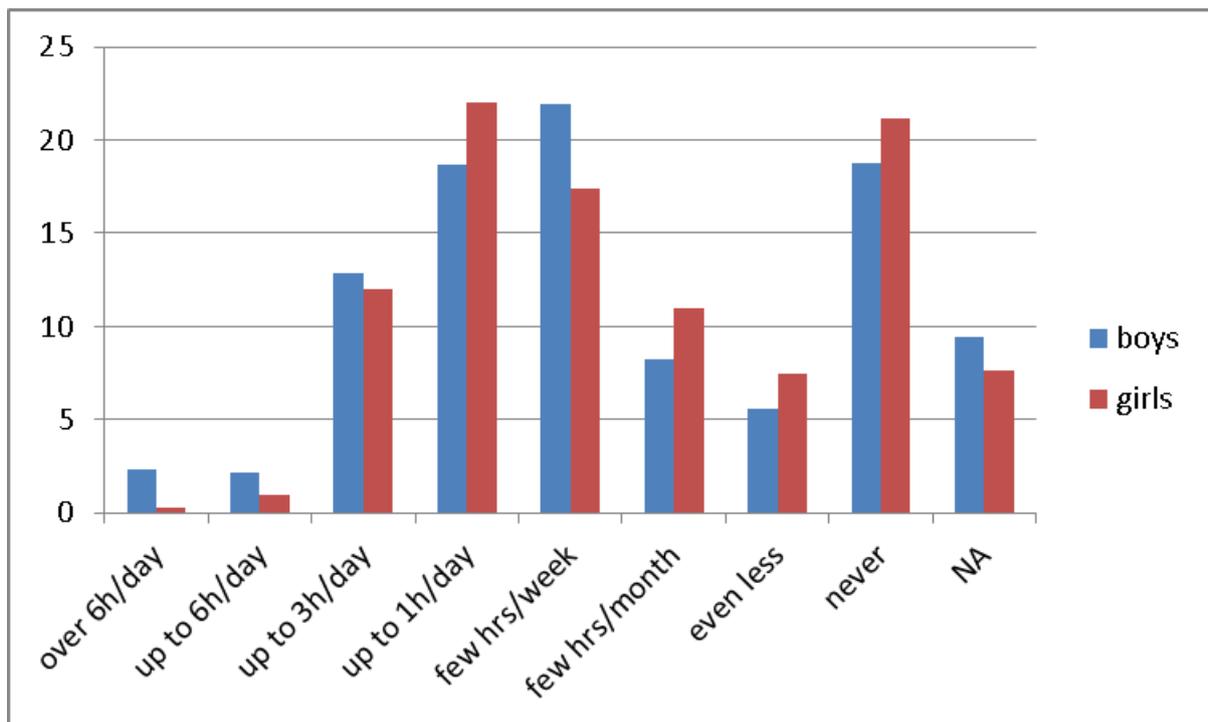
Frequency of i-pod type usage: by gender*



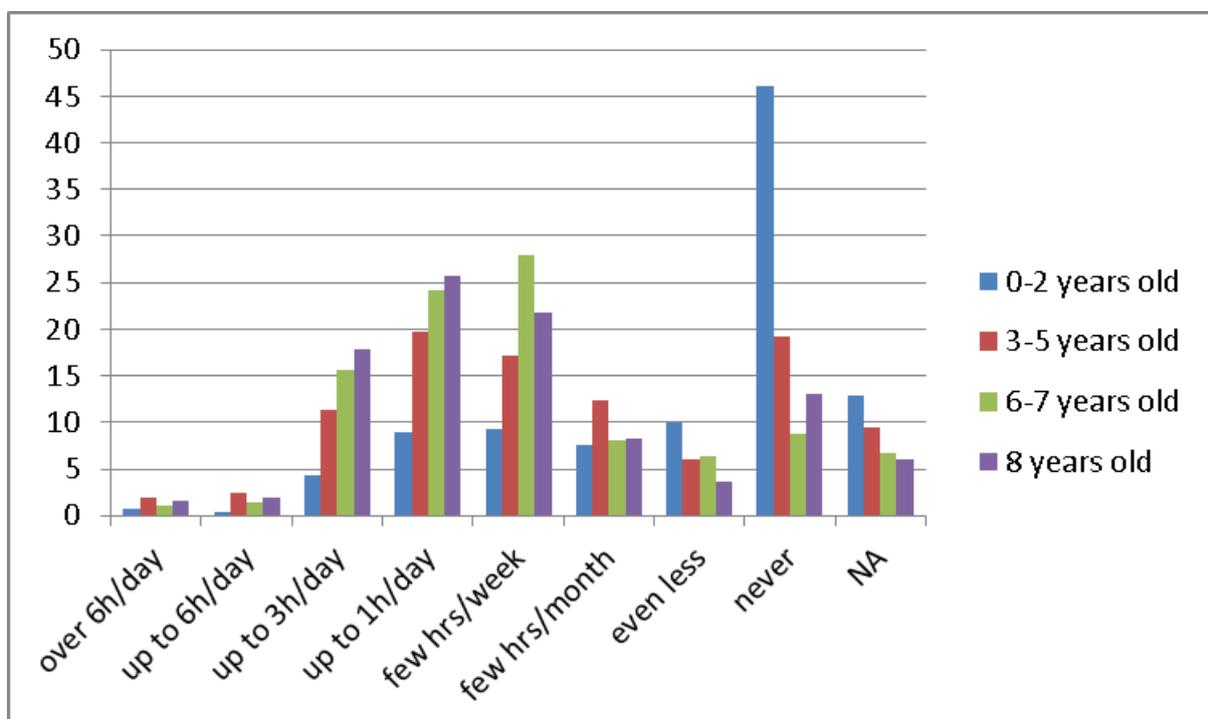
Frequency of i-pod type usage: per age groups*



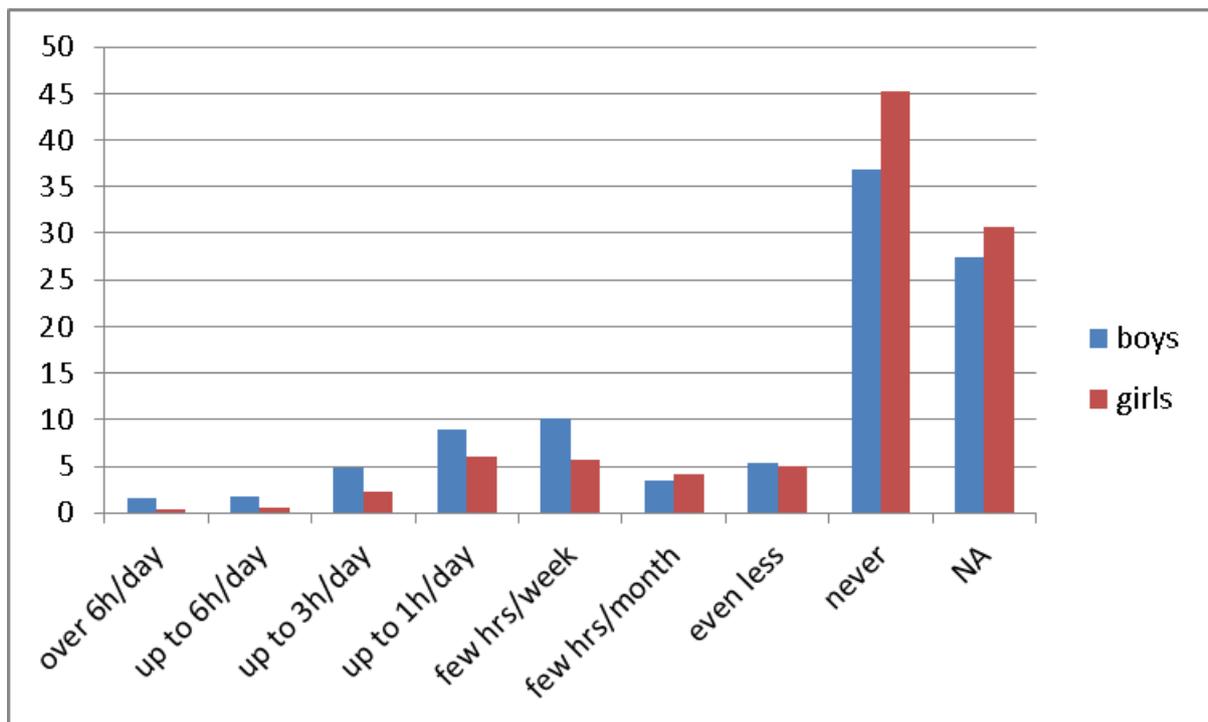
Frequency of tablet usage: by gender*



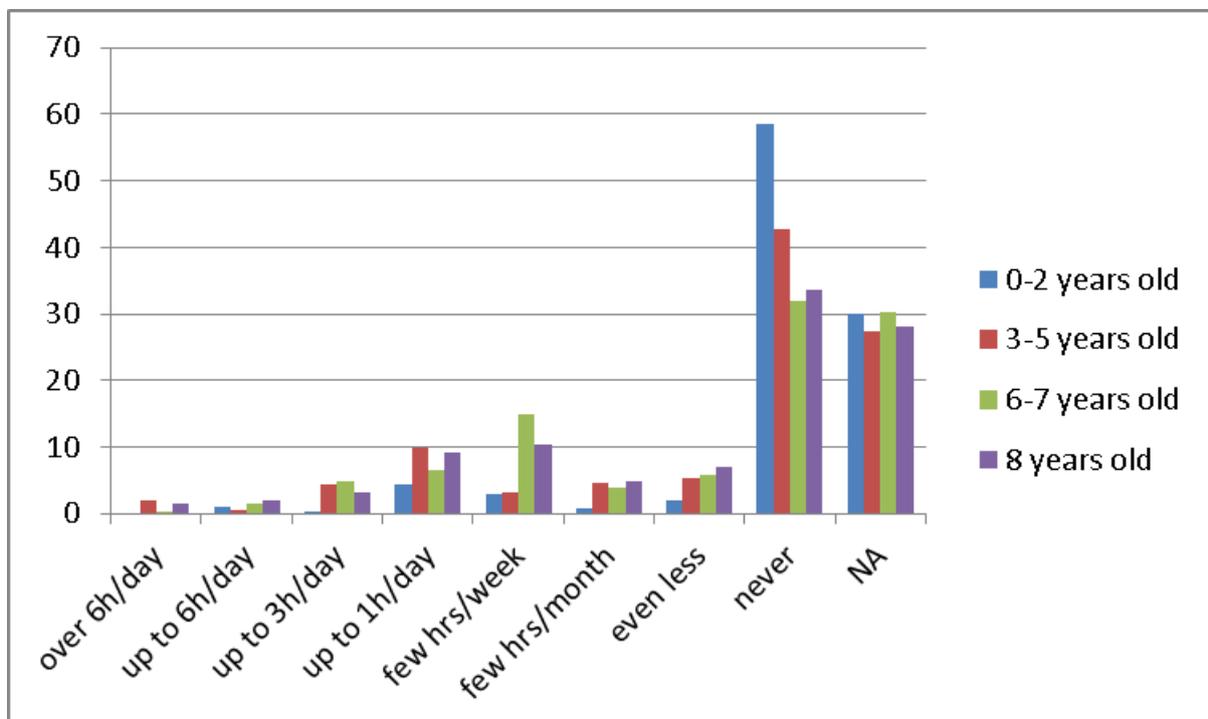
Frequency of tablet usage: per age groups*



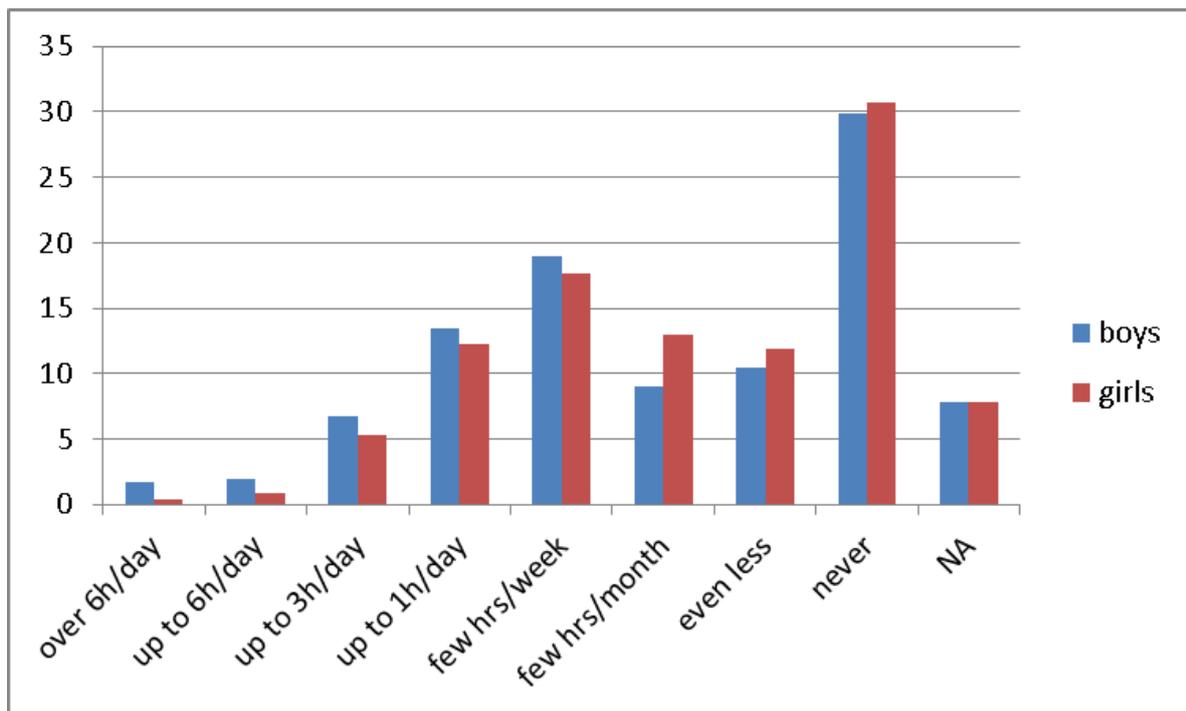
Frequency of basic e-reader usage: by gender*



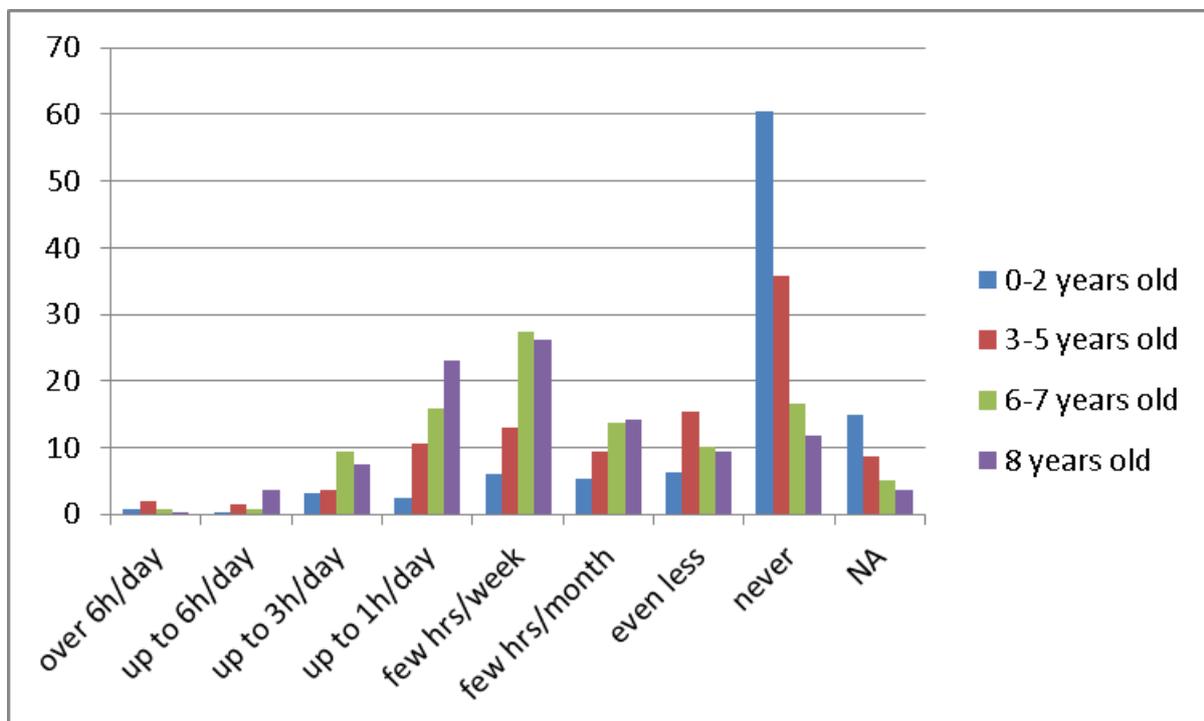
Frequency of basic e-reader usage: per age groups*



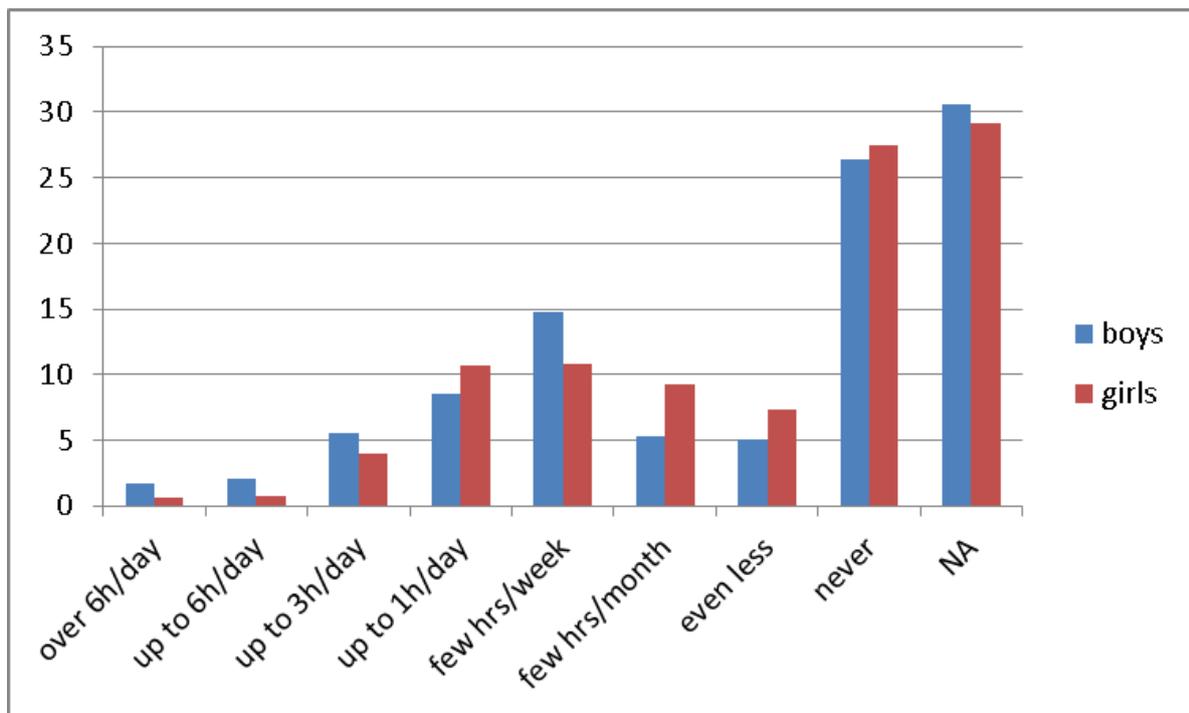
Frequency of laptop/desktop usage: by gender*



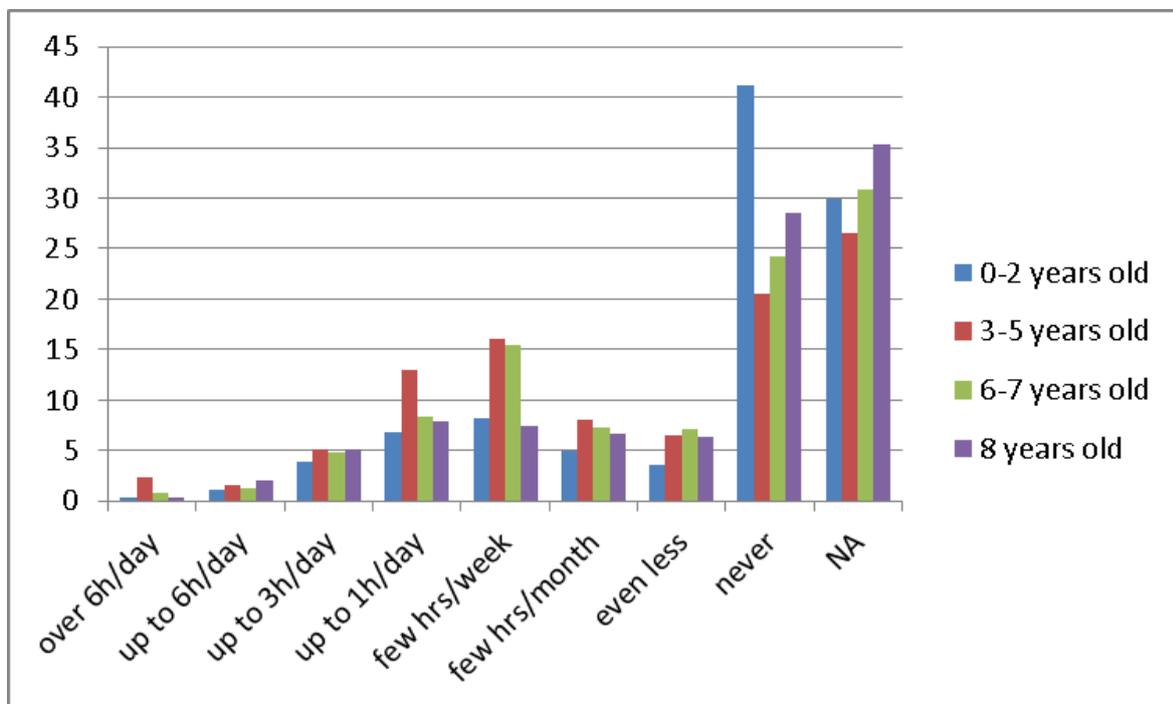
Frequency laptop/desktop usage: per age groups*



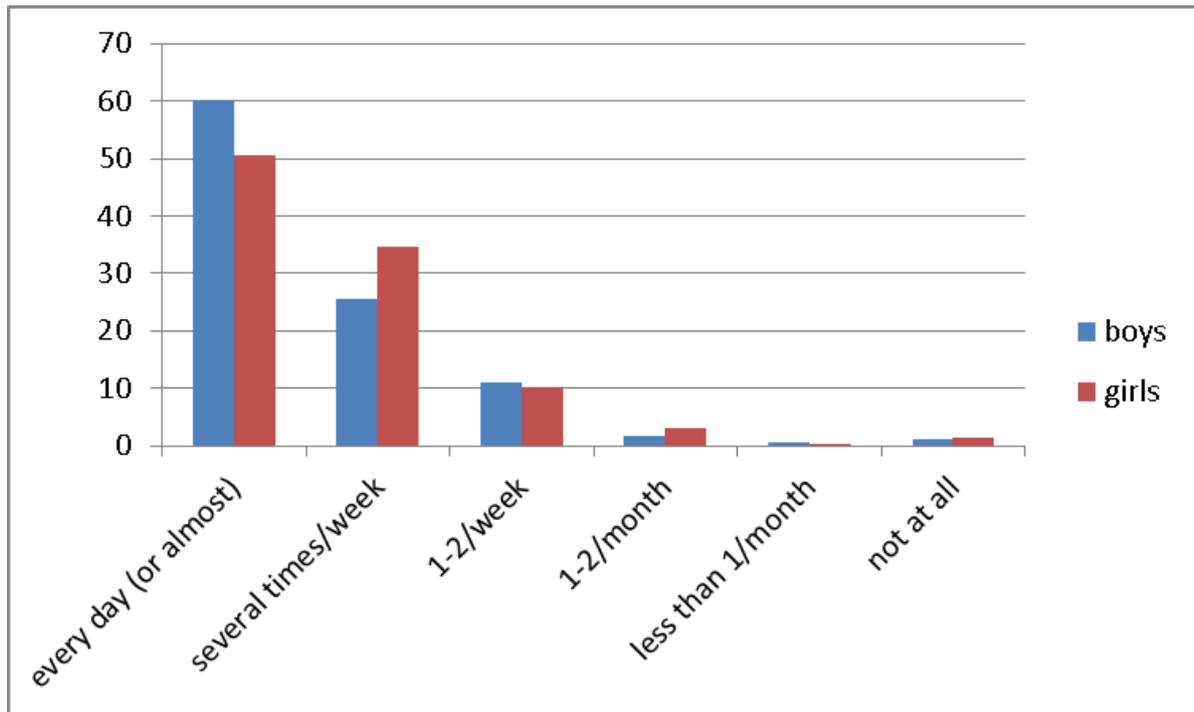
Frequency of educational game device usage: by gender*



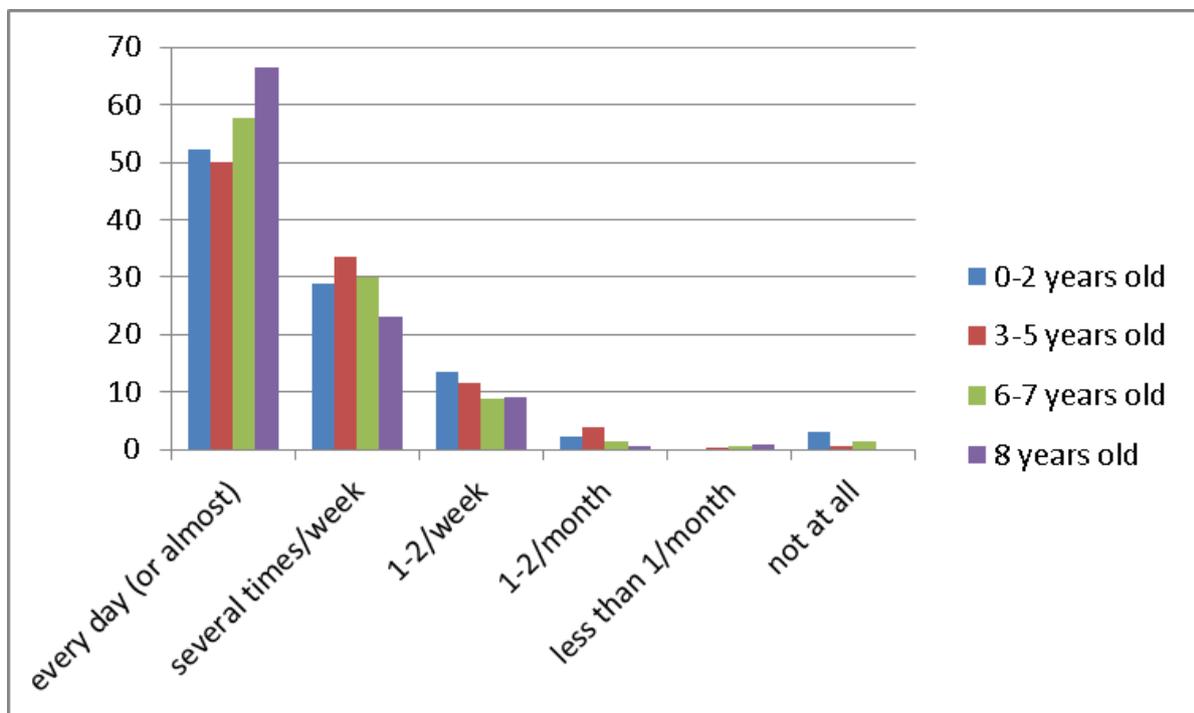
Frequency of educational game device usage: per age groups*



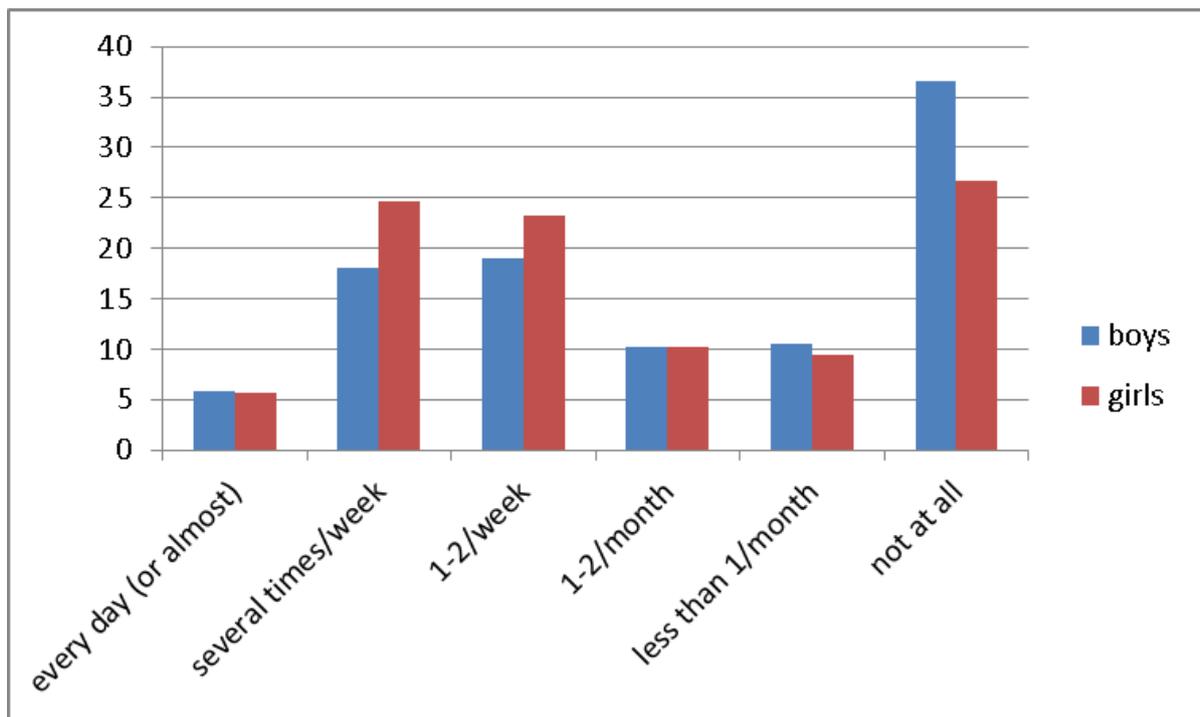
Child's frequency of print book reading with their parent: by gender**



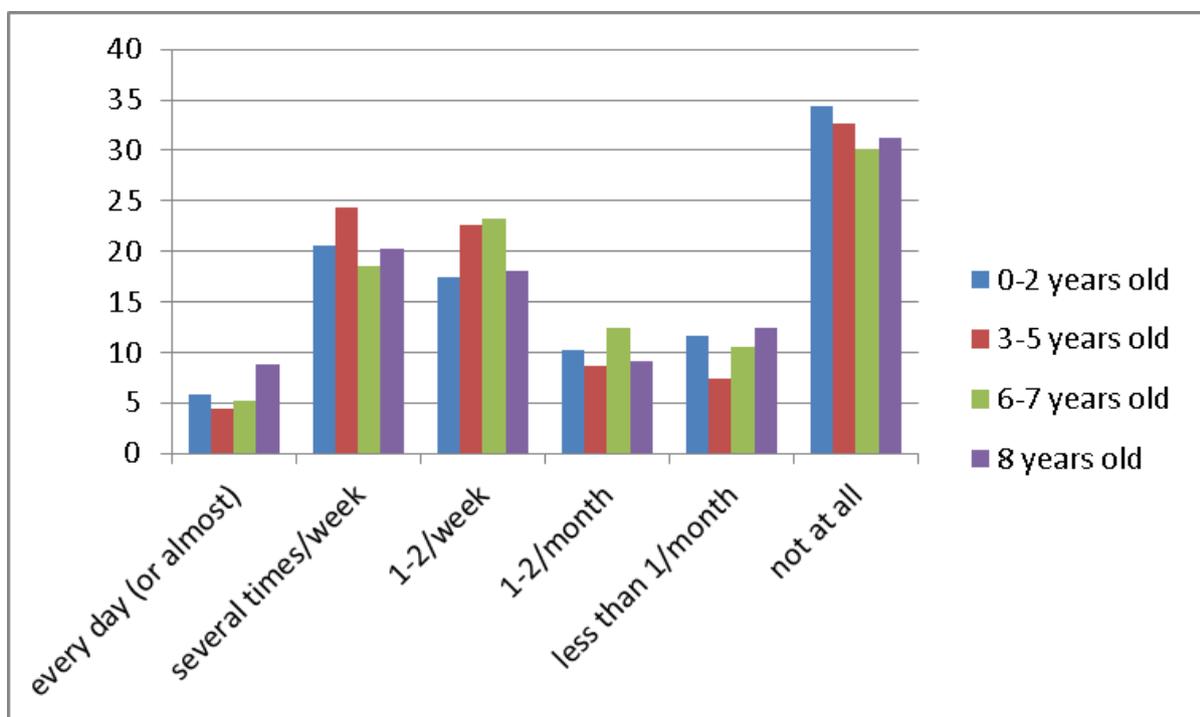
Child's frequency of print book with their parent: per age groups**



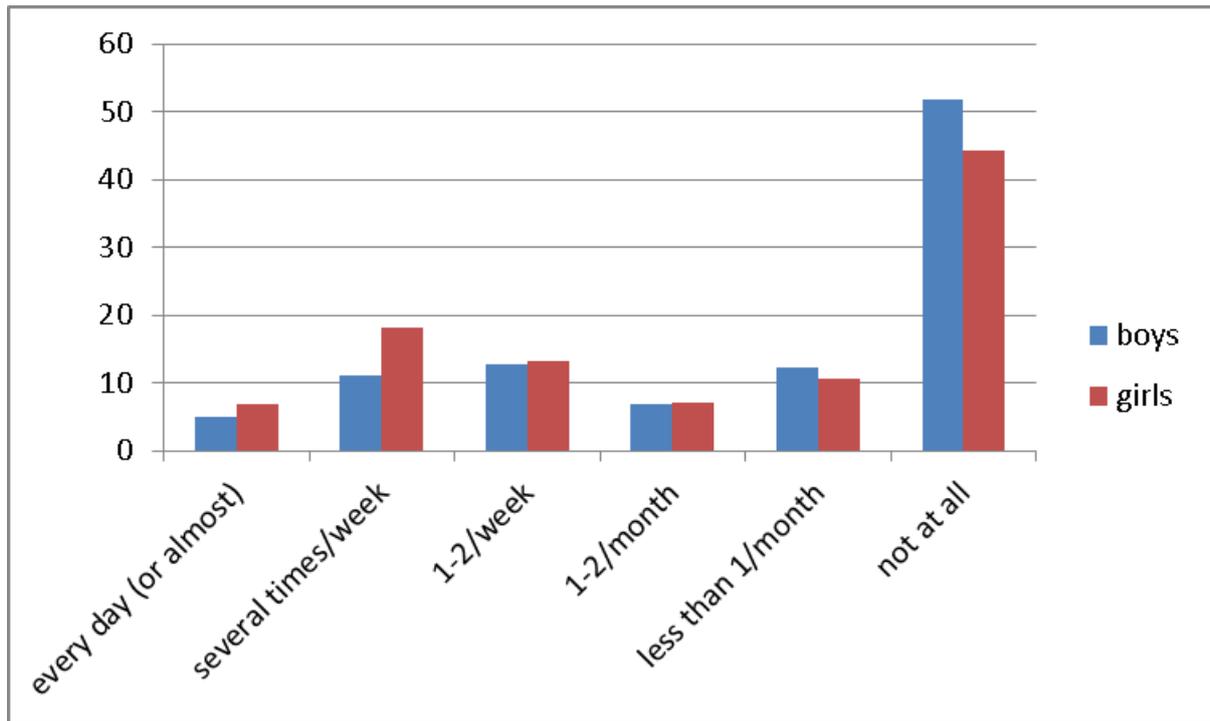
Child's frequency of interactive e-books reading with their parent: by gender**



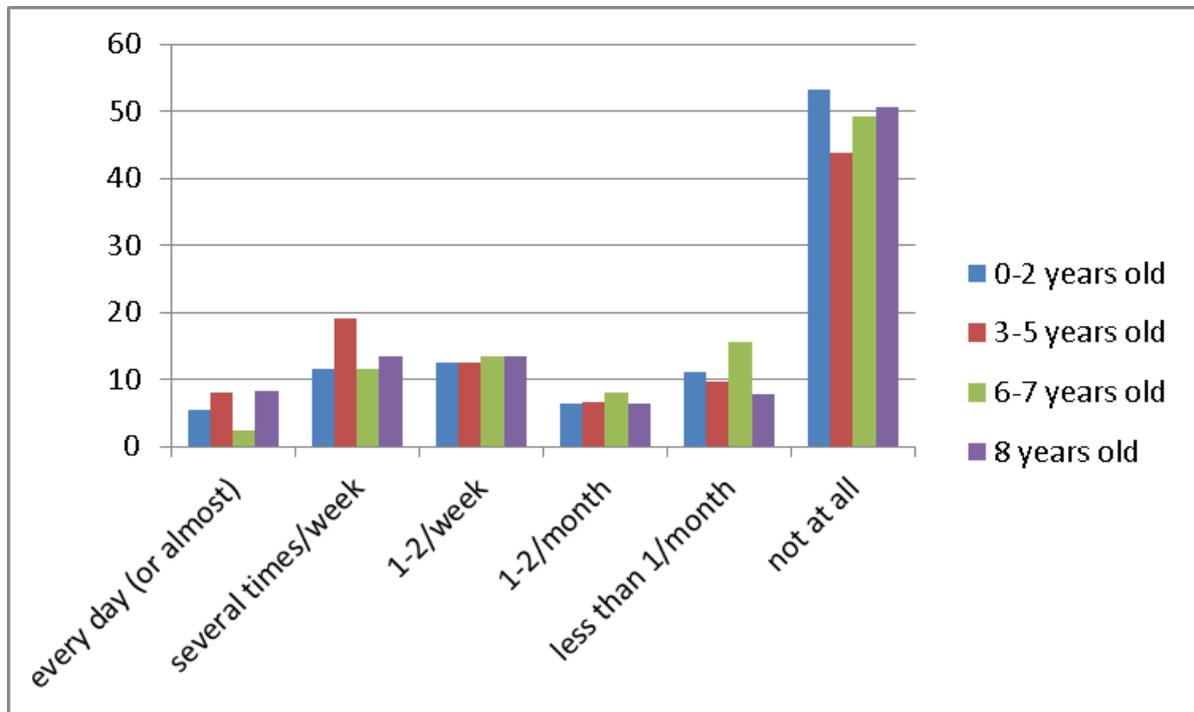
Child's frequency of interactive e-books reading with their parent: per age groups**



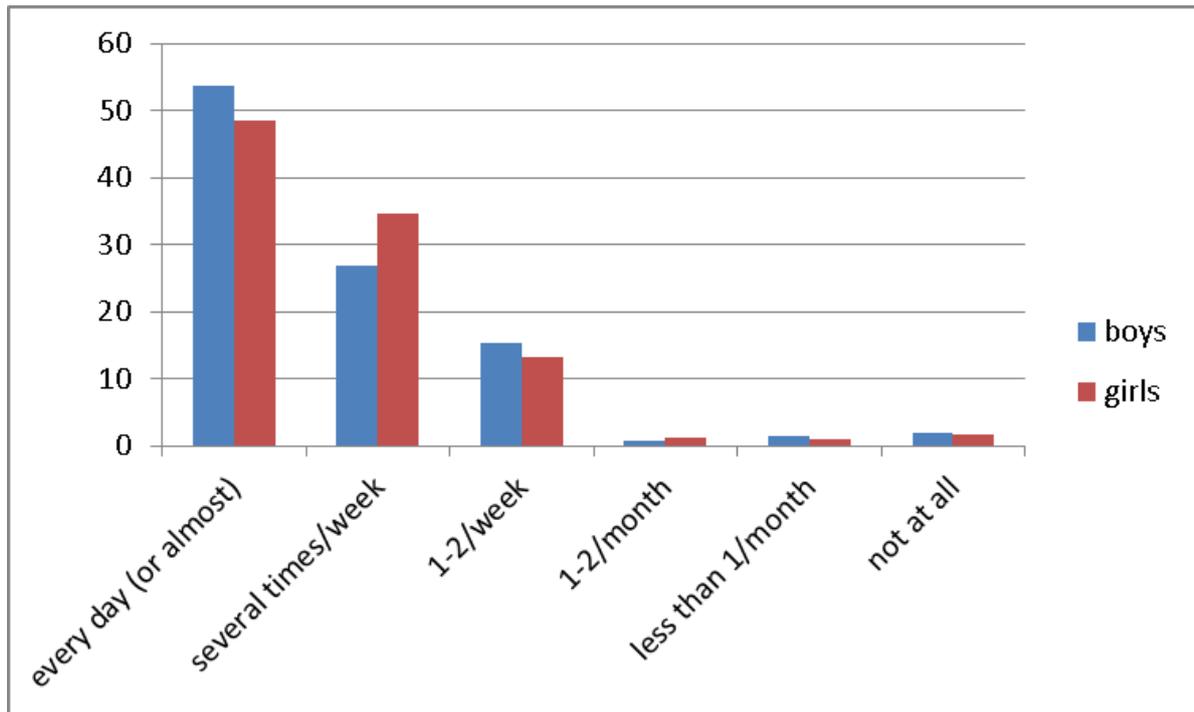
Child's frequency of simple e-books reading with their parent: by gender**



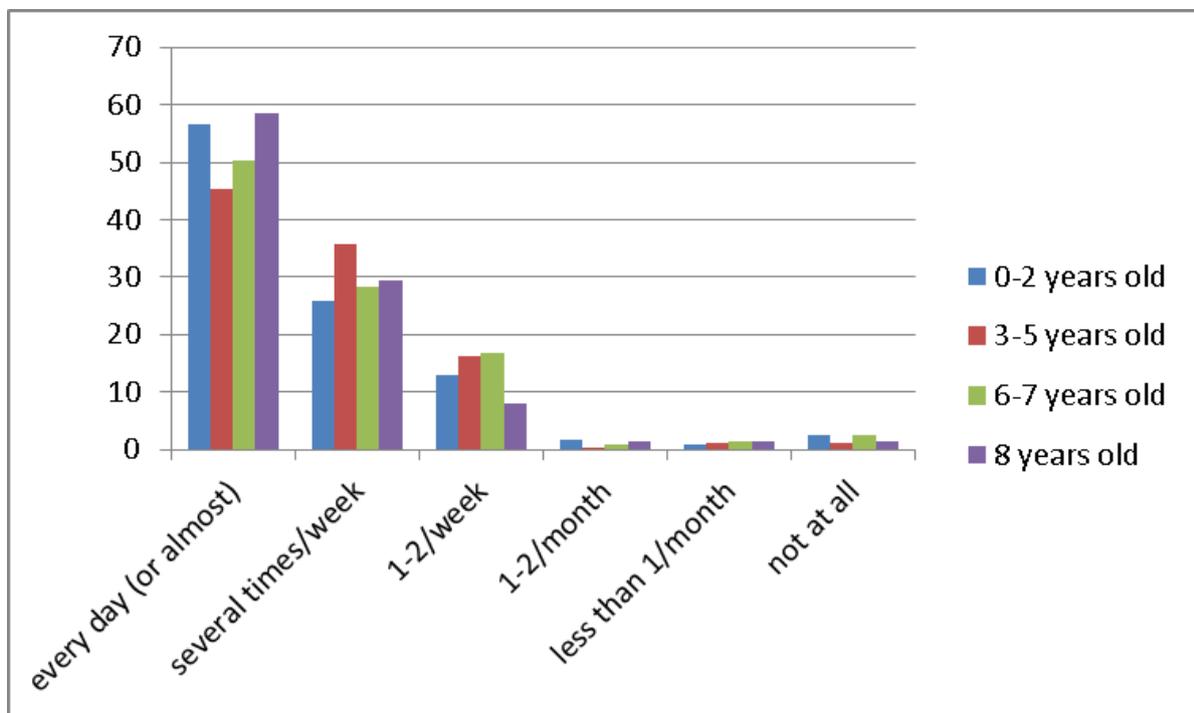
Child's frequency of simple e-books reading with their parent: per age groups**



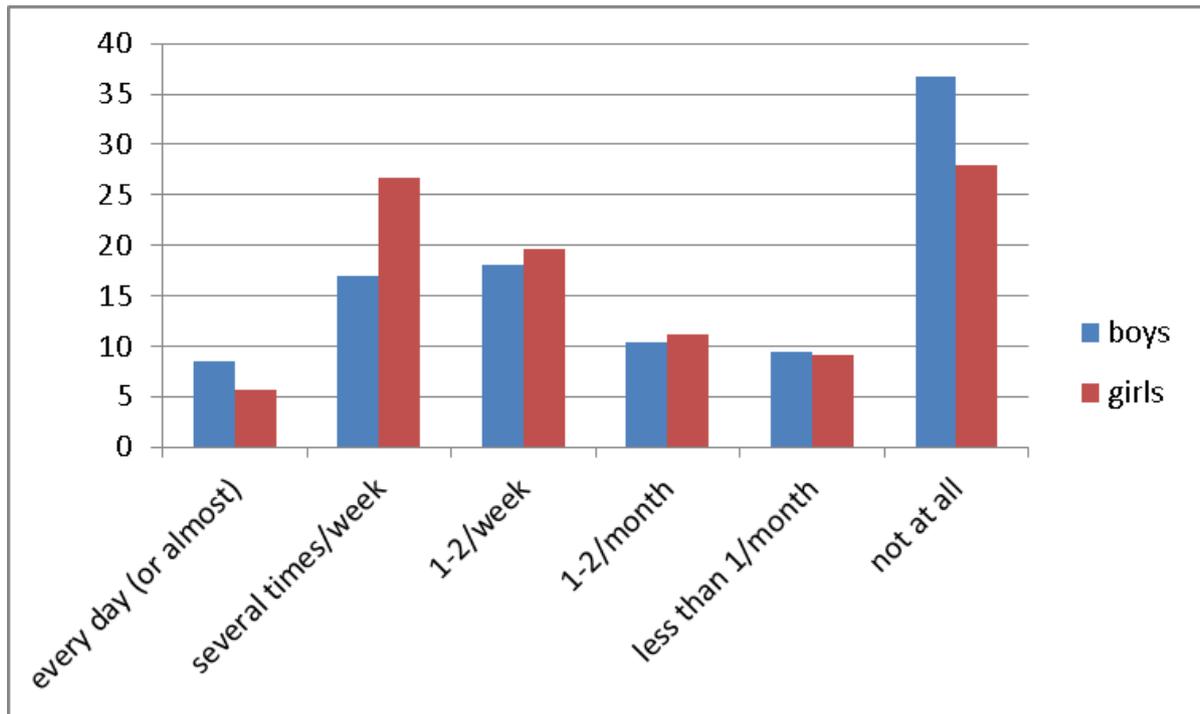
Child's frequency of print book reading on their own: by gender***



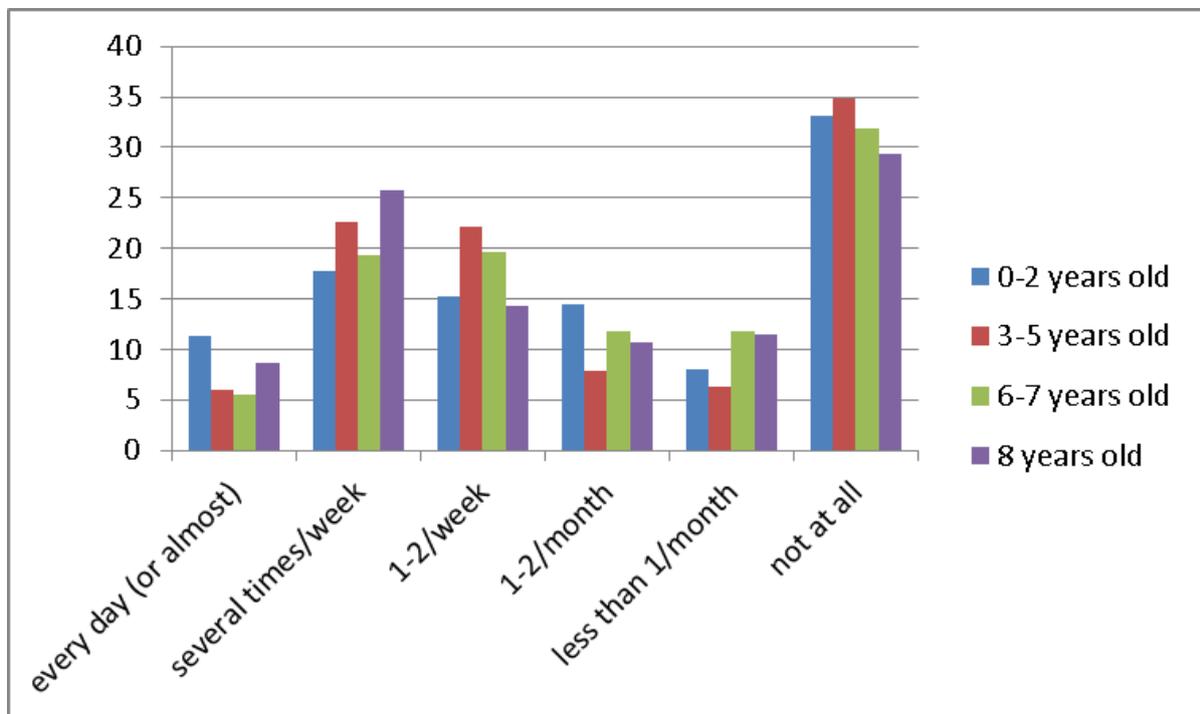
Child's frequency of print book reading on their own: per age groups***



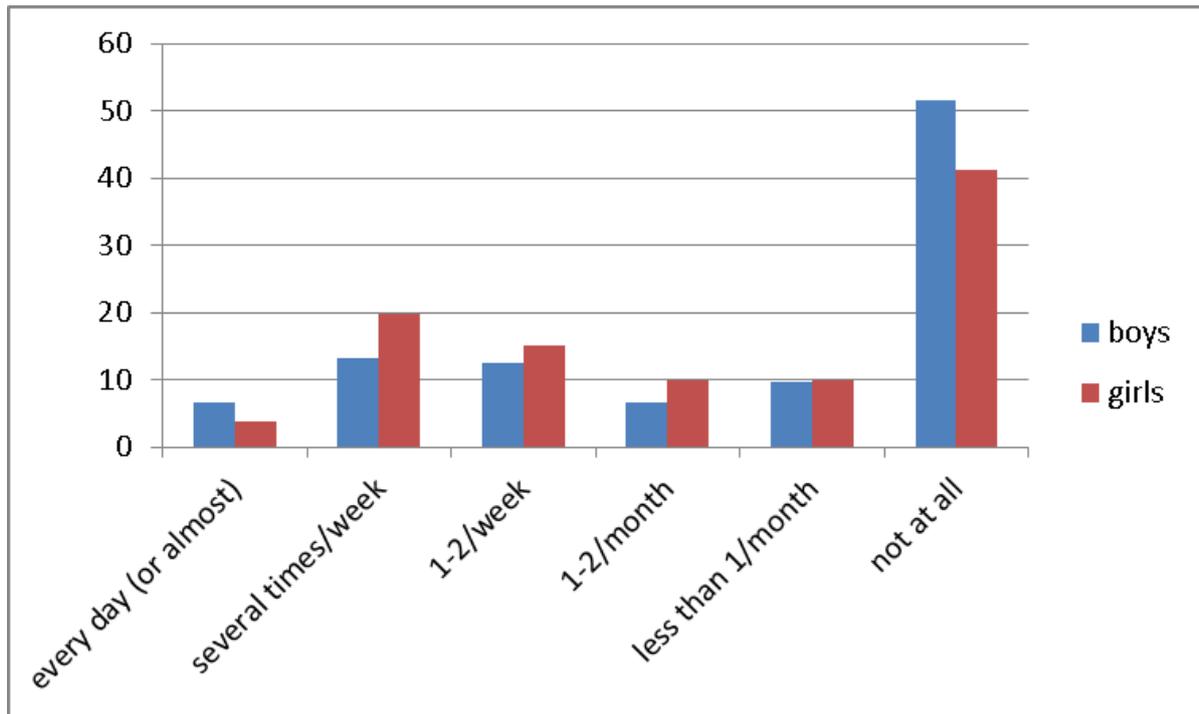
Child's frequency of interactive e-books reading on their own: by gender***



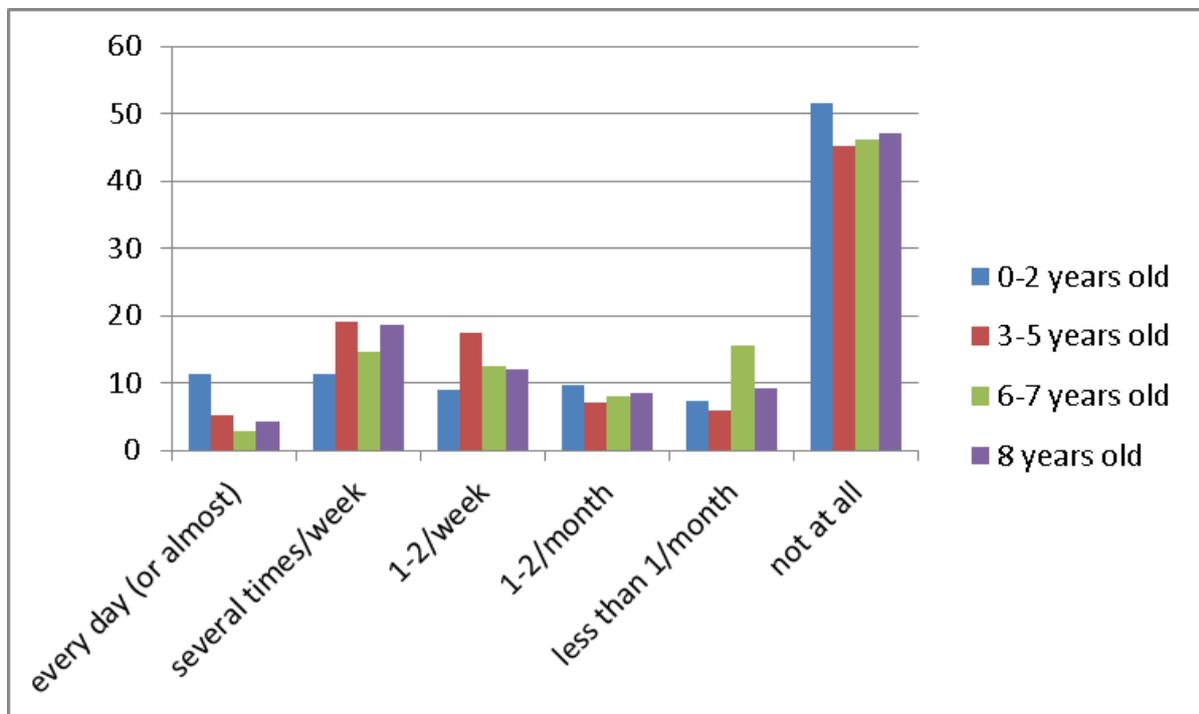
Child's frequency of interactive e-books reading on their own: per age groups***



Child's frequency of simple e-books reading on their own: by gender***



Child's frequency of simple e-books reading on their own: per age groups***



Digital media ownership & frequency of use of digital media*

Number of parents: = 1503; parents of boys = 819 (55%) parents of girls = 683 (45%)

How often do you read the following with your child? **

Number of parents = 1236; parents of boys = 659 (53%); parents of girls = 576 (47%)

How often does your child read the following by themselves? ***

Number of parents = 754; parents of boys = 412 (55%); parents of girls = 341(45%)