



PEARSON

# The Use of Technology to Support Literacy in the Early Years in 2015

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**2016**

*Words for life*

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## Background

This report outlines findings from Pearson and the National Literacy Trust's annual early years surveys of parents and early years practitioners in 2015. Our surveys cover a wide range of questions addressing parental and practitioner attitudes, beliefs and practices around literacy as well as the reported attitudes and behaviours of the children in their care. In this report we focus on those questions pertaining to the use of technology around emergent literacy, especially the use of touchscreen technology.

This report is based on data sets from three sources. The first is our annual Early Years Literacy Survey of parents, conducted online in 2015 through YouGov<sup>1</sup>. 1,000 parents of three to five-year-old children took part in this survey; alongside the current report we have published the full results of the Early Years Literacy Survey for parents, which are available from the National Literacy Trust's website<sup>2</sup>. The second data source is our annual Early Years Practitioner Survey. We surveyed 450 early years practitioners online to find out about their attitudes to literacy and about the literacy behaviours of preschool children in their care. Finally, the third data source is responses from an additional 300 parents who filled in our Early Years Literacy Survey and who also gave us permission to administer a vocabulary test to their child. We therefore have vocabulary attainment scores to link to attitudes and behaviours for those 300 families. Further details about the groups who answered our surveys are given in the relevant sections below.

## Technology in the early years

Technology is increasingly a part of children's educational experiences, at home and in early years settings or school. It is believed that touchscreens may be able to support the early emergence of both reading and writing in new ways on account of the tactile nature and responsiveness of the touchscreen interface<sup>3</sup>. Touchscreens are currently being used in myriad ways to support emergent literacy, with applications (apps) to encourage the development of letter-sound correspondence, phonological awareness and early mark making. Parents and practitioners are also increasingly using digitised ebooks to share stories with children.

While we know that the use of technology to support emergent literacy is rising, as yet there is little research looking at *how* touch screens are being used by parents, practitioners and children in the early years, or on attitudes towards their use. The questions relating to technology in our surveys were therefore designed to help understand how parents and practitioners are responding to the rise in technology, and touch screens in particular, with respect to literacy development. We hope that the responses serve as a jumping-off point for further research as well as being of value in themselves as indicators of the status quo.

In the current report we generally focus on touchscreens rather than more traditional forms of technology such as laptop and desktop computers or TVs. This decision was made for two reasons. The first is that the use of touchscreen technology in the home has risen dramatically in recent years, with family ownership of touchscreens increasing from 7% in 2011 to 71% in 2014<sup>4</sup>, such that it is now necessary to better understand the impact that changes to the home technology landscape are having on children's literacy development. The second reason is that young children are more likely to use touchscreen devices than other devices such as desktop

<sup>1</sup> <https://yougov.co.uk/#/>

<sup>2</sup> [http://www.literacytrust.org.uk/research/nlt\\_research](http://www.literacytrust.org.uk/research/nlt_research)

<sup>3</sup> Neumann, M. M., & Neumann, D. L. (2014). Touchscreen tablets and emergent literacy. *Early Childhood Education Journal*, 42, 231-239.

<sup>4</sup> Ofcom. (2014). *Children and parents: Media use and attitudes report*. Ofcom, London.

and laptop computers, as they are more intuitive for preschool children<sup>5</sup>, easier to use than a mouse and keyboard<sup>6</sup>, and typically smaller and lighter.

For the current research we were interested in comparing reading print-based stories with stories on a touchscreen, so parents and practitioners were asked about printed stories and stories on a touchscreen. We assume here that respondents had in mind on-screen stories or ebooks that resemble print books in some way. Ebooks may be quite simple digitised versions of print books, or they may be enhanced with multiple additional features such as vocalisation, music or interactive features.

It seems clear that technology will be increasingly integrated into learning practices in the home and in early years settings, making it crucial that we determine the best ways to use technology to support current routes to developing literacy, or indeed find whole new ways to learn.

## Research questions

The current report is structured around five key research questions:

- Is touchscreen technology used to support emergent literacy in the home?
- How is technology used to support emergent literacy in the classroom?
- Do parents and practitioners treat print-based and digital reading differently?
- Does the use of touchscreen technology relate to vocabulary development?
- Has the use of touchscreens to access stories changed in recent years?

Throughout this report we present findings that are 'statistically significant'. If a difference or relationship is statistically significant, the likelihood is only 1 in 20 (5%) that it would happen by chance; we can therefore be confident that it is meaningful. Here statistics are given in footnotes. Wherever statistics or figures are presented in the body of the report those parents who skipped the question or responded 'I don't know' (typically less than 1%) have been left out unless otherwise specified, so the percentages given are the percentage of those who were able to answer the question. However, all respondents are included in tables in the appendices.

## Key findings

### Is touchscreen technology used to support emergent literacy in the home?

Touchscreen devices are common in homes but are not frequently used by preschool children to look at or read stories.

- In total, 96.7% of parents report that they have a touchscreen device at home, such as a smart phone or tablet computer.
- Of those who have a touchscreen at home, 37.8% use it to look at or read stories in a typical week and 4.6% do so on a daily basis.
- Children who look at or read stories on a touchscreen typically do so for 5 to 15 minutes on any given occasion.
- The children of younger parents are more likely to use a touchscreen to look at or read stories, with 43.3% of children of parents under 35 years of age, and 33.8% of children of those over 35, using a touchscreen for this purpose.

<sup>5</sup> McManis, L. D., & Gunnewig, S. B. (2012). Finding the education in educational technology with early learners. *Young Children*, 67, 14-24.

<sup>6</sup> Disney, L., Barnes, A., McDowall, J., & Geng, G. (2013). Observation of children's engagement when playing iPads. In L. H. Wong, C. C. Liu, T. Hirashima, P. Sumedi, & M. Lukman (Eds.), *Proceedings of the 21st International Conference on Computers in Education* (pp. 616-621). Indonesia: Asia-Pacific Society for Computers in Education.

**How is technology used to support emergent literacy in the classroom?** Touchscreen technology is being integrated into the home literacy environment more rapidly than in early years settings.

- In early years settings 58.2% of practitioners report that children have access to touch screens, but only 26.9% report that children use them to look at or read stories.
- Practitioners report less confidence and less enjoyment sharing stories on a touchscreen with the children in their care compared with printed stories. For example, 92.2% of practitioners report that they enjoy sharing printed stories with the children in their setting a lot compared with 52.0% who report this same level of enjoyment when sharing stories on a touchscreen.
- Practitioners identify barriers to the use of technology in early years settings including practical limitations such as screen size.
- Practitioners identify boys and children with special educational needs as particularly benefiting from technology in early years settings.

**Do parents and practitioners treat print-based and digital reading differently?** Currently attitudes and behaviours reported by both parents and early years practitioners are strongly affected by medium.

- For those children who use a touchscreen to look at or read stories, 12.0% do so on a daily basis compared with 60.9% of this group who look at or read printed stories daily.
- Parents support their children more actively when sharing printed stories compared with stories on a touchscreen.
- Parents report equal levels of confidence when sharing stories with their child on a touch screen or in print, while practitioners report significantly higher levels of confidence when sharing stories in print.
- Although children from disadvantaged backgrounds read printed stories less frequently than their more advantaged peers, they look at or read stories on a touchscreen more frequently.

**Does the use of touchscreen technology relate to vocabulary development?** In our sample, attitudes and behaviours around looking at or reading stories on touchscreens were not related to vocabulary development.

- Vocabulary development was related to the frequency of reading printed stories but not stories on a touchscreen.

**Has the use of touchscreens to access stories changed in recent years?** To some extent both attitudes and behaviours around using touchscreens for emergent literacy have changed between 2014 and 2015, but only tentative conclusions can be drawn at this time.

- 97.0% of parents reported having a touchscreen in the home in 2015, compared with 91.9% in 2014.
- How much children are reported to enjoy looking at or reading stories on a touchscreen has increased from 2014 to 2015, with 20.8% more parents reporting that their child enjoys this 'a lot'.
- Parents reported more confidence sharing stories on a touchscreen with their child in 2015 compared with 2014, with 74.0% of parents being 'very confident' in 2015 compared with 63.7% in 2014; for practitioners this figure did not change from 2014 to 2015.

## Is touchscreen technology used to support emergent literacy in the home?

The number of preschool children using technology in the home has soared in recent years, with 73% of under-fives using a tablet or computer in 2015, compared with 23% in 2012; indeed a quarter of under-fives now own their own tablet or computer<sup>7</sup>. Children are known to use technology in the home for a variety of tasks and activities, with preschool children being most likely to use digital devices to play a game or to watch or listen to something, for example a video on YouTube.

What we are interested in in this section is whether young children use touch-screen technology to look at or read stories at home. This will then allow us to ask if certain groups of children are more likely to use screens, what effect screen time has on language and literacy development, and how we can support children to get the most out of the touchscreen technology available to them.

We answered this research question with data from the 1,000 parents of three to five-year-olds who answered our Early Years Literacy Survey through YouGov. This sample was fairly representative of the UK population of preschool parents with respect to age (37.1 years on average), gender (52.1% female), average number of children in the family (2.1) and ethnicity (92.2% white). Respondents held a range of educational qualifications, with the most typical highest qualification being an undergraduate degree (27.7%); 69.3% of respondents came from relatively advantaged households<sup>8</sup>.

### Few children frequently read or look at stories on a touchscreen at home

We asked parents whether they have a touchscreen, such as a smart phone or tablet computer, in the home. A total of 96.7% of parents reported that they did; however, only 37.8% of those who had a touchscreen said that their child uses it to look at or read stories in a typical week. Of those children who use a touchscreen to look at or read stories, 12.9% do so on a daily basis. To put that in context, of the children who read printed stories at home, 65.7% read daily according to this year's survey.

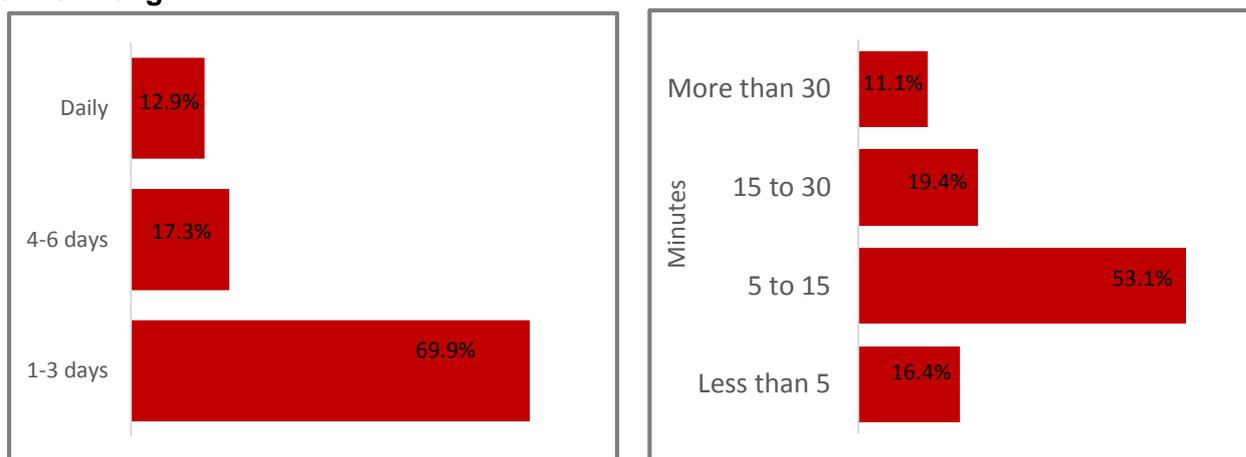
We also asked parents how long their child spends looking at or reading stories on a touchscreen during any given session. We found that the majority of children (53.1%) typically read on a touchscreen for 5 to 15 minutes each time. **Figure 1** overleaf illustrates how many times a week children access stories on touchscreens, and how long they do so during any given session. How often children read on a touchscreen and how long they read for in any given session were related to each other<sup>9</sup>, with children who access stories on a touchscreen more frequently doing so for longer on any given occasion.

<sup>7</sup> ChildWise. (2015). *The monitor preschool report: Key behaviour patterns among 0-4 year olds*. ChildWise, Norwich.

<sup>8</sup> 69.1% AB or C1 and 30.7% from C2 or DE households. Social stratification for the parent survey was carried out by YouGov.

<sup>9</sup> Correlation between number of days children read in a typical week with length of average reading session:  $r(334) = 0.377$ ,  $p < 0.001$ , controlling for child age does not change the significance of this result.

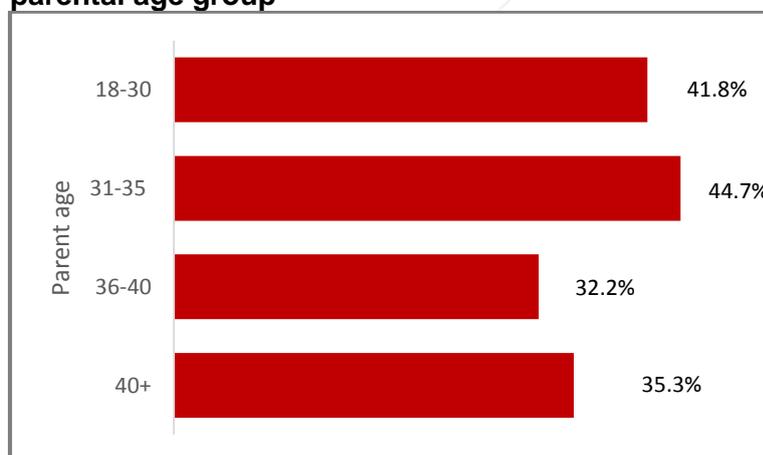
**Figure 1: How many times a week children access stories on a touchscreen at home and for how long<sup>10</sup>**



**The children of younger parents are more likely to read stories on a touchscreen**

Given that almost all parents reported owning a touchscreen, we wanted to know what was most predictive of the use of touchscreens to look at or read stories. We looked at parents' responses about their own age, the age of their child, the gender of their child, their own highest level of education, their ethnicity and whether or not they came from a disadvantaged household. Only parental age was related to whether their child accessed stories on a touchscreen, with the children of younger parents being more likely to use a touchscreen to look at or read stories<sup>11</sup>. **Figure 2** shows the percentage of children with parents of different ages who use touchscreens.

**Figure 2: Percentage of children who use touchscreens to look at or read stories by parental age group<sup>12</sup>**



Younger parents in this sample were more likely to be from disadvantaged backgrounds<sup>13</sup> and an association between disadvantage and touchscreen use could potentially be masked by parental age. We therefore checked to see whether children from disadvantaged backgrounds were generally more likely than their more advantaged peers to look at or read stories on a

<sup>10</sup> For number of days touchscreen stories are read in a typical week n= 342, for typical duration n= 341.

<sup>11</sup> Together the predictors reliably distinguished between children who do and do not access text via touch screen:  $\chi^2 = 28.728$ ,  $p = 0.011$ ,  $df = 14$ ; Nagelkerke's  $R = 0.041$ ; Prediction success was 62.6%; only the continuous variable 'parent age' contributed significant predictive power according to the Wald criterion ( $p = 0.002$ ).

<sup>12</sup> 40+ years n= 91, 36-40 years n= 92, 31-35 years n= 122, 18-30 years n= 61.

<sup>13</sup> Correlation between age and social stratification group:  $r_s(1,000) = -0.177$ ,  $p < 0.001$

touchscreen. We found that these groups were equally likely to access digital stories<sup>14</sup>, with 39.4% of advantaged children using their parents' touchscreen to look at or read stories in a typical week compared with 34.3% of disadvantaged children (see Appendix 1, Table 1 for frequency of access).

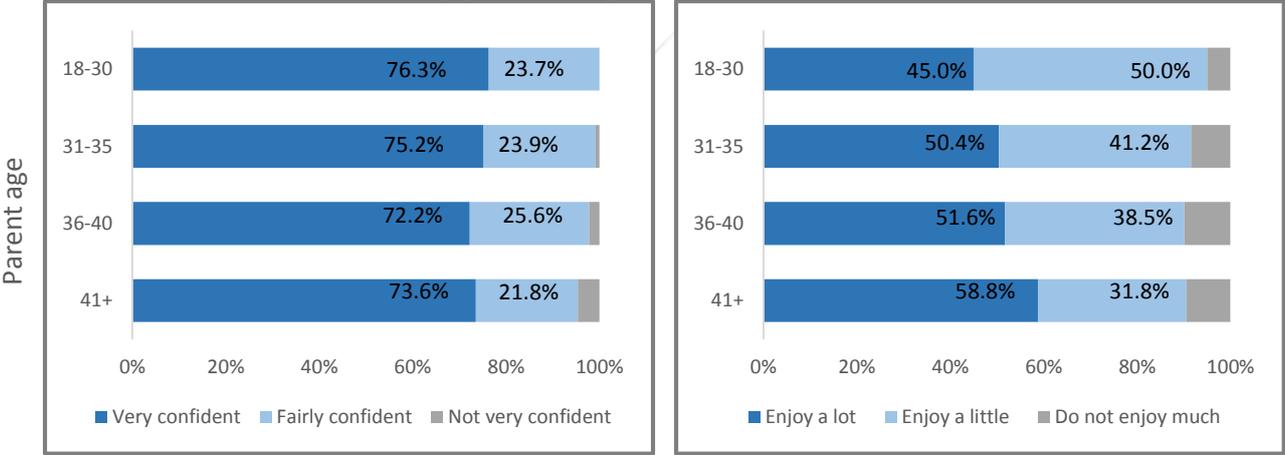
**Parents are confident when sharing stories with their child on a touchscreen**

The finding that the children of younger parents are more likely to use a touchscreen to look at or read stories emerged despite the fact that parents in general reported a high degree of confidence when sharing on-screen stories with their children. Of those who use touchscreens to share stories with their child, 98.0% are very confident (74.2%) or fairly confident (23.8%), with only 1.9% reporting that they are not very confident. No parents reported that they are not at all confident. The reported level of confidence sharing stories on a touchscreen was high regardless of parental age<sup>15</sup> (see Appendix 1, Table 3).

Parental enjoyment around sharing stories on a touchscreen is not as high as reported confidence. Of those parents who share stories on a touchscreen, 51.8% enjoy sharing stories on a touchscreen with their child a lot, 39.7% a little, 8.5% do not enjoy it much, while none do not enjoy it at all. As with confidence, parental age does not make a difference as to how much parents enjoy sharing stories on a touchscreen with their child<sup>16</sup> (see Appendix 1, Table 5).

**Figure 3** compares parental enjoyment and confidence for each parental age band, to illustrate that confidence and enjoyment do not vary much by parental age; although note that there is a non-significant trend for parental enjoyment to increase with age.

**Figure 3: Parental enjoyment and confidence when sharing stories with their child on a touchscreen broken down by parents' age<sup>17</sup>**



**There are multiple barriers to sharing stories on a touchscreen at home**

The majority (63.4%) of parents who responded to our survey reported that their child does not use a touchscreen to look at or read stories, despite almost every household owning one. We gave parents an open text opportunity to explain why their child does not access stories in this way. In total 570 parents responded; Figure 4 shows the six categories that parents' answers could be roughly divided into, with each being illustrated with a representative quote.

The vast majority of parents said that either they or their child prefers printed books to stories on a touchscreen, with 321 parents giving an answer that could be categorised in this way; for example: *“Books are wonderful. You can touch and interact with them. We do enough*

<sup>14</sup> Comparing the percentage of children from AB or C1 households who access stories on a touchscreen with the percentage from C2 or DE households: p= 0.085.  
<sup>15</sup> Association between parent age group and reported confidence: Chi<sup>2</sup> = 5.307, p = 0.505, df = 6.  
<sup>16</sup> Chi<sup>2</sup> = 5.601, p = 0.469, df = 6  
<sup>17</sup> For parental enjoyment n= 355, for parental confidence n= 353.

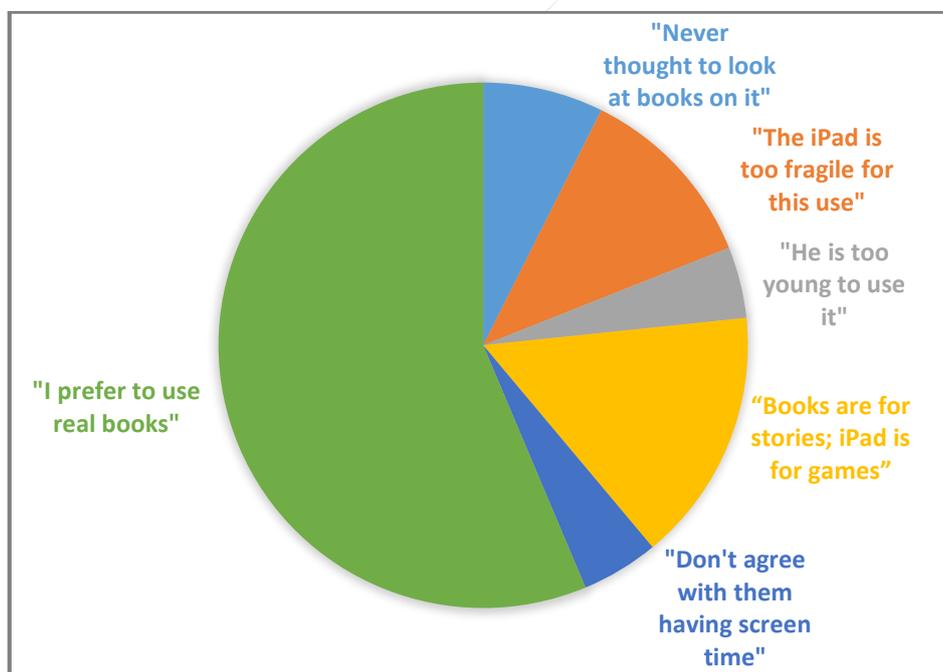
electronically - books are sacred!" This group is represented in Figure 4 by the quote "I prefer to use real books".

66 parents gave a more specific practical reason as to why they do not use a touchscreen to share stories at home; the most common being screen size and the fragility of touchscreen devices, but this group also included parents who voiced their concerns about their children's eye health: "Because I don't think reading off a screen is good for children's eyes", behavioural difficulties associated with screen use such as poor sleeping: "We found she didn't sleep well after using the iPad", and distractibility: "My daughter would be distracted by the technology rather than concentrating on the story." This group is represented in Figure 4 by the quote "The iPad is too fragile for this use".

In total we got 89 responses that focused around touchscreens being used for other purposes by children in the home. This group is represented in **Figure 4** by the quote "Books are for stories; iPad is for games". Of these, 56 mentioned children playing games (12 specifically educational games): "He uses the tablet for interactive literacy games but not reading books" and 27 watching videos, for example on YouTube and CBeebies: "She tends to use the iPad to look at videos of Peppa Pig, Ben and Holly and other similar type of videos on YouTube."

For 25 parents the main reason given was their child's age, 27 reported that they do not like their child using technology at all, or they heavily restrict it, while the remaining 42 had not thought of using touchscreen devices for this purpose or said they did not have any apps on touchscreens; these three groups are summed up respectively by the following quotes in Figure 4: "He is too young to use it"; "don't agree with them"; and "never thought to look at books on it".

**Figure 4: Barriers to the use of touchscreens for accessing stories at home with young children**



We also ran a focus group for seven parents of three to five-year-olds to get a more in-depth view of children using touchscreens to look at or read stories in the home. Most of the conversation about reading in general gravitated around print books, for example children reading the books they bring home from school. However, parents were also positive about the benefits of children looking at or reading stories on a touchscreen at home. Specific benefits of looking at stories on touchscreens included the device automatically orienting print: "Some children when they first start books have got them upside down, haven't they, it's having the right way with the book, the right way of turning the pages right to left rather than left to right";

and being able to adjust the size of text: “He mainly reads school books that they bring home or even uses his Kindle which is good because the font sizes on them you can make bigger which is really handy for him.”

Despite positive comments, most parents also agreed that there are things about print books that cannot be simulated on a touchscreen, and indicated that these reasons prevent them from sharing stories on screens with their children at home, as illustrated by the following exchange:

Parent 1: “I have a problem with reading a book on a thing [tablet], I like pages, I don’t know, I just like holding a book. It sounds silly, it’s not right.”

Parent 2: “No, it’s right, because you like turning the pages. I’ve got books as well as a Kindle.”

Parent 3: “It’s a generation thing I think.”

However, one parent made the following comment: “I’ve got a daughter who’s four and a half. When I first had her I was adamant she was never going to touch my phone, she wasn’t going to touch the TV remote and I had this attitude and so initially she only ever had books. She didn’t touch anything else. Then it suddenly dawned on me maybe I’m holding her back when I started looking around schools and seeing they’ve all got iPads and they’re all on the computer and I thought maybe I’ve done the wrong thing. I don’t think I have because it gave her a great start. She reads really well and she loves books.” This quote nicely illustrates the conflict some parents felt.

### **To sum up, despite high parental confidence around technology, daily reading is still the preserve of print books**

This section has given us some initial insight into how much touchscreens are used in the home for looking at or reading stories, which children use touchscreens and what might encourage or discourage parents from initiating this activity.

We have seen that the children of younger parents are more likely to access stories on a touchscreen, though it is not clear from the current data why this might be the case given that every age group of parents reported a high level of confidence around sharing on-screen stories with their child, and most parents reported that they enjoy this activity.

The role that parents have in engaging or encouraging children to read or look at stories on screen is an area of interest for future research: who initiates touchscreen story time at home? How do parents and children choose an app or ebook? In what way do the attitudes of parents who share touchscreen stories with their child differ from those who choose not to?

## **How is technology used to support emergent literacy in early years settings?**

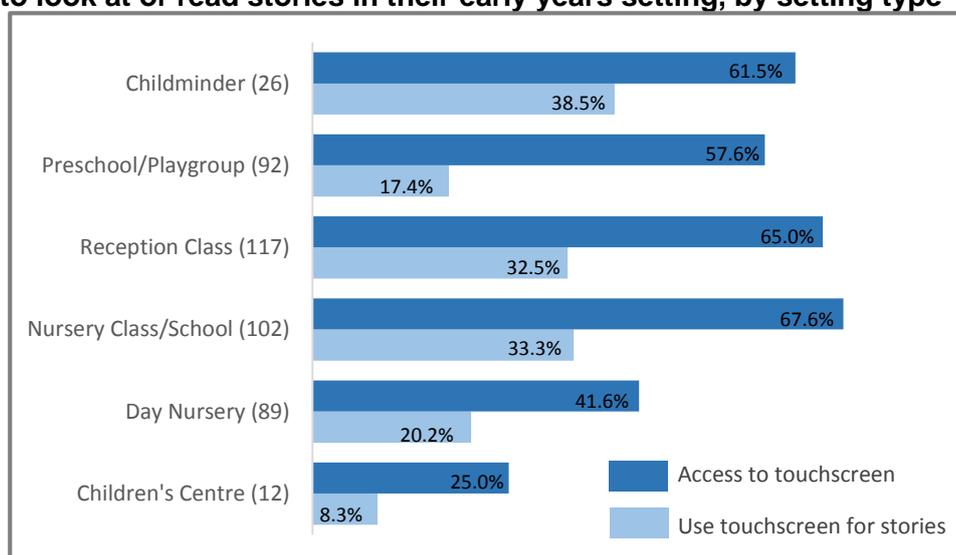
Technology as a tool for learning is not just on the rise in the home but in educational establishments too, including early years settings. To explore how digital technology is used in early years settings we surveyed 450 early years practitioners and asked about their own attitudes to literacy and the reading habits of the children in their care, both with respect to traditional print stories and stories on touchscreens. Practitioners from a variety of settings responded: 20.0% worked in day nurseries, 23.0% in nursery classes, 26.6% in reception classes, 20.8% in preschools or playgroups, 5.9% were childminders and 2.7% worked in children’s centres. Practitioners were 41 years old on average and 96.4% were female. While our questionnaire focused on the use of touchscreen devices in early years settings, we also developed a picture of practitioners’ attitudes towards technology more broadly with respect to emergent literacy.

## Most children who have access to touchscreens do not use them for looking at or reading stories

We asked practitioners about access to touchscreen devices in their classroom. In total, 58.2% reported that children have access to touchscreens in their early years setting. We looked at whether children were more likely to have access in certain types of setting and found that access was particularly low in children’s centres compared with other settings<sup>18</sup>, with just 25.0% of practitioners from children’s centres reporting access to touchscreens, while 67.6% of practitioners reported access in nursery classes or school nurseries, as illustrated in Figure 5.

Although on average 58.2% of children were reported to have access to touchscreens in their early years setting, only 26.9% of practitioners (121) reported that the children in their care use a touchscreen to look at or read stories in a typical week. Again, whether or not children were reported to use touchscreens to look at stories varied somewhat by setting, with those looked after in preschools or playgroups being less likely to use touchscreens for this purpose than children in other settings<sup>19</sup>. **Figure 5** shows access to and use of touchscreens across the different settings represented by our respondents.

**Figure 5: Percentage of children who have access to touchscreens and percentage who use them to look at or read stories in their early years setting, by setting type**



## Practitioner age does not make a difference to children’s access of digital stories

The use of touchscreens, as opposed to access to them, is more likely to be up to individual practitioners rather than being dependent on school resources. We therefore looked at whether practitioner age was related to whether or not children use touchscreens to look at or read stories in a typical week. The ages of practitioners who responded to our survey showed a good spread between 18 and 63 years. When we grouped practitioners into four bands based on their age, a trend was evident: 54.5% of 18 to 30-year-old practitioners reported that the touchscreens children had access to were used to look at or read stories, while only 32.7% of the oldest group (over 51 years)-reported touchscreen use. However, this trend was not statistically significant<sup>20</sup>. It was not possible to look at the impact of practitioner gender as nearly all those who responded to our survey were female.

<sup>18</sup> The single categorical predictor ‘setting’ reliably distinguished between children who do and do not have access to touchscreen technology in the classroom:  $\chi^2 = 21.706$ ,  $p = 0.001$ ,  $df = 5$ ; Nagelkerke’s  $R = 0.066$ ; prediction success was 63.0%; only children’s centres made a significant contribution to prediction according to the Wald criterion ( $p=0.044$ ).

<sup>19</sup> The single categorical predictor ‘setting’ reliably distinguished between children who do and do not use touchscreens to look at or read stories in a typical week ( $\chi^2 = 15.577$ ,  $p = 0.008$ ,  $df = 5$ ). Nagelkerke’s  $R$  of 0.053 indicates a weak relationship between prediction and grouping. Prediction success was 72.0%. Only preschool/playgroup made a significant contribution to prediction,  $p=0.030$ .

<sup>20</sup> Association between practitioner age group and reported touchscreen use:  $\chi^2=4.882$ ,  $df=3$ ,  $p=0.181$ .

We asked practitioners how many tablet computers were available for use by the children in their setting and how many ebooks were available on those devices. The range of responses regarding the number of tablet computers was substantial, from none to 120. Of those practitioners who reported having tablets available to the children, 43.1% reported five or fewer. Of those who reported access to touchscreens, 126 said that ebooks were available to the children in their care, with the number of ebooks available varying from 0 to 200, with an average of 13.5<sup>21</sup>. Again the number of ebooks available to children did not vary with the age of practitioners<sup>22</sup>, with the youngest group of practitioners (18 to 30 years) reporting on average 15 ebooks, and the oldest group (over 51 years) reporting on average 9 ebooks. This emphasises that technology is not the reserve of young practitioners.

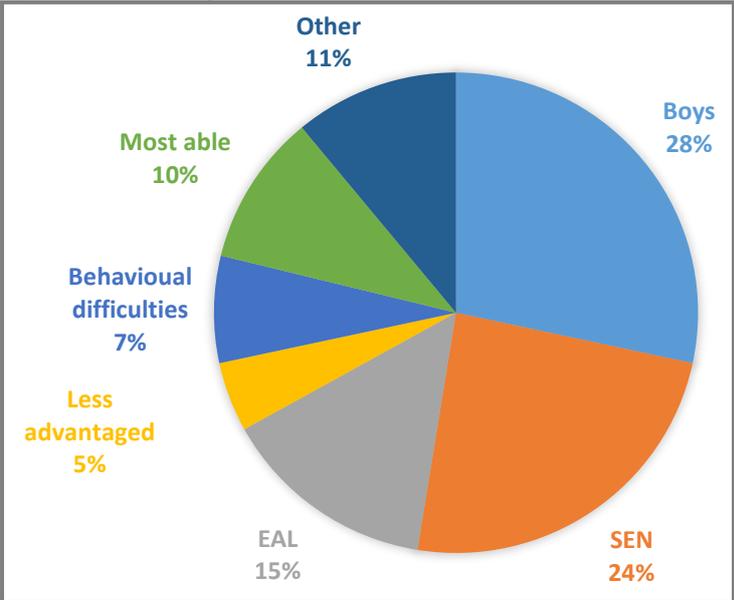
**Practitioners feel that technology particularly supports boys and children with SEN**

We asked practitioners a series of questions about the benefits of technology for the emergent literacy skills of different groups of children, and about the use of technology to support and engage with parents. In these questions we did not focus specifically on touchscreen technology, but rather gave practitioners the opportunity to tell us about how technology more broadly impacts on their teaching practice around literacy.

All 450 practitioners were asked if they thought technology supports the emergent literacy skills of specific groups of children. The majority of practitioners felt that technology is supportive for the emergent literacy skills of boys (59.8%) and children with special educational needs (SEN; 55.1%), while fewer than half said that technology was supportive for girls (47.1%), children with English as an additional language (EAL; 44.7%), the most able children (42.2%), children with social or behavioural problems (38.9%), children from less advantaged backgrounds (38.4%) and other children (11.8%).

We then gave practitioners the options of these same groups and asked whose early literacy skills they think technology is *most* beneficial to in their early years setting. Not all were able to select a group of children who they thought benefited the most, with 236 giving responses to this question. **Figure 6** shows the breakdown of responses from those practitioners who were able to select one group above others. Boys and children with special educational needs (SEN) were most likely to be selected.

**Figure 6: Which group’s early literacy skills do you think technology benefits the most?**



<sup>21</sup> SD = 27.4. One observation was excluded as an outlier.  
<sup>22</sup> Correlation between practitioner age and the number of e-books available to children:  $r(100) = -0.105, p = 0.299$ .



different strategies for engaging parents using technology and supporting parents in the use of technology at home.

**Online learning journals:** 55 practitioners mentioned using an online learning journal specific to early years education settings so that they could share information about children's progress with parents who had access to the same online space. The most popular resource was *Tapestry*, which supports the sharing of photos, videos and text. *"We use Tapestry (an online learning journal) and all parents have access to this - they love it."*

**Email updates:** 28 practitioners reported that they use either email or texts to send out updates on their children's progress. *"We are able to send links via the newsletter about sites that have activities, events and learning regarding their child's learning and development."*

**School website or blog:** 21 said that their school had a website that the parents could access, or that either the school or class had a blog, which they or the children contributed to. *"We have a nursery blog which the parents have been very pleased with."*

**Sharing resources:** 19 mentioned telling parents about apps, TV programmes and websites that might be useful for literacy. One practitioner reported using QR codes to share "rhyme of the week". *"We provide lists of useful websites that the parents can use at home."*

**In-school support:** 18 mentioned spending time with parents to run workshops or help support their own technology skills. *"We have a cyber cafe where we support parents in using appropriate apps."*

**Social media:** 14 mentioned social media – specifically Facebook and Twitter. *"Sharing photos on Facebook enables parents to see what and how the children are learning at school."*

### **There are practical barriers to using touchscreen technology in early years settings**

In order to further supplement our understanding of touchscreen technology use in early years settings we ran an online focus group for six practitioners. A major benefit of this focus group was that it helped us understand some of the barriers to touchscreen use.

One of the clearest messages of the focus group was that although practitioners were positive about the benefits of touchscreens, such as the additional learning experiences offered, they generally agreed that it can be hard to use touchscreens to share stories with large groups of children: *"Currently, we do not use these tablet computers for group story time sessions as I find it is hard for all of the children to see the screen"; "I do feel that looking at a story on a tablet is not as effective as looking at a book when you have 24 preschool children as they find it hard to see and tend to start trying to climb over each other"*

Practitioners also discussed what they themselves enjoy about print books: *"They are REAL, you can hold them, turn the pages (the sound of pages being turned is one of my favourite childhood memories, even now it makes me smile - you're safe and cosy and with someone you love), it is an EXPERIENCE"*.

### **To sum up, practitioners see technology as a valuable resource, but barriers are still evident**

In this section we've explored practitioners' use of touchscreen technology to support emergent literacy skills in early years settings, and have also considered the use of technology more broadly.

Many positive aspects of technology use emerged here: practitioners of all ages are engaging children with touchscreens; apps and online games are being used to develop children's emergent literacy, particularly around phonics; boys and children with SEN are viewed as benefiting the most; and practitioners are using technology to support parents themselves, as well as supporting parents around the use of technology in the home.

However, barriers still evidently exist when it comes to integrating technological devices into early years practice, including practical barriers such as screen size and practitioners' own views about the importance of print books.

## Do parents and practitioners treat print-based and digital reading differently?

One crucial part of understanding how technology can be used to support emergent literacy is to consider how it is used and how it is viewed in comparison with print books. We therefore explored the similarities and differences in children's early literacy habits when looking at or reading printed stories and stories accessed on a touchscreen. As digital devices become ever more ubiquitous in homes and schools, and opportunities for reading on touchscreens become a more common occurrence in children's lives, we need to understand whether screen and print-based reading are equivalent. Do children, teachers and parents treat them the same? Are they interchangeable? Can touchscreens promote literacy in the same way or to the same extent as print-based stories? In particular, we were keen to explore whether children, parents and practitioners are equally confident sharing stories in different media, whether they enjoy them to the same degree, and how literacy behaviour is currently affected by story medium.

To compare attitudes and behaviours relating to stories in print and stories on touchscreens directly, we focus here on the 366 parents who reported that their child uses a touchscreen to look at or read stories in a typical week, and the 114 practitioners who reported that they read stories along with the children in their care on a touchscreen device<sup>23</sup>.

### Children access print-based stories more frequently than stories on a touchscreen both at home and in early years settings

As reported above, nearly all families (96.7%) have access to a touchscreen device at home but only a third (36.6%) of children in these families use a touchscreen to look at or read stories at least once in a typical week, and while many early years settings have touchscreen devices (58.2%) again a minority of those children who have access to touchscreens use them to look at or read stories (43.5%). By contrast, in a typical week almost all children look at or read printed stories both at home (97.7%) and in early years settings (99.1%).

As is illustrated in **Figure 8**, children look at or read stories in print more frequently than they do on a touchscreen. In early years settings, children look at or read printed stories on average 4.5 days a week, and screen-based stories on average 2.4 days in a typical week; while at home children look at or read printed stories on average 5.9 days in a typical week and stories on a touchscreen 3.4 days in a typical week<sup>24</sup>. Both at home<sup>25</sup> and in early years settings<sup>26</sup> children are more likely to read printed stories on a daily basis than they are to read daily on a touchscreen.

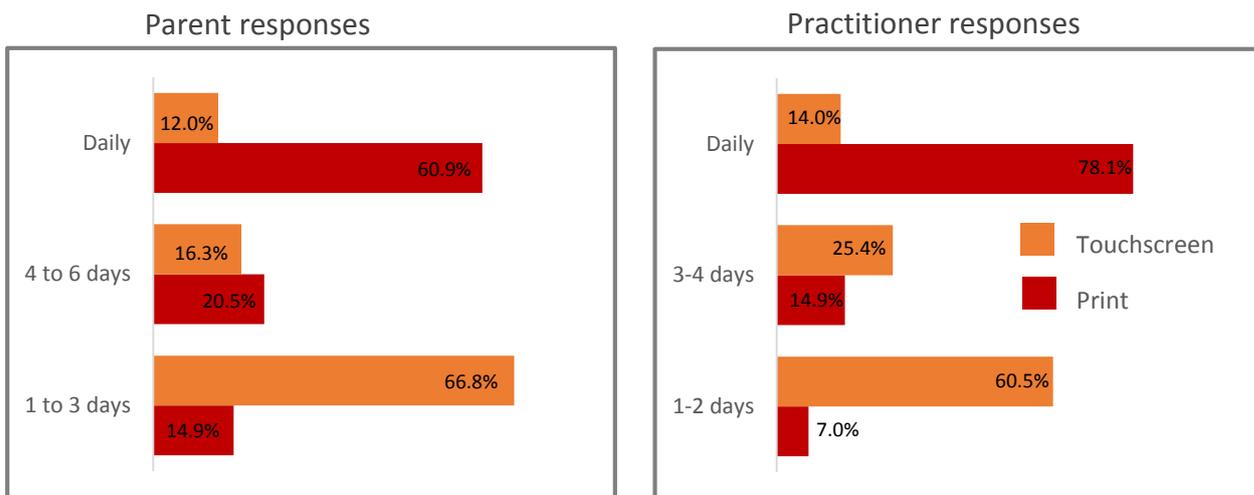
<sup>23</sup> Note that 121 practitioners reported that children look at or read stories on a touchscreen in a typical week, so presumably 7 practitioners allow independent story time only.

<sup>24</sup> Parent responses: in print sd= 1.84, on a touchscreen sd= 2.30. Practitioner responses: in print sd= 1.01, on a touchscreen sd= 1.37.

<sup>25</sup> Reading print or screen-based stories at home on a daily vs non-daily: McNemar, p<0.001

<sup>26</sup> Reading print or screen-based stories in EY settings on a daily vs non-daily: McNemar p<0.001

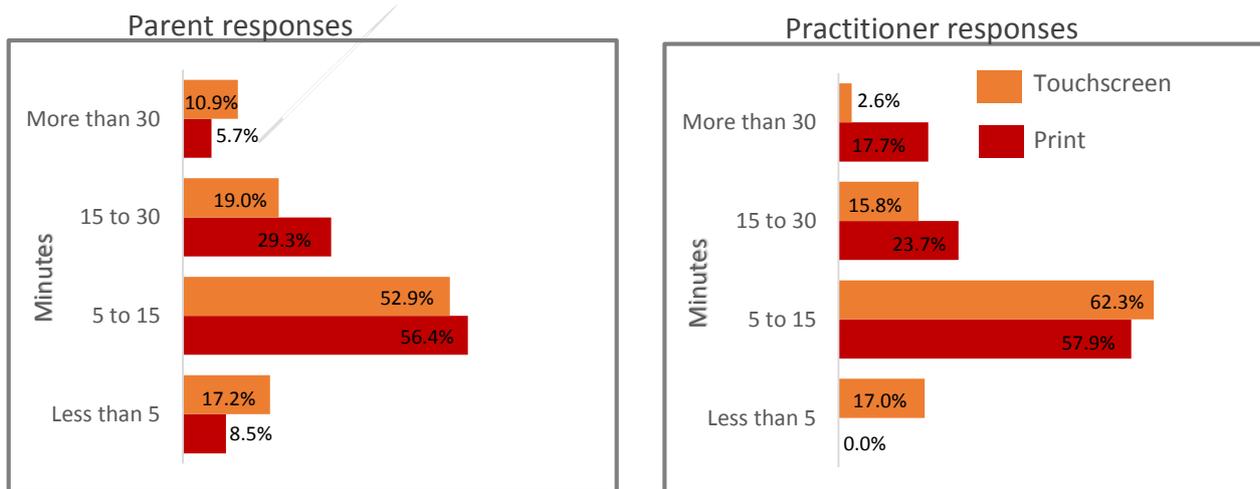
**Figure 8: Frequency of reading on a touchscreen and in print in a typical week at home (parent responses) and in early years settings (practitioner responses)<sup>27</sup>**



**Children access print-based stories for longer than stories on a touchscreen in early years settings but not at home**

Although children look at or read printed stories more frequently, the duration of a typical story session at home is comparable across media, with children equally likely to spend more or less than 15 minutes reading in print or on a touchscreen<sup>28</sup>. However, in early years settings, the picture is slightly different as practitioners are more likely to share stories for 15 minutes or longer when reading from a print book than when reading from a touchscreen<sup>29</sup>. Of those practitioners who reported sharing stories on a touchscreen with the children in their care, 41.6% reported spending over 15 minutes on average when sharing printed stories, while only 18.8% of practitioners reported sharing stories on a touchscreen for over 15 minutes on average. These findings are illustrated in **Figure 9**.

**Figure 9: Duration of reading session on a touchscreen and in print in a typical week at home (parent responses) and in early years settings (practitioner responses)<sup>30</sup>**



<sup>27</sup> For parent responses: n= 351. For practitioner responses: n= 114.

<sup>28</sup> Reading print or screen-based stories at home for more or less than 15 minutes: McNemar, p=0.056

<sup>29</sup> Reading print or screen-based stories in EY settings for more or less than 15 minutes: McNemar p<0.001

<sup>30</sup> For parent responses: n= 351. For practitioner responses: n= 114.

### Children have access to more print books than ebooks

We asked both parents and practitioners how many children's print books and children's ebooks they have available at home or in their early years settings respectively. For parents, the average number of reported owned books was 81.7, with numbers ranging from 0 to 400. We asked separately about how many borrowed books were in the home and where they might be borrowed from, for example libraries, friends or early years settings; parents reported an average of 3.3 borrowed books, ranging from 0 to 21. With respect to ebooks at home, of those parents who reported that their child uses a touchscreen to look at or read stories in a typical week, the average number of ebooks reported was 14.1, ranging from 0 to 351<sup>31</sup>.

For practitioners, on average 197.4 children's books were reported in their early years setting, ranging from 2 to 2,000, while of those practitioners who use a touchscreen to access stories, an average of 14.7 ebooks was reported, ranging from 0 to 200<sup>32</sup>. Both at home and in early years settings, children have access to more stories in a printed medium than in a digital medium<sup>33</sup>.

### Children from disadvantaged backgrounds read printed stories less but digital stories more

Children from more advantaged households (AB or C1) look at or read printed stories more often than their less advantaged (C2 or DE) peers, with more advantaged children reading print books on average 6.1 days a week and less advantaged children 5.5 days a week<sup>34</sup>. However, children from disadvantaged backgrounds look at or read stories on touchscreens 3.8 days in a typical week, which is more than children from more advantaged backgrounds, who access stories on a touchscreen 3.2 days in a typical week<sup>35</sup>.

Still just considering those parents who report that their child uses a touchscreen to look at or read stories in a typical week, overall reported reading (so that might be on a touchscreen or print stories) does not statistically differ between groups, with advantaged children reading or looking at stories 6.0 days a week, and disadvantaged children 5.6 days a week<sup>36</sup>, so taking both media into account, average frequency of looking at or reading stories evens out.

### Children read on screen at the expense of printed books

We were interested to know whether those children who access stories on a touchscreen do so in addition to reading print-based stories or do so at the expense of print-based stories. Looking at the number of days a week (0 to 7) children look at or read print-based stories at home, we compared children who use a touch screen to access stories with those children who do not use a touchscreen to access stories. We found that on average those who read on a touchscreen read print stories less than those who do not read on a touchscreen (5.7 days vs. 6.1 days)<sup>37</sup>. So it seems that children in our sample who look at or read stories on a touchscreen read print stories slightly less often than their peers who do not access stories on a touchscreen. Although notably, the number of children who read only print stories daily differs by just 4.4 percentage points between those who use touchscreens to look at stories and those who do not, so any effect of screen reading on print reading is small (see **Figure 10**).

<sup>31</sup> For owned books n= 982 sd= 71.70; for borrowed books n= 988 sd= 4.27; for ebooks n=363, sd = 37.05. Outliers were removed if > 3sd from the mean.

<sup>32</sup> For books n= 442, sd= 255.86; for ebooks n=111, sd = 28.55. Outliers were removed if > 3sd from the mean.

<sup>33</sup> Printed vs. ebooks at home: t(357)= -13.415, p< 0.001. Printed vs ebooks in early years settings: t(90)= 7.590, p<0.001.

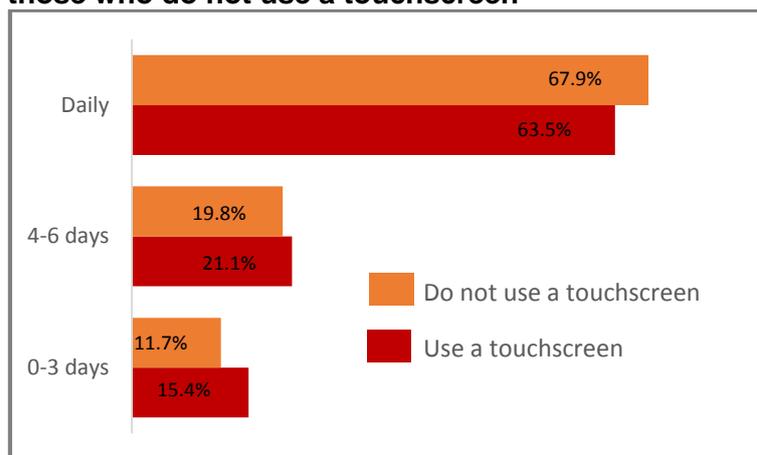
<sup>34</sup> ABC1 n=264, sd= 1.7 days, C2DE n=102, sd= 2.2 days. t(147.8)= 2.217, p= 0.028. Adjusted for inequality of variance.

<sup>35</sup> ABC1 n=264, sd= 2.2 days, C2DE n=102, sd= 2.5 days. t(166.2)= -2.142, p = 0.034. Adjusted for inequality of variance.

<sup>36</sup> ABC1 n=264, sd= 1.7 days, C2DE n=102, sd= 2.0. t(160.8)= 1.597, p= 0.112. Adjusted for inequality of variance.

<sup>37</sup> The number of days in a typical week children read print stories if they do or do not also use a touchscreen to access stories: t(987)=3.32, p=0.001

**Figure 10: How many days a week children read print stories, for those who do use a touchscreen and those who do not use a touchscreen<sup>38</sup>**



### Parents do not use digital reading as a ‘babysitter’

One concern around digital devices is that parents treat them as ‘babysitters’ and allow their children to use them unsupported and for long periods of time. Here we asked whether that might be true when it comes to reading on a digital device. Do parents sit with their children and engage in co-reading in the same way they would with a printed book and are they more likely to leave their children to look at stories on a touchscreen on their own?

We found that, contrary to this idea, of those children who access stories on a touchscreen in a typical week (366 children), overall parents were no more likely to leave their children to look at digital stories (65.6%) than to look at print stories (67.5%)<sup>39</sup>.

### Parents support their children more actively when sharing print stories

We also asked parents how they support their children when sharing stories: do they talk about the story (talk about what happens or how it might end, for example), do they encourage their child to notice the pictures, do they talk about the characters, and do they engage in other activities related to the story (such as making models or acting out scenes)?

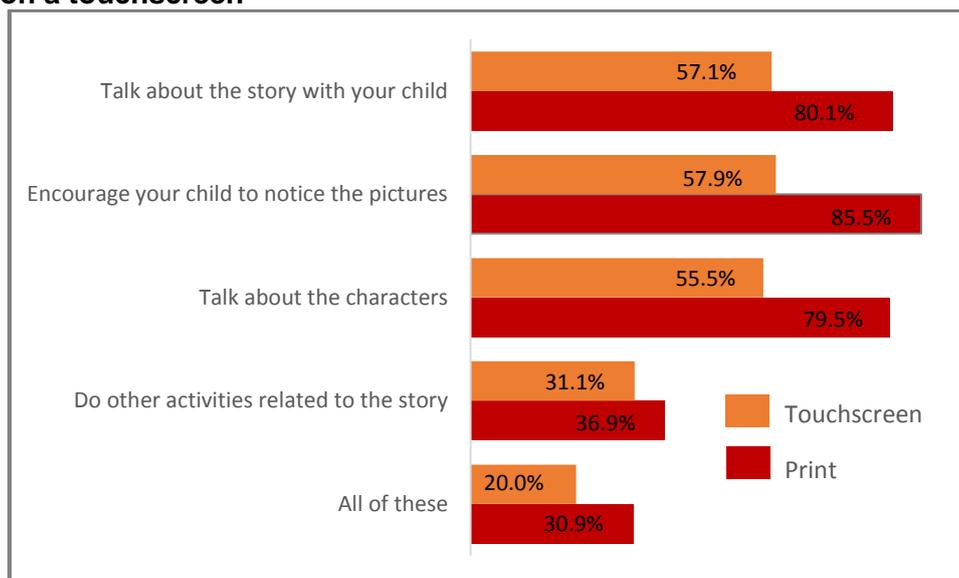
All individual activities were more likely to be reported when co-reading a printed story compared with stories on a touchscreen, and the likelihood of doing all of them was more likely in print<sup>40</sup> (see **Figure 11**). There is therefore no evidence from the current data that looking at or reading stories on a touchscreen is used as a babysitting activity, but at the same time, print and screen-based reading are not treated equivalently by parents when they co-read with their children.

<sup>38</sup> Those children who use a touchscreen n= 362, those who do not use a touchscreen n= 627

<sup>39</sup> Percentage of parents who leave their child to look at print stories alone vs. stories on a touchscreen: p=0.464

<sup>40</sup> Comparing percentage of parents who engage in each activity when co-reading printed stories vs stories on a touchscreen, with df = 365: talk about the story with your child, t=8.530, p<0.001; encourage your child to notice the pictures t=10.566, p <0.001; talk about the characters t = 8.839, p <0.001; do other activities related to the story t=3.293, p =0.001; engage in all of these t=5.008, p <0.001.

**Figure 11: Ways in which parents support young children when co-reading stories in print and on a touchscreen<sup>41</sup>**



No data are available from the current survey regarding what sort of formats parents and children use to share stories on touchscreens. Research suggests that this may be an important part of the complex co-reading dynamic. Ebooks that are simply digitised versions of print books have been found to elicit similar responses from parents and children during co-reading as compared to reading print books, while enhanced ebooks with interactive multimedia experiences built into the design result in fewer content-related behaviours, such as pointing, and more non-content-related behaviours, such as talking about the device, from both child and parent<sup>42</sup>. However, where caregivers are not available to co-read with children, enhanced ebooks may support reading experiences and thereby particularly benefit some children<sup>43</sup>.

### Disadvantaged parents support their children’s print reading less actively

We looked at whether parents from disadvantaged households (C2 or DE) support their children’s reading differently than parents from more advantaged households (AB or C1). We found that not only do children from disadvantaged households look at or read printed stories less frequently in a typical week, but when co-reading printed stories their parents are also less likely to talk about the story with them, encourage them to notice the pictures and talk about the characters<sup>44</sup>. However, children from disadvantaged households are also less likely to be left to read printed stories independently compared with their more advantaged peers. No such differences were found when we compared reading or looking at stories on a touchscreen. When using a touchscreen, parents from all backgrounds were equally likely to report supporting their children with a range of activities and were equally likely to leave their children to look at stories independently<sup>45</sup> (see **Figure 12**).

<sup>41</sup> n= 366

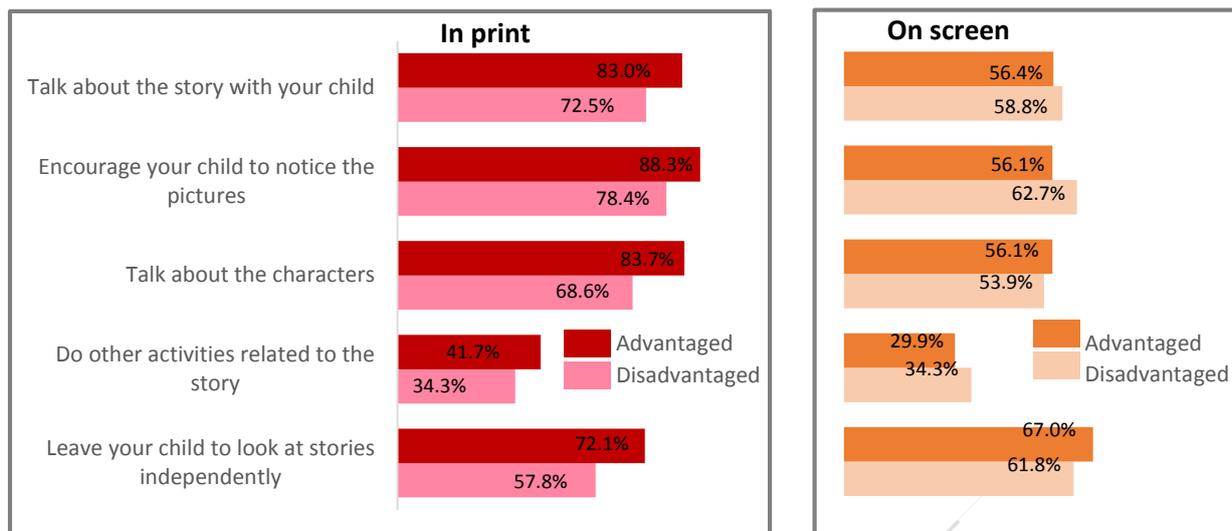
<sup>42</sup> Chiong, C., Ree, J., Takeuchi, L., & Erikson, I. (2012). Comparing parent-child co-reading on print, basic, and enhanced e-book platforms. A Cooney Centre quick report. Retrieved from [http://www.joanganzcooneycenter.org/wp-content/uploads/2012/07/jgcc\\_ebooks\\_quickreport.pdf](http://www.joanganzcooneycenter.org/wp-content/uploads/2012/07/jgcc_ebooks_quickreport.pdf)

<sup>43</sup> Bus, A. G., Takacs, Z. K., & Kegel, C. A. T. (2015). Affordances and limitations of electronic storybooks for young children’s emergent literacy. *Developmental Review, 35*, 79-97.

<sup>44</sup> ABC1 n=264, C2DE n=102. Talk about the story with your child  $t(159.1) = -2.077$ ,  $p = 0.039$ ; encourage your child to notice the pictures  $t(150.9) = -2.160$ ,  $p = 0.032$ ; talk about the characters  $t(152.6) = -2.930$ ,  $p = 0.004$ ; do other activities related to the story  $t(189.5) = -1.309$ ,  $p = 0.192$ ; leave your child to look at stories independently  $t(169.9) = -2.366$ ,  $p = 0.019$ . All adjusted for unequal variance.

<sup>45</sup> ABC1 n=264, C2DE n=102. Talk about the story with your child  $p = 0.680$ ; encourage your child to notice the pictures  $p = 0.243$ ; talk about the characters  $p = 0.713$ ; do other activities related to the story  $p = 0.418$ ; leave your child to look at stories independently  $p = 0.342$ .

**Figure 12: Ways in which parents from more and less advantaged households support young children when co-reading stories in print and on screen<sup>46</sup>**



### Parents are equally confident sharing print and screen-based stories but practitioners are not

We asked both parents and practitioners to rate how confident they are sharing print and screen-based stories with the children in their care; we also asked them to rate how confident the children are sharing stories in different formats.

Both parents and their children are equally confident sharing stories in print and on touchscreens (see **Figure 13**). Around three-quarters of parents feel very confident sharing stories in print and on a touchscreen, and around half said that their children are fairly confident with both print-based and screen-based stories<sup>47</sup>.

However, the practitioner data suggests that there is less confidence around digital stories in early years settings, with practitioners reporting that both they and the children in their care are less confident when sharing stories on a touchscreen compared with sharing print stories<sup>48</sup> (see **Figure 13**); 82.2% report that they are very confident sharing printed stories and 38.1% that the children in their care are also very confident when sharing printed stories, compared with only 55.1% saying they feel equally confident with stories on a touchscreen and 30.5% that the children in their care are equally confident with stories on a touchscreen.

### Parents and practitioners enjoy sharing stories less on screen than in print

In addition to confidence ratings, we asked how much enjoyment parents and practitioners get from reading in different formats, and how much they think the children in their care enjoy reading in print and on touchscreens. We found that, across the board, enjoyment was rated more highly for reading print stories than reading stories on a touchscreen, for both parents and practitioner and their ratings of children in their care<sup>49</sup> (see **Figure 14**). For practitioners themselves this difference was most evident<sup>50</sup>, with a difference of 40.2 percentage points between the percentage of practitioners reporting that they enjoy sharing stories a lot in print compared with on a touchscreen.

<sup>46</sup> n= 366

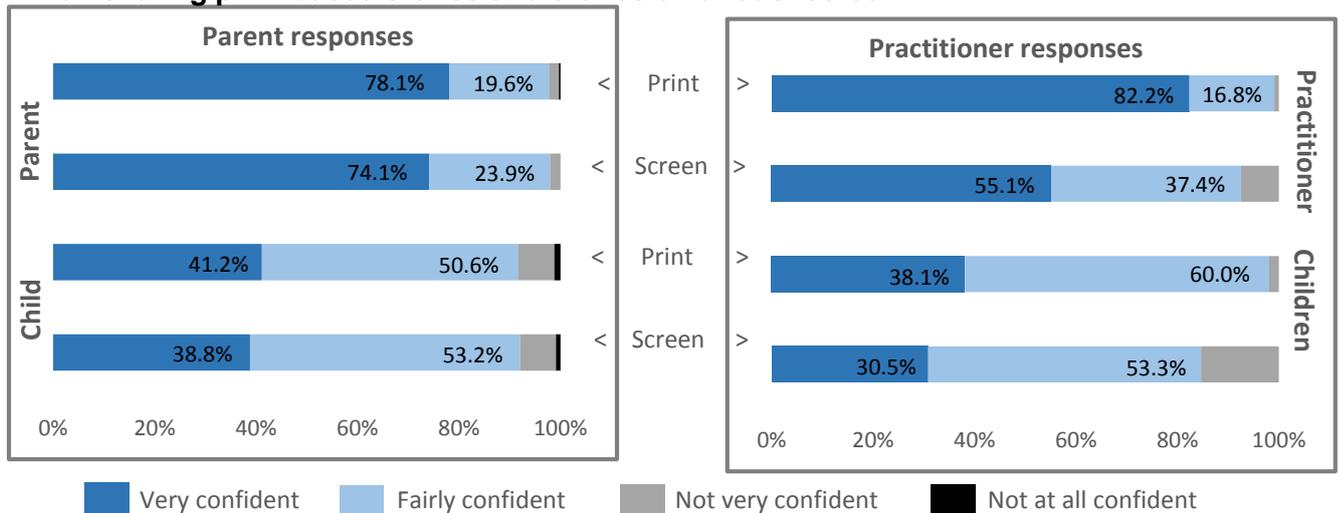
<sup>47</sup> Parent reported confidence: parents n=352, z= -1.805, p =0.071, children n=340, z= -0.631, p=0.528.

<sup>48</sup> Practitioner reported confidence: practitioners n=107, z= -5.533, p<0.001, children n=105 z= -3.463, p =0.001

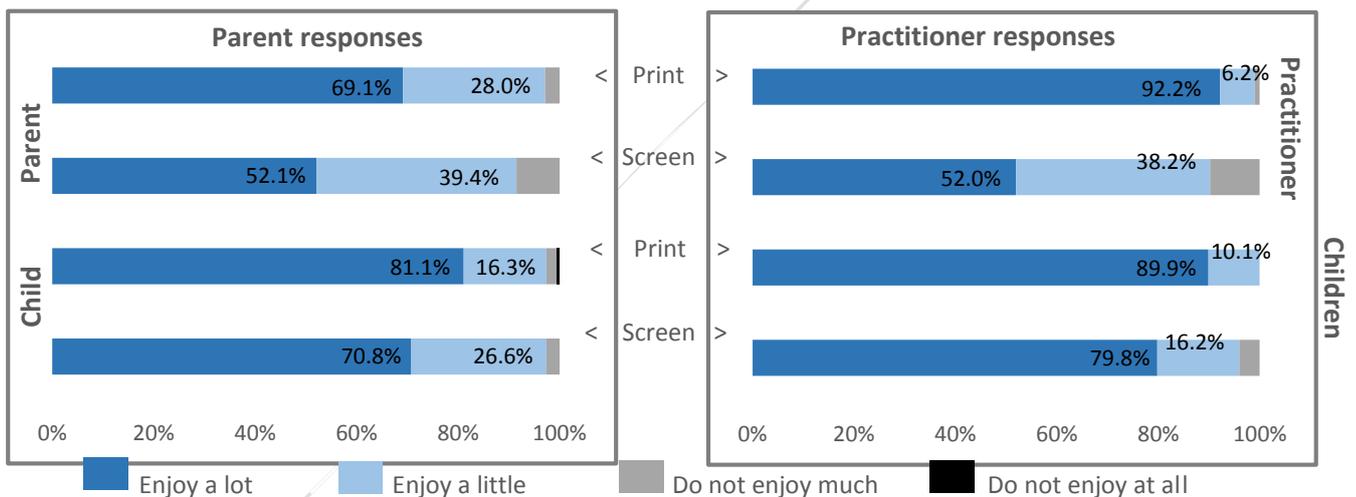
<sup>49</sup> Parent reported enjoyment: parents n=353, z= -6.192, p<0.001, child n=349, z= -3.145, p=0.002.

<sup>50</sup> Practitioner rated enjoyment: practitioners n=102, z= -6.412, p<0.001, children n=99, z= -2.858, p= 0.004.

**Figure 13: Practitioners' and parents' confidence, and reported confidence of children, when sharing print-based stories and stories on a touchscreen**



**Figure 14: Practitioners' and parents' enjoyment, and reported enjoyment of children, when sharing print-based stories and stories on a touchscreen**



**Children decide how long to read for**

Given that child and parent enjoyment differs between print and screen, we wondered if enjoyment of either or both party is related to how often children access print-based and screen-based stories respectively.

We found that both parent enjoyment and child enjoyment of printed text predicted how many days a week children were reported to access printed stories<sup>51</sup>, suggesting that both parents and children initiate print-based reading.

We then looked at reported enjoyment of looking at or reading stories on a touchscreen. We found that the reported enjoyment of neither parents nor children predicted how many days a week children accessed screen-based text<sup>52</sup>. This indicates that perhaps some other factor

<sup>51</sup> adjR2 = 0.168, F(2,343)=35.725, p<0.001, child t=-6.272, p <0.001, parent t=-2.532 p=0.012

<sup>52</sup> Overall model was significant adjR2=0.015 but neither predictor was successful

determines when a digital story is accessed, such as when the touchscreen is available perhaps.

We wondered if enjoyment would be more related to how long children read for rather than how often they read. It turned out that the length of time children read for was related to how much they were reported to enjoy print and on-screen reading respectively, while parent enjoyment was not related to either<sup>53</sup>, suggesting that children are the ones who determine how long they read for.

### **In sum, attitudes and behaviours around emergent literacy are influenced by medium**

We aimed to assess whether reading printed stories and stories on a touchscreen are viewed as equivalent by parents and practitioners in terms of their own attitudes and behaviours and the behaviours and reported attitudes of the children in their care.

We have seen that children are more likely to look at or read printed stories on a daily basis than stories on a touchscreen, both at home and in early years settings. Overall though, there seems to be a bit of a disparity between the home and early years settings in terms of how quickly touchscreen technology is becoming incorporated into the emergent literacy landscape; this is true both in terms of attitudes and behaviour. For example, practitioners share printed stories more often and for longer than they share stories on touchscreens, and while parents are equally confident with both media, practitioners are more confident when sharing stories in print.

We have also seen that co-reading is affected by story medium. Parents support their child less actively when co-reading with a touchscreen, although they are no more likely to leave their child alone with a touchscreen story than with a printed story. Parents from more or less advantaged households differ with respect to co-reading, with less advantaged parents providing less support for their children when sharing printed stories. This is not the case for touchscreen stories, however, and while disadvantaged children access printed stories less often than their more advantaged peers, they are more likely to access stories on a touchscreen, and background was not found to influence the support children receive when reading on a touchscreen. This suggests that touchscreen stories may be a route into literacy for disadvantaged children, although much more research is required to determine if that is the case and how best disadvantaged children can be supported as they use touchscreen technology.

Really the key question here is whether touchscreen technology can support emergent literacy as well as print stories do, or indeed whether it has a different role to play. By understanding more about the potential benefits of touchscreens in the preschool years, we can direct parents in best practice for supporting their children in using technology alongside print, and begin to address some of the practical and attitudinal barriers to technology use in early years settings.

## **Does the use of touchscreen technology relate to vocabulary development?**

In order to explore the relationship between early reading attitudes/behaviours and language development we surveyed an additional 300 parents and tested their children's receptive vocabulary (understanding). The measure we used was the British Picture Vocabulary Scale<sup>54</sup>, which is a commonly used metric of children's language development. We opted for this rather

<sup>53</sup> For print-based text, adjR2=0.071, F(2,340)=14.104, p<0.001, child t=-3.166, p=0.002, parent t=-2.633, p=0.009. For Screen adjR2=0.023, F(2,346)=5.123, p=0.006, child t=-2.613, p=0.009, parent t=-0.617, p=0.538

<sup>54</sup> Dunn, L.M. & Dunn, D.M. (2009). *The British Picture Vocabulary Scale – Third Edition (BPVSIII)*. GL Assessment, UK.

than a direct measure of literacy as a) many of the children in our sample were too young to complete literacy tests, and b) receptive vocabulary is known to be strongly related to literacy development in the early years<sup>55</sup>.

The additional 300 parents were somewhat different to the 1,000 surveyed through YouGov, with more being female (89.9%), and the majority living in London (52.5%); they were also slightly younger (on average 34.9 years<sup>56</sup>). Again, the vast majority of parents reported that they had a touchscreen device in their household, in this case 94.3%. But only 48.7% said that their child uses a touchscreen to look at or read stories in a typical week.

Here we wanted to know whether the use of technology might be related to vocabulary development. One of the major reasons to better understand the role of technology in literacy acquisition is because touchscreen devices could play a different role in that process to print-based stories. Touchscreens, by their nature, provide opportunities for interactive, response contingent apps. For example, research has suggested that where picture illustrations are displayed in close temporal proximity to events described in a story, they better support comprehension of that story<sup>57</sup>. Furthermore, multimedia features embedded in complex stories have been shown to assist the acquisition of vocabulary items from stories<sup>58</sup>, and the movement of visual features is known to capture children's attention<sup>59</sup>. On the other hand, digital technology could be a distraction for children during story time<sup>60</sup>, thereby limiting comprehension and altering the nature of the parent-child interaction in a negative way.

### **Print-based reading has a greater impact on vocabulary development than reading on screen**

We asked whether, for those children who use touchscreens, there is a relationship between how often they access stories (both on touchscreen and in print) and their vocabulary scores. We found that the number of days children were reported to look at or read print-based stories predicted how big their receptive vocabulary was (see **Figure 15**), whereas the number of days they accessed stories on a touchscreen did not<sup>61</sup>. This is not very strong evidence for the relative roles of print and screen-based stories as in this sample not many children were reported to access stories on touchscreen devices often (71.2% of 139 children who were reported to access stories on a touchscreen do so 1 to 3 days a week), whereas half of this sample read daily in print (51.1%); in addition the sample size is quite small. However, it is indicative of the relative impact of looking at or reading stories on different media at this point in time.

<sup>55</sup> Lee J. (2011). Size matters: Early vocabulary as a predictor of language and literacy competence. *Applied Psycholinguistics*, 32, 69–92.

<sup>56</sup> Sd = 6.3 years

<sup>57</sup> See Bus, A., Takacs, Z. K., & Kegel, C. A. T. (2015). Affordance and limitations of electronic storybooks for children's emergent literacy. *Developmental Review*, 35, 97-97.

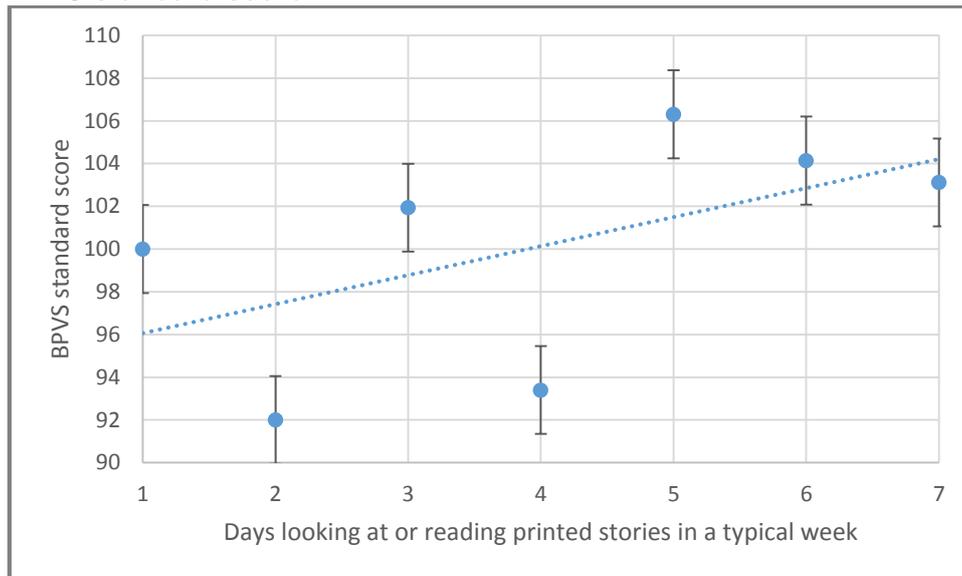
<sup>58</sup> Verhallen, M. J. A. J., Bus, A. J., & de Jong, M. T. (2006). The promise of multimedia stories for kindergarten children at risk. *Journal of Educational Psychology*, 98, 410-419.

<sup>59</sup> Verhallen, M. J. A. J., & Bus, A. G. (2009). Video storybook reading as a remedy for vocabulary deficits: Outcomes and processes. *Journal for Educational Research Online*, 1, 117-141.

<sup>60</sup> Chiong, C., Ree, J., Takeuchi, L., & Erikson, I. (2012). Comparing parent-child co-reading on print, basic, and enhanced ebook platforms. A Cooney Centre quick report. Retrieved from [http://www.ioanganzcooneycenter.org/wp-content/uploads/2012/07/jgcc\\_ebooks\\_quickreport.pdf](http://www.ioanganzcooneycenter.org/wp-content/uploads/2012/07/jgcc_ebooks_quickreport.pdf)

<sup>61</sup> With two predictors-  $\text{adj}R^2=0.061$ ,  $f(2,119)=4.951$ ,  $p=0.009$ , touchscreen  $\beta=-0.165$ ,  $p=0.064$ , print  $\beta=0.213$ ,  $p=0.017$ . With just touchscreen reading, significant negative prediction of vocabulary  $R^2=0.03$ ,  $f(1,133)=4.155$ ,  $p=0.043$ . With BPVS standard scores.

**Figure 15: Relationship between how many days children look at or read printed stories with their BPVS standard score<sup>62</sup>**



We also looked at whether the number of books and ebooks people have in the house would predict vocabulary scores. In this case neither did: although the number of books came close, the number of ebooks was nowhere near<sup>63</sup>. The failure to find a statistical relationship between the number of books in the home and vocabulary development might reflect the fact that young children can thrive on very few books, indeed preschool children have actually been shown to learn vocabulary better from sharing the same books over and over again<sup>64</sup>.

So we have seen hints here that in terms of vocabulary development, print is much more of a driving force than looking at or reading on a touchscreen - for the moment at least. However, due to the small number of children who currently access stories frequently on a touchscreen, we cannot draw any conclusions for the moment. Story apps show a huge variation with respect to the degree of multimedia integration and the extent to which additional features are developed to enhance rather than distract from the story content. These factors are likely to have a substantial impact on story comprehension and the quality of parent-child co-reading and should be the focus of future work in this area.

## Has the use of touchscreens to access stories changed in recent years?

In this last section, we explore children's access to touchscreen technology and how often children look at or read printed-based stories or stories on a touchscreen at home and in early years settings in 2015 compared with parent and practitioner responses in 2014<sup>65</sup>.

There are a couple of points to bear in mind here. Firstly, our samples in 2014 and 2015 were slightly different. In 2015 the parents who responded to our survey were slightly more likely to be from disadvantaged backgrounds than in 2014<sup>66</sup>, although they did not differ on any other demographic. The practitioners who responded did not differ significantly on the basis of gender, age, time working in the early years sector, setting type, Ofsted rating or the region of

<sup>62</sup> Graph shows standard error and regression line. N= 174. Mean for any given age = 100, standard deviation = 15.

<sup>63</sup>  $AdjR^2 = 0.02$ ,  $f(2,106) = 2.110$ ,  $p = 0.126$ , owned or borrowed print books,  $\beta = 0.188$ ,  $p = 0.053$ , ebooks  $\beta = 0.036$ ,  $p = 0.706$ .

<sup>64</sup> Horst, J. S., Parsons, K. L., & Bryan, N. M. (2011). Get the story straight: contextual repetition promotes word learning from storybooks. *Frontiers in Developmental Psychology*, 2, 1-11.

<sup>65</sup> Children who do not read on any media were excluded from the analysis (2014 N = 7; 2015 N = 0).

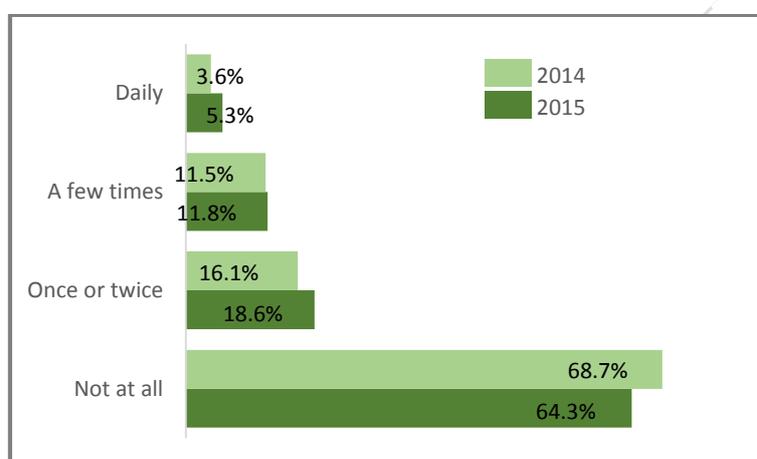
<sup>66</sup> 2014: 25.8% from C2 or DE households. 2015: 30.7% from C2 or DE households.  $t(2003) = -2.864$ ,  $p = 0.004$

the country they worked in. However, in 2015 significantly more practitioners from smaller settings took part in our survey than in 2014. Secondly, as we are only comparing two years here, even though differences exist and are statistically significant, without the context of more years for comparison, those differences are not necessarily meaningful. The aim of this section is to highlight areas that will be important to monitor as research in this field moves forward.

### Access to touchscreens has changed more than the use of touchscreens in the home

Compared with 2014, families in 2015 are significantly more likely to have access to a touchscreen device, such as a tablet computer, smartphone or other device (91.9% vs. 97.0%)<sup>67</sup>. In 2014 31.3% of the children who had access to a touchscreen at home used it to look at or read stories in a typical week; in 2015 that figure was 35.7%<sup>68</sup>. The figures for daily reading on a touchscreen remain very low through both 2014 (3.6%) and 2015 (5.3%). **Figure 16** illustrates how often children were reported to read or look at stories on a touchscreen in 2014 and 2015.

**Figure 16: How often children look at or read stories on a touchscreen at home in a typical week<sup>69</sup>**



### Touchscreens are less likely to be used in early years settings in 2015 than 2014

Like parents, early years practitioners<sup>70</sup> are also more likely to report that children have access to touchscreen devices in 2015 (58.4%) than in 2014 (41.4%)<sup>71</sup>. However, even though more touchscreen devices are available in early years settings, the likelihood of practitioners sharing stories on them did not increase from 2014 to 2015. Among those practitioners who have access to touchscreens in their settings, there has actually been a drop in the percentage of those who report using them to share stories with the children in the care, from 49.1% in 2014 to 40.8% in 2015<sup>72</sup>. Notably though this is not a significant drop, and the total percentage of practitioners reporting that children in their setting use touchscreens to look at or read stories in a typical week has increased from 20.4% in 2014 to 25.4% in 2015.

Of those practitioners who do report sharing stories with the children in their care on a touchscreen (114 in 2014 and 102 in 2015), the average length of time of a story session has decreased from 2014 to 2015. In 2015 practitioners are less likely than they were in 2014 to spend more than 15 minutes sharing stories on a touchscreen<sup>73</sup>, as shown in **Figure 17**.

<sup>67</sup> Access to touchscreens in the home 2014 vs 2015:  $t(1676.4) = 5.001, p < 0.001$ . Corrected for inequality of variance.

<sup>68</sup> Association between year and whether children use the household touchscreen to access stories:  $\chi^2 = 4.018, p = 0.045$ .

<sup>69</sup> 2014:  $n = 911$ . 2015:  $n = 959$ .

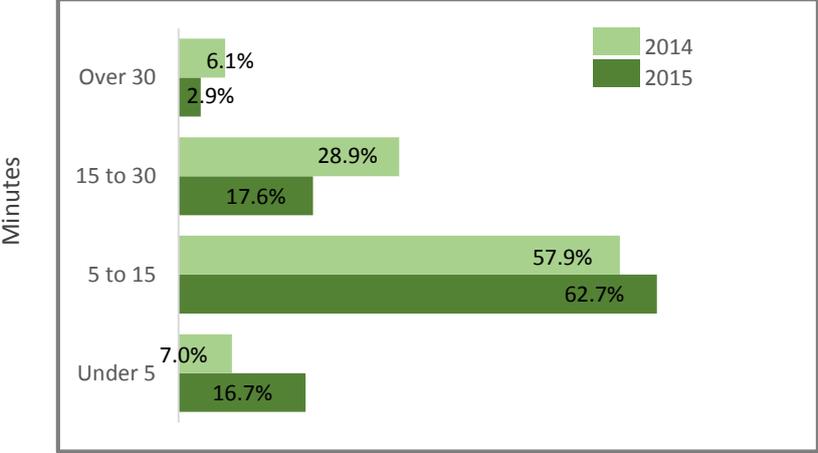
<sup>70</sup> Categories 'other' and 'childminder' were excluded from the analysis as this data was not collected in 2014.

<sup>71</sup> Access to touchscreens in early years settings 2014 vs 2015:  $t(1005) = 5.422, p < 0.001$ .

<sup>72</sup> Association between year and touchscreen use or not: 2014  $n = 232$ , 2015  $n = 250$ .  $\chi^2 = 3.383, p = 0.066$ .

<sup>73</sup> Association between year and story sessions lasting more or less than 15 minutes:  $\chi^2 = 5.585, p = 0.018$ .

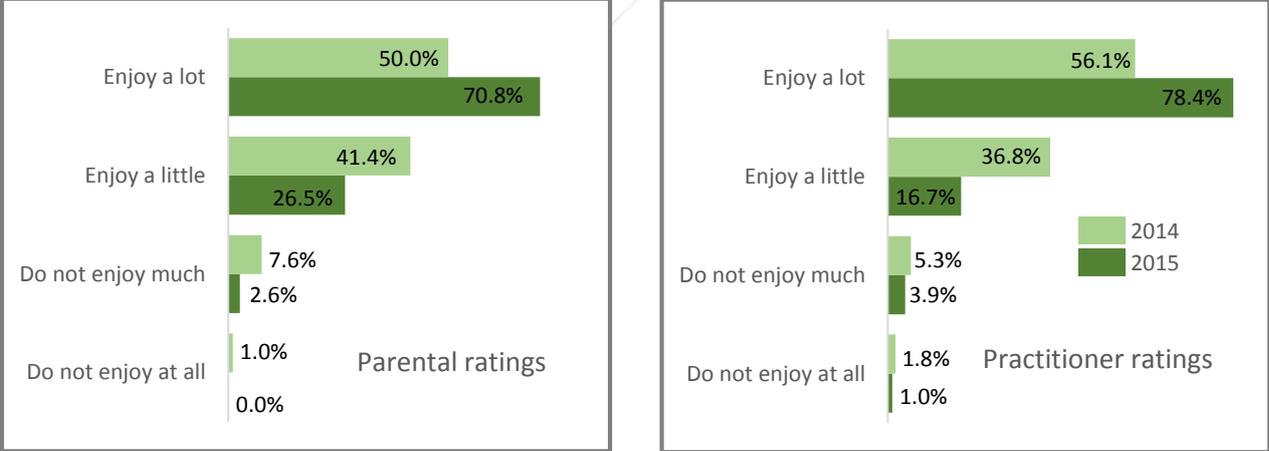
**Figure 17: How long children spend looking at or reading stories on a touchscreen in early years settings**



**Reported child enjoyment of touchscreen reading has increased**

Both parental and practitioner ratings of how much children in their care enjoy looking at or sharing stories on a touchscreen increased from 2014 to 2015<sup>74</sup>. For example, the percentage of parents reporting that their children enjoy looking at or reading stories on a touchscreen ‘a lot’ increased from 50.0% to 70.8%, and for practitioners this rating increased from 56.1% to 78.4%. These changes are illustrated in **Figure 18**, which suggests that much of the overall change can be accounted for by a shift in ratings from ‘enjoy a little’ to ‘enjoy a lot’.

**Figure 18: Parental and practitioner ratings of how much children enjoy looking at or reading stories on a touchscreen in 2014 and 2015**

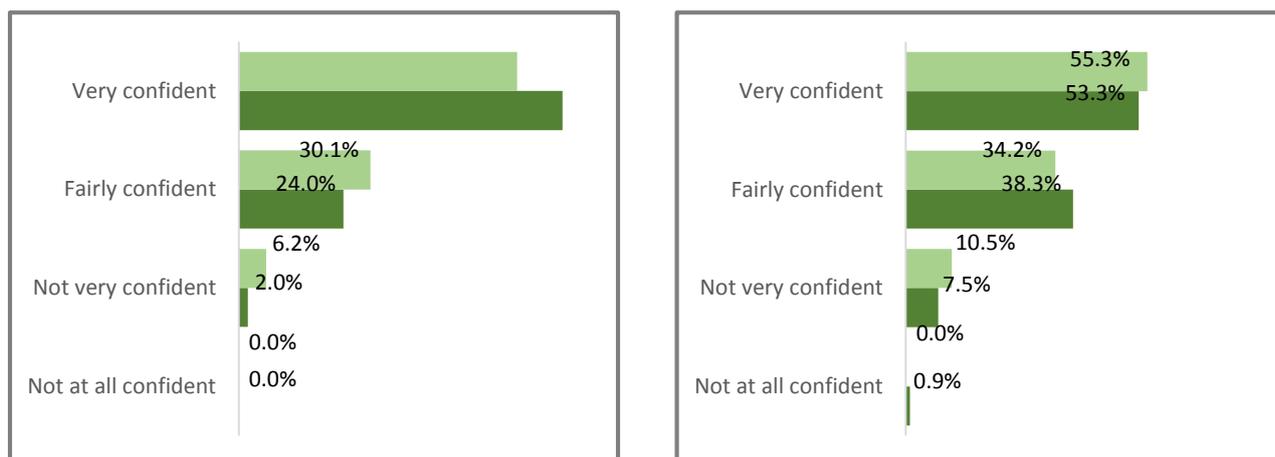


**Parents are more confident in 2015 but practitioners are not**

We asked parents and practitioners how confident they feel when sharing stories on a touchscreen with the children in their care. As illustrated in **Figure 19**, parents rated themselves as more confident in 2015, with an increase in ‘very confident’ responses from 63.7% to 74.0%. However, practitioner ratings of their own confidence did not change between 2014 and 2015<sup>75</sup>.

<sup>74</sup> Enjoyment: Parents, 2014 n= 290, 2015 n= 343; U= 38756, p< 0.001. Practitioners, 2014 n= 114, 2015 n= 102; U= 4554, p= 0.001.  
<sup>75</sup> Confidence: Parents, 2014 n= 289, 2015 n= 343; U= 42374, p= 0.004. Practitioners, 2014 n= 114, 2015 n= 107; U= 6036, p= 0.989.

**Figure 19: Parental and practitioner ratings of their own confidence when sharing stories with children on a touchscreen in 2014 and 2015**



### To sum up, things are changing faster at home than in early years settings

The evidence here suggests that in terms of technology being integrated into children’s emergent literacy experiences, changes are happening more quickly in the home than they are in early years settings. For example, while more children have access to touchscreen technology both in the home and in early years settings in 2015 compared with 2014, the use of touchscreens for looking at or reading stories has increased in the home only. Children were rated as enjoying stories on a touchscreen more in 2015 and parental confidence also increased from 2014. Interestingly though, practitioner confidence did not increase over the 2014 to 2015 period.

It should, however, be noted again that this section has only given an indication of areas to be monitored moving forward, as more longitudinal data is required to draw solid conclusions about ongoing changes in attitudes and behaviours. Future research should therefore consider whether these changes are part of a persistent pattern.

## Summary and conclusions

The aim of this report was to present the current status of touchscreen technology in preschool children’s emergent literacy in the home and in early years settings.

We saw, in support of previous literature in this field, that technology already plays a notable role in young children’s reading practice; however reading on a touchscreen does not perform the same function as print-based reading, nor are attitudes towards these different media equivalent.

Some key themes emerged from the current data:

1. *Touchscreen reading is being integrated into the home literacy environment more rapidly than the early years environment.* We have seen evidence for this conclusion at a number of points through this document. For example, parents report that both they themselves and their children are equally confident sharing stories in print and on touchscreens, while practitioners rate both themselves and the children in their care as less confident when sharing stories on a touchscreen. In addition, practitioners in 2015 are no more likely to say that the children in their care use touchscreens to look at or read stories in a typical week than in 2014, despite an increase in the availability of

touchscreens in early years settings. Having said that, it should be noted that practitioners do report a range of uses for technology in early years settings, as well as multiple ways in which technology is used to engage and support parents.

2. *Stories on a touchscreen and stories in print are not equivalent.* This is true both in terms of attitudes to reading and reading behaviours. Daily reading is still the preserve of printed books. Of those parents who reported that their child looks at or reads stories on a touchscreen at least once in a typical week, 12.0% reported daily reading on a touchscreen, compared with 60.9% of parents who reported daily reading of printed books. This is mirrored in early years settings, with 14.0% of those practitioners who said that they share stories on a touchscreen with the children in their care reporting that they do so daily, compared with 78.1% who share printed stories daily. Parents also reported that during co-reading they are more likely to support their child with a range of strategies when sharing a printed story compared with a story on screen. For example 80.1% of parents reported that they talk about the story with their child when sharing a printed book, compared with only 57.1% who do this when sharing a story on a touchscreen.
3. *Touchscreens may have a beneficial role to play in emergent literacy for disadvantaged children.* This is an idea which is suggested by the current data. Firstly, children from disadvantaged households look at or read printed stories less often than their more advantaged peers, but access stories on a touchscreen more frequently. In addition, while disadvantaged parents are less likely than their more advantaged peers to engage in supportive activities when co-reading with their child, there is no such disparity when it comes to touchscreen stories. Notably though, it seems that all parents would benefit from guidance around strategies to use when co-reading with their child on a touchscreen device.

This report highlights some key areas for future research with respect to the role of touchscreens in emergent literacy. Most important perhaps, is whether touchscreens can positively impact on literacy acquisition in a way that printed text cannot as a result of their responsive, interactive interface. In particular, can touchscreen technology provide opportunities for literacy development for children growing up in disadvantaged households, or, as suggested by the practitioners who responded to our survey, for boys and children with special educational needs? Another key area is understanding how parents can best support their children when co-reading stories on a touchscreen. We know that emergent literacy outcomes are better in preschoolers when adults support ebook reading<sup>76</sup>, but it is not yet clear how parents can best do this, or to what degree multimedia features in story apps foster or stifle parent-child interactions around text.

Touchscreen technology is likely to have an important role to play in emergent literacy in the future, and certainly it is necessary to prepare children for a technological work and home life in the future. However, we are only just starting to understand that role and how best to support children through their literacy journey in this age of technology.

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<sup>76</sup> Korat, O., Shamir, A., & Arbiv, L. (2011). Ebooks as support for emergent writing with and without adult assistance. *Education and Information Technologies*, 16 (3), 301-318.

## Appendix 1- Parent survey: technology questions N = 366

Appendices 1 and 2 only include the 366 parents who reported that their child looks at or read stories on a touchscreen at least once in a typical week.

**Table 1: How many days in a typical week does your child look at or read stories on a touchscreen at home?**

		<i>Daily in a typical a week</i>	<i>4 to 6 times in a typical week</i>	<i>1 to 3 times in a typical week</i>	<i>Don't know</i>	
Parents	All (N = 366)	12.0%	16.1%	65.3%	6.6%	
	Male (n = 179)	14.0%	15.1%	63.1%	7.8%	
	Female (n = 187)	10.2%	17.1%	67.4%	5.3%	
	18 to 30 years old (n = 61)	9.8%	21.3%	67.2%	1.6%	
	31 to 35 years old (n = 122)	13.9%	13.1%	67.2%	5.7%	
	36 to 40 years old (n = 92)	8.7%	17.4%	65.2%	8.7%	
	Over 40 years old (n = 91)	14.3%	15.4%	61.5%	8.8%	
	AB (n = 176)	11.0%	14.0%	69.3%	5.7%	
	C1 (n = 88)	14.7%	21.6%	54.9%	8.8%	
	C2 (n = 52)	14.2%	12.7%	66.4%	6.7%	
	DE (n = 50)	13.3%	22.2%	53.3%	11.1%	
	Male AB/C1 (n = 134)	7.7%	15.4%	72.3%	4.6%	
	Male C2/DE (n = 45)	15.8%	21.1%	56.1%	7.0%	
	Female AB/C1 (n = 130)	11.6%	17.4%	62.8%	8.1%	
	Female C2/DE (n = 57)	12.4%	14.9%	67.5%	5.2%	
	Child	Male (n = 172)	18.6%	15.7%	60.8%	4.9%
		Female (n = 194)	10.7%	14.8%	66.4%	8.1%
3 years old (n = 102)		7.8%	18.3%	67.8%	6.1%	
4 years old (n = 149)		10.0%	30.0%	60.0%	0.0%	
5 years old (n = 115)		16.2%	18.9%	59.5%	5.4%	
Region	North East (n = 20)	10.0%	13.3%	70.0%	6.7%	
	North West (n = 37)	19.4%	12.9%	64.5%	3.2%	
	Yorkshire and the Humber (n = 30)	9.5%	19.0%	69.0%	2.4%	
	East Midlands (n = 31)	6.1%	18.2%	69.7%	6.1%	
	West Midlands (n = 42)	10.0%	17.5%	52.5%	20.0%	
	East of England (n = 33)	11.9%	10.2%	71.2%	6.8%	
	London (n = 40)	7.7%	15.4%	69.2%	7.7%	
	South East (n = 59)	7.1%	0.0%	92.9%	0.0%	
	South West (n = 26)	20.6%	20.6%	52.9%	5.9%	
	Wales (n = 14)	12.0%	16.1%	65.3%	6.6%	
Scotland (n = 34)	14.0%	15.1%	63.1%	7.8%		

**Table 2: When your child looks at or reads stories on a touchscreen at home, how long do they usually spend doing so?**

		<i>Less than 5 minutes</i>	<i>5 to 15 minutes</i>	<i>15 to 30 minutes</i>	<i>More than 30 minutes</i>	<i>Don't know</i>
<b>Parents</b>	<b>All (N = 366)</b>	16.4%	50.3%	18.0%	10.4%	4.9%
	<b>Male (n = 179)</b>	16.8%	50.8%	17.3%	9.5%	5.6%
	<b>Female (n = 187)</b>	16.0%	49.7%	18.7%	11.2%	4.3%
	<b>18 to 30 years old (n = 61)</b>	14.8%	62.3%	9.8%	11.5%	1.6%
	<b>31 to 35 years old (n = 122)</b>	13.1%	50.8%	19.7%	11.5%	4.9%
	<b>36 to 40 years old (n = 92)</b>	20.7%	44.6%	22.8%	6.5%	5.4%
	<b>Over 40 years old (n = 91)</b>	17.6%	47.3%	16.5%	12.1%	6.6%
	<b>AB (n = 176)</b>	17.6%	51.1%	19.3%	8.0%	4.0%
	<b>C1 (n = 88)</b>	14.8%	54.5%	18.2%	6.8%	5.7%
	<b>C2 (n = 52)</b>	15.4%	51.9%	15.4%	9.6%	7.7%
	<b>DE (n = 50)</b>	16.0%	38.0%	16.0%	26.0%	4.0%
	<b>Male AB/C1 (n = 134)</b>	14.9%	52.2%	19.4%	8.2%	5.2%
	<b>Male C2/DE (n = 45)</b>	22.2%	46.7%	11.1%	13.3%	6.7%
	<b>Female AB/C1 (n = 130)</b>	18.5%	52.3%	18.5%	6.9%	3.8%
	<b>Female C2/DE (n = 57)</b>	10.5%	43.9%	19.3%	21.1%	5.3%
<b>Child</b>	<b>Male (n = 172)</b>	17.4%	48.3%	16.9%	11.6%	5.8%
	<b>Female (n = 194)</b>	15.5%	52.1%	19.1%	9.3%	4.1%
	<b>3 years old (n = 102)</b>	15.7%	52.0%	13.7%	13.7%	4.9%
	<b>4 years old (n = 149)</b>	21.5%	48.3%	18.1%	8.7%	3.4%
	<b>5 years old (n = 115)</b>	10.4%	51.3%	21.7%	9.6%	7.0%
<b>Region</b>	<b>North East (n = 20)</b>	10.0%	75.0%	10.0%	5.0%	0.0%
	<b>North West (n = 37)</b>	13.5%	54.1%	16.2%	13.5%	2.7%
	<b>Yorkshire and the Humber (n = 30)</b>	20.0%	46.7%	16.7%	6.7%	10.0%
	<b>East Midlands (n = 31)</b>	9.7%	61.3%	9.7%	19.4%	0.0%
	<b>West Midlands (n = 42)</b>	19.0%	47.6%	21.4%	11.9%	0.0%
	<b>East of England (n = 33)</b>	24.2%	36.4%	27.3%	3.0%	9.1%
	<b>London (n = 40)</b>	15.0%	50.0%	15.0%	10.0%	10.0%
	<b>South East (n = 59)</b>	18.6%	47.5%	18.6%	11.9%	3.4%
	<b>South West (n = 26)</b>	7.7%	61.5%	15.4%	3.8%	11.5%
	<b>Wales (n = 14)</b>	28.6%	42.9%	21.4%	0.0%	7.1%
	<b>Scotland (n = 34)</b>	14.7%	41.2%	23.5%	17.6%	2.9%

**Table 3: How confident do you think your child is when he or she looks at or reads stories on a touchscreen at home?**

		<i>Very confident</i>	<i>Fairly confident</i>	<i>Not very confident</i>	<i>Not at all confident</i>	<i>Don't know</i>
<b>Parents</b>	<b>All (N = 366)</b>	36.9%	49.5%	6.6%	1.1%	6.0%
	<b>Male (n = 179)</b>	36.3%	46.9%	8.4%	2.2%	6.1%
	<b>Female (n = 187)</b>	37.4%	51.9%	4.8%	0.0%	5.9%
	<b>18 to 30 years old (n = 61)</b>	31.1%	52.5%	8.2%	1.6%	6.6%
	<b>31 to 35 years old (n = 122)</b>	44.3%	41.0%	6.6%	0.8%	7.4%
	<b>36 to 40 years old (n = 92)</b>	34.8%	56.5%	4.3%	0.0%	4.3%
	<b>Over 40 years old (n = 91)</b>	33.0%	51.6%	7.7%	2.2%	5.5%
	<b>AB (n = 176)</b>	37.5%	50.6%	4.5%	1.7%	5.7%
	<b>C1 (n = 88)</b>	35.2%	48.9%	9.1%	1.1%	5.7%
	<b>C2 (n = 52)</b>	30.8%	51.9%	11.5%	0.0%	5.8%
	<b>DE (n = 50)</b>	44.0%	44.0%	4.0%	0.0%	8.0%
	<b>Male AB/C1 (n = 134)</b>	37.3%	46.3%	6.7%	3.0%	6.7%
	<b>Male C2/DE (n = 45)</b>	33.3%	48.9%	13.3%	0.0%	4.4%
	<b>Female AB/C1 (n = 130)</b>	36.2%	53.8%	5.4%	0.0%	4.6%
	<b>Female C2/DE (n = 57)</b>	40.4%	47.4%	3.5%	0.0%	8.8%
<b>Child</b>	<b>Male (n = 172)</b>	36.6%	49.4%	7.0%	.6%	6.4%
	<b>Female (n = 194)</b>	37.1%	49.5%	6.2%	1.5%	5.7%
	<b>3 years old (n = 102)</b>	42.2%	43.1%	5.9%	0.0%	8.8%
	<b>4 years old (n = 149)</b>	39.6%	45.0%	8.1%	2.0%	5.4%
	<b>5 years old (n = 115)</b>	28.7%	60.9%	5.2%	0.9%	4.3%
<b>Region</b>	<b>North East (n = 20)</b>	15.0%	75.0%	5.0%	0.0%	5.0%
	<b>North West (n = 37)</b>	32.4%	59.5%	8.1%	0.0%	0.0%
	<b>Yorkshire and the Humber (n = 30)</b>	40.0%	43.3%	3.3%	3.3%	10.0%
	<b>East Midlands (n = 31)</b>	25.8%	61.3%	6.5%	3.2%	3.2%
	<b>West Midlands (n = 42)</b>	42.9%	45.2%	9.5%	0.0%	2.4%
	<b>East of England (n = 33)</b>	45.5%	39.4%	9.1%	0.0%	6.1%
	<b>London (n = 40)</b>	37.5%	42.5%	2.5%	5.0%	12.5%
	<b>South East (n = 59)</b>	37.3%	50.8%	8.5%	0.0%	3.4%
	<b>South West (n = 26)</b>	30.8%	38.5%	11.5%	0.0%	19.2%
	<b>Wales (n = 14)</b>	50.0%	42.9%	0.0%	0.0%	7.1%
	<b>Scotland (n = 34)</b>	44.1%	50.0%	2.9%	0.0%	2.9%

**Table 4: How confident are you when you look at or read stories on a touchscreen at home with your child?**

		<i>Very confident</i>	<i>Fairly confident</i>	<i>Not very confident</i>	<i>Not at all confident</i>	<i>Don't know</i>
<b>Parents</b>	<b>All (N = 366)</b>	71.6%	23.0%	1.9%	0.0%	3.6%
	<b>Male (n = 179)</b>	69.3%	25.1%	2.2%	0.0%	3.4%
	<b>Female (n = 187)</b>	73.8%	20.9%	1.6%	0.0%	3.7%
	<b>18 to 30 years old (n = 61)</b>	73.8%	23.0%	0.0%	0.0%	3.3%
	<b>31 to 35 years old (n = 122)</b>	72.1%	23.0%	0.8%	0.0%	4.1%
	<b>36 to 40 years old (n = 92)</b>	70.7%	25.0%	2.2%	0.0%	2.2%
	<b>Over 40 years old (n = 91)</b>	70.3%	20.9%	4.4%	0.0%	4.4%
	<b>AB (n = 176)</b>	72.7%	22.2%	1.7%	0.0%	3.4%
	<b>C1 (n = 88)</b>	65.9%	30.7%	0.0%	0.0%	3.4%
	<b>C2 (n = 52)</b>	67.3%	23.1%	5.8%	0.0%	3.8%
	<b>DE (n = 50)</b>	82.0%	12.0%	2.0%	0.0%	4.0%
	<b>Male AB/C1 (n = 134)</b>	68.7%	26.1%	1.5%	0.0%	3.7%
	<b>Male C2/DE (n = 45)</b>	71.1%	22.2%	4.4%	0.0%	2.2%
	<b>Female AB/C1 (n = 130)</b>	72.3%	23.8%	0.8%	0.0%	3.1%
	<b>Female C2/DE (n = 57)</b>	77.2%	14.0%	3.5%	0.0%	5.3%
<b>Child</b>	<b>Male (n = 172)</b>	70.9%	23.3%	2.3%	0.0%	3.5%
	<b>Female (n = 194)</b>	72.2%	22.7%	1.5%	0.0%	3.6%
	<b>3 years old (n = 102)</b>	73.5%	22.5%	1.0%	0.0%	2.9%
	<b>4 years old (n = 149)</b>	71.8%	23.5%	1.3%	0.0%	3.4%
	<b>5 years old (n = 115)</b>	69.6%	22.6%	3.5%	0.0%	4.3%
<b>Region</b>	<b>North East (n = 20)</b>	70.0%	30.0%	0.0%	0.0%	0.0%
	<b>North West (n = 37)</b>	78.4%	21.6%	0.0%	0.0%	0.0%
	<b>Yorkshire and the Humber (n = 30)</b>	73.3%	20.0%	0.0%	0.0%	6.7%
	<b>East Midlands (n = 31)</b>	74.2%	19.4%	6.5%	0.0%	0.0%
	<b>West Midlands (n = 42)</b>	69.0%	28.6%	2.4%	0.0%	0.0%
	<b>East of England (n = 33)</b>	75.8%	18.2%	0.0%	0.0%	6.1%
	<b>London (n = 40)</b>	62.5%	22.5%	5.0%	0.0%	10.0%
	<b>South East (n = 59)</b>	71.2%	25.4%	1.7%	0.0%	1.7%
	<b>South West (n = 26)</b>	61.5%	26.9%	0.0%	0.0%	11.5%
	<b>Wales (n = 14)</b>	78.6%	21.4%	0.0%	0.0%	0.0%
	<b>Scotland (n = 34)</b>	76.5%	17.6%	2.9%	0.0%	2.9%

**Table 5: How much does your child enjoy looking at or reading stories on a touchscreen at home?**

		<i>Enjoy a lot</i>	<i>Enjoy a little</i>	<i>Do not enjoy much</i>	<i>Do not enjoy at all</i>	<i>Don't know</i>
<b>Parents</b>	<b>All (N = 366)</b>	68.0%	25.7%	2.5%	0.0%	3.8%
	<b>Male (n = 179)</b>	69.8%	24.0%	2.8%	0.0%	3.4%
	<b>Female (n = 187)</b>	66.3%	27.3%	2.1%	0.0%	4.3%
	<b>18 to 30 years old (n = 61)</b>	57.4%	34.4%	6.6%	0.0%	1.6%
	<b>31 to 35 years old (n = 122)</b>	68.0%	27.9%	0.8%	0.0%	3.3%
	<b>36 to 40 years old (n = 92)</b>	69.6%	23.9%	2.2%	0.0%	4.3%
	<b>Over 40 years old (n = 91)</b>	73.6%	18.7%	2.2%	0.0%	5.5%
	<b>AB (n = 176)</b>	64.8%	29.5%	1.7%	0.0%	4.0%
	<b>C1 (n = 88)</b>	67.0%	25.0%	3.4%	0.0%	4.5%
	<b>C2 (n = 52)</b>	71.2%	19.2%	5.8%	0.0%	3.8%
	<b>DE (n = 50)</b>	78.0%	20.0%	0.0%	0.0%	2.0%
	<b>Male AB/C1 (n = 134)</b>	69.4%	23.9%	2.2%	0.0%	4.5%
	<b>Male C2/DE (n = 45)</b>	71.1%	24.4%	4.4%	0.0%	0.0%
	<b>Female AB/C1 (n = 130)</b>	61.5%	32.3%	2.3%	0.0%	3.8%
<b>Female C2/DE (n = 57)</b>	77.2%	15.8%	1.8%	0.0%	5.3%	
<b>Child</b>	<b>Male (n = 172)</b>	65.5%	28.0%	2.3%	0.0%	4.2%
	<b>Female (n = 194)</b>	74.5%	19.6%	2.9%	0.0%	2.9%
	<b>3 years old (n = 102)</b>	61.0%	32.6%	2.9%	0.0%	3.5%
	<b>4 years old (n = 149)</b>	74.2%	19.6%	2.1%	0.0%	4.1%
	<b>5 years old (n = 115)</b>	72.5%	22.5%	1.0%	0.0%	3.9%
<b>Region</b>	<b>North East (n = 20)</b>	64.4%	28.2%	3.4%	0.0%	4.0%
	<b>North West (n = 37)</b>	68.7%	25.2%	2.6%	0.0%	3.5%
	<b>Yorkshire and the Humber (n = 30)</b>	45.0%	50.0%	5.0%	0.0%	0.0%
	<b>East Midlands (n = 31)</b>	59.5%	35.1%	2.7%	0.0%	2.7%
	<b>West Midlands (n = 42)</b>	66.7%	20.0%	3.3%	0.0%	10.0%
	<b>East of England (n = 33)</b>	64.5%	32.3%	3.2%	0.0%	0.0%
	<b>London (n = 40)</b>	69.0%	26.2%	2.4%	0.0%	2.4%
	<b>South East (n = 59)</b>	63.6%	24.2%	6.1%	0.0%	6.1%
	<b>South West (n = 26)</b>	72.5%	25.0%	0.0%	0.0%	2.5%
	<b>Wales (n = 14)</b>	74.6%	23.7%	0.0%	0.0%	1.7%
<b>Scotland (n = 34)</b>	73.1%	7.7%	3.8%	0.0%	15.4%	

**Table 6: How much do you enjoy looking at or reading stories on a touchscreen at home with your child?**

		<i>Enjoy a lot</i>	<i>Enjoy a little</i>	<i>Do not enjoy much</i>	<i>Do not enjoy at all</i>	<i>Don't know</i>
<b>Parents</b>	<b>All (N = 366)</b>	50.3%	38.5%	8.2%	0.0%	3.0%
	<b>Male (n = 179)</b>	52.0%	36.3%	7.8%	0.0%	3.9%
	<b>Female (n = 187)</b>	48.7%	40.6%	8.6%	0.0%	2.1%
	<b>18 to 30 years old (n = 61)</b>	44.3%	49.2%	4.9%	0.0%	1.6%
	<b>31 to 35 years old (n = 122)</b>	49.2%	40.2%	8.2%	0.0%	2.5%
	<b>36 to 40 years old (n = 92)</b>	51.1%	38.0%	9.8%	0.0%	1.1%
	<b>Over 40 years old (n = 91)</b>	54.9%	29.7%	8.8%	0.0%	6.6%
	<b>AB (n = 176)</b>	47.7%	41.7%	7.2%	0.0%	3.4%
	<b>C1 (n = 88)</b>	56.9%	30.4%	10.8%	0.0%	2.0%
	<b>C2 (n = 52)</b>	50.0%	37.3%	7.5%	0.0%	5.2%
	<b>DE (n = 50)</b>	57.8%	33.3%	8.9%	0.0%	0.0%
	<b>Male AB/C1 (n = 134)</b>	45.4%	46.2%	6.9%	0.0%	1.5%
	<b>Male C2/DE (n = 45)</b>	56.1%	28.1%	12.3%	0.0%	3.5%
	<b>Female AB/C1 (n = 130)</b>	50.6%	40.1%	7.0%	0.0%	2.3%
	<b>Female C2/DE (n = 57)</b>	50.0%	37.1%	9.3%	0.0%	3.6%
	<b>Child</b>	<b>Male (n = 172)</b>	55.9%	33.3%	6.9%	0.0%
<b>Female (n = 194)</b>		45.6%	43.0%	8.7%	0.0%	2.7%
<b>3 years old (n = 102)</b>		51.3%	37.4%	8.7%	0.0%	2.6%
<b>4 years old (n = 149)</b>		50.0%	45.0%	5.0%	0.0%	0.0%
<b>5 years old (n = 115)</b>		56.8%	32.4%	10.8%	0.0%	0.0%
<b>Region</b>	<b>North East (n = 20)</b>	53.3%	23.3%	13.3%	0.0%	10.0%
	<b>North West (n = 37)</b>	48.4%	41.9%	9.7%	0.0%	0.0%
	<b>Yorkshire and the Humber (n = 30)</b>	47.6%	42.9%	7.1%	0.0%	2.4%
	<b>East Midlands (n = 31)</b>	39.4%	51.5%	6.1%	0.0%	3.0%
	<b>West Midlands (n = 42)</b>	52.5%	35.0%	10.0%	0.0%	2.5%
	<b>East of England (n = 33)</b>	52.5%	39.0%	6.8%	0.0%	1.7%
	<b>London (n = 40)</b>	50.0%	34.6%	7.7%	0.0%	7.7%
	<b>South East (n = 59)</b>	50.0%	42.9%	7.1%	0.0%	0.0%
	<b>South West (n = 26)</b>	50.0%	38.2%	5.9%	0.0%	5.9%
	<b>Wales (n = 14)</b>	50.3%	38.5%	8.2%	0.0%	3.0%
	<b>Scotland (n = 34)</b>	52.0%	36.3%	7.8%	0.0%	3.9%

**Table 7: When looking at or sharing stories on a touchscreen with your child, which of the following, if any, do you do? (tick all that apply):**

		<i>Talk about the story with your child</i>	<i>Encourage your child to notice the pictures</i>	<i>Talk about the characters</i>	<i>Do other activities related to the story</i>	<i>Leave your child to look at stories independently</i>	<i>None of these</i>
<b>Parents</b>	<b>All (N = 366)</b>	57.1%	57.9%	55.5%	31.1%	65.6%	5.7%
	<b>Male (n = 179)</b>	53.6%	54.7%	50.8%	31.8%	61.5%	6.1%
	<b>Female (n = 187)</b>	60.4%	61.0%	59.9%	30.5%	69.5%	5.3%
	<b>18 to 30 years old (n = 61)</b>	54.1%	50.8%	47.5%	26.2%	62.3%	6.6%
	<b>31 to 35 years old (n = 122)</b>	58.2%	61.5%	59.8%	33.6%	64.8%	3.3%
	<b>36 to 40 years old (n = 92)</b>	57.6%	58.7%	56.5%	30.4%	71.7%	6.5%
	<b>Over 40 years old (n = 91)</b>	57.1%	57.1%	53.8%	31.9%	62.6%	7.7%
	<b>AB (n = 176)</b>	56.4%	56.1%	56.1%	29.9%	67.0%	6.1%
	<b>C1 (n = 88)</b>	58.8%	62.7%	53.9%	34.3%	61.8%	4.9%
	<b>C2 (n = 52)</b>	53.7%	55.2%	51.5%	30.6%	64.2%	4.5%
	<b>DE (n = 50)</b>	53.3%	53.3%	48.9%	35.6%	53.3%	11.1%
	<b>Male AB/C1 (n = 134)</b>	59.2%	56.9%	60.8%	29.2%	70.0%	7.7%
	<b>Male C2/DE (n = 45)</b>	63.2%	70.2%	57.9%	33.3%	68.4%	0.0%
	<b>Female AB/C1 (n = 130)</b>	57.6%	59.3%	55.2%	27.9%	62.2%	5.2%
	<b>Female C2/DE (n = 57)</b>	56.7%	56.7%	55.7%	34.0%	68.6%	6.2%
	<b>Child</b>	<b>Male (n = 172)</b>	57.8%	65.7%	63.7%	33.3%	64.7%
<b>Female (n = 194)</b>		55.7%	53.7%	49.7%	32.2%	71.1%	4.7%
<b>3 years old (n = 102)</b>		58.3%	56.5%	55.7%	27.8%	59.1%	8.7%
<b>4 years old (n = 149)</b>		60.0%	65.0%	70.0%	35.0%	65.0%	5.0%
<b>5 years old (n = 115)</b>		56.8%	67.6%	48.6%	29.7%	67.6%	5.4%
<b>Region</b>	<b>North East (n = 20)</b>	63.3%	56.7%	53.3%	30.0%	66.7%	13.3%
	<b>North West (n = 37)</b>	71.0%	71.0%	74.2%	32.3%	71.0%	0.0%
	<b>Yorkshire and the Humber (n = 30)</b>	47.6%	59.5%	52.4%	19.0%	64.3%	2.4%
	<b>East Midlands (n = 31)</b>	57.6%	54.5%	54.5%	39.4%	66.7%	9.1%
	<b>West Midlands (n = 42)</b>	52.5%	45.0%	52.5%	32.5%	60.0%	12.5%
	<b>East of England (n = 33)</b>	52.5%	55.9%	52.5%	23.7%	61.0%	5.1%
	<b>London (n = 40)</b>	50.0%	53.8%	46.2%	30.8%	69.2%	3.8%
	<b>South East (n = 59)</b>	64.3%	71.4%	64.3%	50.0%	64.3%	0.0%
	<b>South West (n = 26)</b>	64.7%	50.0%	55.9%	41.2%	70.6%	2.9%
	<b>Wales (n = 14)</b>	57.1%	57.9%	55.5%	31.1%	65.6%	5.7%
<b>Scotland (n = 34)</b>	53.6%	54.7%	50.8%	31.8%	61.5%	6.1%	

## Appendix 2- Parent survey: print stories N = 366

Table 8: How many days in a typical week does your child look at or read printed stories at home?

		<i>Daily in a typical a week</i>	<i>4 to 6 times in a typical week</i>	<i>1 to 3 times in a typical week</i>	<i>Don't know</i>	
<b>Parents</b>	<b>All (N = 366)</b>	60.9%	20.2%	14.8%	4.1%	
	Male (n = 179)	56.4%	22.3%	17.3%	3.9%	
	Female (n = 187)	65.2%	18.2%	12.3%	4.3%	
	18 to 30 years old (n = 61)	44.3%	29.5%	18.0%	8.2%	
	31 to 35 years old (n = 122)	63.9%	18.0%	13.9%	4.1%	
	36 to 40 years old (n = 92)	62.0%	17.4%	17.4%	3.3%	
	Over 40 years old (n = 91)	67.0%	19.8%	11.0%	2.2%	
	AB (n = 176)	65.5%	19.3%	12.1%	3.0%	
	C1 (n = 88)	49.0%	22.5%	21.6%	6.9%	
	C2 (n = 52)	64.2%	19.4%	14.2%	2.2%	
	DE (n = 50)	33.3%	31.1%	26.7%	8.9%	
	Male AB/C1 (n = 134)	66.9%	19.2%	10.0%	3.8%	
	Male C2/DE (n = 45)	61.4%	15.8%	17.5%	5.3%	
	Female AB/C1 (n = 130)	57.0%	22.7%	15.7%	4.7%	
	Female C2/DE (n = 57)	64.4%	18.0%	13.9%	3.6%	
	<b>Child</b>	Male (n = 172)	68.6%	11.8%	15.7%	3.9%
		Female (n = 194)	57.0%	21.5%	16.8%	4.7%
3 years old (n = 102)		59.1%	26.1%	11.3%	3.5%	
4 years old (n = 149)		65.0%	20.0%	15.0%	0.0%	
5 years old (n = 115)		56.8%	27.0%	16.2%	0.0%	
<b>Region</b>	North East (n = 20)	60.0%	16.7%	16.7%	6.7%	
	North West (n = 37)	54.8%	19.4%	22.6%	3.2%	
	Yorkshire and the Humber (n = 30)	57.1%	21.4%	16.7%	4.8%	
	East Midlands (n = 31)	72.7%	12.1%	9.1%	6.1%	
	West Midlands (n = 42)	40.0%	32.5%	20.0%	7.5%	
	East of England (n = 33)	66.1%	16.9%	11.9%	5.1%	
	London (n = 40)	80.8%	15.4%	0.0%	3.8%	
	South East (n = 59)	57.1%	14.3%	28.6%	0.0%	
	South West (n = 26)	64.7%	20.6%	11.8%	2.9%	
	Wales (n = 14)	60.9%	20.2%	14.8%	4.1%	
	Scotland (n = 34)	56.4%	22.3%	17.3%	3.9%	

**Table 9: When your child looks at or reads printed stories at home, how long do they usually spend doing so?**

		<i>Less than 5 minutes</i>	<i>5 to 15 minutes</i>	<i>15 to 30 minutes</i>	<i>More than 30 minutes</i>	<i>Don't know</i>
<b>Parents</b>	<b>All (N = 366)</b>	8.2%	54.1%	28.1%	5.5%	4.1%
	<b>Male (n = 179)</b>	10.1%	53.6%	25.7%	5.6%	5.0%
	<b>Female (n = 187)</b>	6.4%	54.5%	30.5%	5.3%	3.2%
	<b>18 to 30 years old (n = 61)</b>	11.5%	50.8%	26.2%	4.9%	6.6%
	<b>31 to 35 years old (n = 122)</b>	4.9%	50.0%	34.4%	5.7%	4.9%
	<b>36 to 40 years old (n = 92)</b>	8.7%	57.6%	26.1%	4.3%	3.3%
	<b>Over 40 years old (n = 91)</b>	9.9%	58.2%	23.1%	6.6%	2.2%
	<b>AB (n = 176)</b>	6.8%	57.2%	28.0%	4.9%	3.0%
	<b>C1 (n = 88)</b>	11.8%	46.1%	28.4%	6.9%	6.9%
	<b>C2 (n = 52)</b>	7.5%	58.2%	25.4%	6.0%	3.0%
	<b>DE (n = 50)</b>	17.8%	40.0%	26.7%	4.4%	11.1%
	<b>Male AB/C1 (n = 134)</b>	6.2%	56.2%	30.8%	3.8%	3.1%
	<b>Male C2/DE (n = 45)</b>	7.0%	50.9%	29.8%	8.8%	3.5%
	<b>Female AB/C1 (n = 130)</b>	7.6%	55.2%	25.6%	6.4%	5.2%
	<b>Female C2/DE (n = 57)</b>	8.8%	53.1%	30.4%	4.6%	3.1%
<b>Child</b>	<b>Male (n = 172)</b>	13.7%	60.8%	19.6%	4.9%	1.0%
	<b>Female (n = 194)</b>	9.4%	57.7%	24.2%	4.0%	4.7%
	<b>3 years old (n = 102)</b>	1.7%	43.5%	40.9%	7.8%	6.1%
	<b>4 years old (n = 149)</b>	5.0%	60.0%	35.0%	0.0%	0.0%
	<b>5 years old (n = 115)</b>	8.1%	56.8%	32.4%	2.7%	0.0%
<b>Region</b>	<b>North East (n = 20)</b>	3.3%	56.7%	30.0%	0.0%	10.0%
	<b>North West (n = 37)</b>	6.5%	48.4%	38.7%	6.5%	0.0%
	<b>Yorkshire and the Humber (n = 30)</b>	11.9%	47.6%	33.3%	4.8%	2.4%
	<b>East Midlands (n = 31)</b>	9.1%	54.5%	27.3%	6.1%	3.0%
	<b>West Midlands (n = 42)</b>	10.0%	60.0%	17.5%	5.0%	7.5%
	<b>East of England (n = 33)</b>	11.9%	57.6%	22.0%	5.1%	3.4%
	<b>London (n = 40)</b>	7.7%	61.5%	23.1%	0.0%	7.7%
	<b>South East (n = 59)</b>	7.1%	42.9%	28.6%	14.3%	7.1%
	<b>South West (n = 26)</b>	2.9%	44.1%	29.4%	17.6%	5.9%
	<b>Wales (n = 14)</b>	8.2%	54.1%	28.1%	5.5%	4.1%
	<b>Scotland (n = 34)</b>	10.1%	53.6%	25.7%	5.6%	5.0%

**Table 10: How confident do you think your child is when he or she looks at or reads printed stories at home?**

		<i>Very confident</i>	<i>Fairly confident</i>	<i>Not very confident</i>	<i>Not at all confident</i>	<i>Don't know</i>
<b>Parents</b>	<b>All (N = 366)</b>	38.8%	49.2%	6.6%	1.1%	4.4%
	<b>Male (n = 179)</b>	39.7%	46.4%	7.8%	1.1%	5.0%
	<b>Female (n = 187)</b>	38.0%	51.9%	5.3%	1.1%	3.7%
	<b>18 to 30 years old (n = 61)</b>	37.7%	45.9%	11.5%	0.0%	4.9%
	<b>31 to 35 years old (n = 122)</b>	45.9%	43.4%	4.1%	0.8%	5.7%
	<b>36 to 40 years old (n = 92)</b>	35.9%	53.3%	5.4%	1.1%	4.3%
	<b>Over 40 years old (n = 91)</b>	33.0%	54.9%	7.7%	2.2%	2.2%
	<b>AB (n = 176)</b>	41.3%	48.1%	5.7%	1.1%	3.8%
	<b>C1 (n = 88)</b>	32.4%	52.0%	8.8%	1.0%	5.9%
	<b>C2 (n = 52)</b>	42.5%	46.3%	5.2%	1.5%	4.5%
	<b>DE (n = 50)</b>	31.1%	46.7%	15.6%	0.0%	6.7%
	<b>Male AB/C1 (n = 134)</b>	40.0%	50.0%	6.2%	0.8%	3.1%
	<b>Male C2/DE (n = 45)</b>	33.3%	56.1%	3.5%	1.8%	5.3%
	<b>Female AB/C1 (n = 130)</b>	36.0%	51.7%	5.8%	1.7%	4.7%
	<b>Female C2/DE (n = 57)</b>	41.2%	46.9%	7.2%	0.5%	4.1%
	<b>Child</b>	<b>Male (n = 172)</b>	49.0%	38.2%	5.9%	2.0%
<b>Female (n = 194)</b>		41.6%	46.3%	8.1%	0.7%	3.4%
<b>3 years old (n = 102)</b>		26.1%	62.6%	5.2%	0.9%	5.2%
<b>4 years old (n = 149)</b>		25.0%	65.0%	5.0%	0.0%	5.0%
<b>5 years old (n = 115)</b>		35.1%	56.8%	8.1%	0.0%	0.0%
<b>Region</b>	<b>North East (n = 20)</b>	40.0%	46.7%	3.3%	0.0%	10.0%
	<b>North West (n = 37)</b>	38.7%	48.4%	9.7%	0.0%	3.2%
	<b>Yorkshire and the Humber (n = 30)</b>	42.9%	45.2%	9.5%	0.0%	2.4%
	<b>East Midlands (n = 31)</b>	42.4%	48.5%	3.0%	3.0%	3.0%
	<b>West Midlands (n = 42)</b>	37.5%	42.5%	5.0%	5.0%	10.0%
	<b>East of England (n = 33)</b>	44.1%	44.1%	10.2%	0.0%	1.7%
	<b>London (n = 40)</b>	30.8%	53.8%	3.8%	3.8%	7.7%
	<b>South East (n = 59)</b>	57.1%	28.6%	7.1%	0.0%	7.1%
	<b>South West (n = 26)</b>	32.4%	61.8%	2.9%	0.0%	2.9%
	<b>Wales (n = 14)</b>	38.8%	49.2%	6.6%	1.1%	4.4%
	<b>Scotland (n = 34)</b>	39.7%	46.4%	7.8%	1.1%	5.0%

**Table 11: How confident are you when you look at or read printed stories at home with your child?**

		<i>Very confident</i>	<i>Fairly confident</i>	<i>Not very confident</i>	<i>Not at all confident</i>	<i>Don't know</i>
<b>Parents</b>	<b>All (N = 366)</b>	76.0%	19.9%	1.9%	0.3%	1.9%
	<b>Male (n = 179)</b>	73.2%	20.7%	3.9%	0.6%	1.7%
	<b>Female (n = 187)</b>	78.6%	19.3%	0.0%	0.0%	2.1%
	<b>18 to 30 years old (n = 61)</b>	68.9%	24.6%	1.6%	0.0%	4.9%
	<b>31 to 35 years old (n = 122)</b>	77.9%	18.9%	0.8%	0.0%	2.5%
	<b>36 to 40 years old (n = 92)</b>	78.3%	19.6%	1.1%	0.0%	1.1%
	<b>Over 40 years old (n = 91)</b>	75.8%	18.7%	4.4%	1.1%	0.0%
	<b>AB (n = 176)</b>	75.0%	21.6%	1.5%	.4%	1.5%
	<b>C1 (n = 88)</b>	78.4%	15.7%	2.9%	0.0%	2.9%
	<b>C2 (n = 52)</b>	73.1%	21.6%	3.0%	0.7%	1.5%
	<b>DE (n = 50)</b>	73.3%	17.8%	6.7%	0.0%	2.2%
	<b>Male AB/C1 (n = 134)</b>	76.9%	21.5%	0.0%	0.0%	1.5%
	<b>Male C2/DE (n = 45)</b>	82.5%	14.0%	0.0%	0.0%	3.5%
	<b>Female AB/C1 (n = 130)</b>	75.0%	19.8%	2.9%	0.6%	1.7%
	<b>Female C2/DE (n = 57)</b>	76.8%	20.1%	1.0%	0.0%	2.1%
<b>Child</b>	<b>Male (n = 172)</b>	77.5%	20.6%	1.0%	0.0%	1.0%
	<b>Female (n = 194)</b>	75.2%	20.8%	2.7%	0.7%	0.7%
	<b>3 years old (n = 102)</b>	75.7%	18.3%	1.7%	0.0%	4.3%
	<b>4 years old (n = 149)</b>	70.0%	30.0%	0.0%	0.0%	0.0%
	<b>5 years old (n = 115)</b>	78.4%	18.9%	2.7%	0.0%	0.0%
<b>Region</b>	<b>North East (n = 20)</b>	73.3%	23.3%	0.0%	0.0%	3.3%
	<b>North West (n = 37)</b>	77.4%	16.1%	6.5%	0.0%	0.0%
	<b>Yorkshire and the Humber (n = 30)</b>	81.0%	16.7%	2.4%	0.0%	0.0%
	<b>East Midlands (n = 31)</b>	78.8%	18.2%	0.0%	0.0%	3.0%
	<b>West Midlands (n = 42)</b>	57.5%	30.0%	2.5%	2.5%	7.5%
	<b>East of England (n = 33)</b>	79.7%	16.9%	1.7%	0.0%	1.7%
	<b>London (n = 40)</b>	69.2%	26.9%	0.0%	0.0%	3.8%
	<b>South East (n = 59)</b>	78.6%	21.4%	0.0%	0.0%	0.0%
	<b>South West (n = 26)</b>	88.2%	8.8%	2.9%	0.0%	0.0%
	<b>Wales (n = 14)</b>	76.0%	19.9%	1.9%	0.3%	1.9%
	<b>Scotland (n = 34)</b>	73.2%	20.7%	3.9%	0.6%	1.7%

**Table 12: How much does your child enjoy looking at or reading printed stories at home?**

		<i>Enjoy a lot</i>	<i>Enjoy a little</i>	<i>Do not enjoy much</i>	<i>Do not enjoy at all</i>	<i>Don't know</i>
<b>Parents</b>	<b>All (N = 366)</b>	78.4%	16.9%	1.9%	0.5%	2.2%
	<b>Male (n = 179)</b>	73.2%	21.2%	2.2%	1.1%	2.2%
	<b>Female (n = 187)</b>	83.4%	12.8%	1.6%	0.0%	2.1%
	<b>18 to 30 years old (n = 61)</b>	70.5%	21.3%	4.9%	0.0%	3.3%
	<b>31 to 35 years old (n = 122)</b>	78.7%	16.4%	.8%	0.8%	3.3%
	<b>36 to 40 years old (n = 92)</b>	83.7%	13.0%	1.1%	0.0%	2.2%
	<b>Over 40 years old (n = 91)</b>	78.0%	18.7%	2.2%	1.1%	0.0%
	<b>AB (n = 176)</b>	78.8%	16.7%	1.9%	.8%	1.9%
	<b>C1 (n = 88)</b>	77.5%	17.6%	2.0%	0.0%	2.9%
	<b>C2 (n = 52)</b>	73.9%	20.1%	2.2%	1.5%	2.2%
	<b>DE (n = 50)</b>	71.1%	24.4%	2.2%	0.0%	2.2%
	<b>Male AB/C1 (n = 134)</b>	83.8%	13.1%	1.5%	0.0%	1.5%
	<b>Male C2/DE (n = 45)</b>	82.5%	12.3%	1.8%	0.0%	3.5%
	<b>Female AB/C1 (n = 130)</b>	72.1%	23.3%	1.7%	1.2%	1.7%
	<b>Female C2/DE (n = 57)</b>	84.0%	11.3%	2.1%	0.0%	2.6%
<b>Child</b>	<b>Male (n = 172)</b>	81.4%	15.7%	2.0%	0.0%	1.0%
	<b>Female (n = 194)</b>	79.2%	15.4%	2.7%	0.7%	2.0%
	<b>3 years old (n = 102)</b>	74.8%	20.0%	0.9%	0.9%	3.5%
	<b>4 years old (n = 149)</b>	60.0%	35.0%	5.0%	0.0%	0.0%
	<b>5 years old (n = 115)</b>	70.3%	24.3%	5.4%	0.0%	0.0%
<b>Region</b>	<b>North East (n = 20)</b>	73.3%	16.7%	3.3%	0.0%	6.7%
	<b>North West (n = 37)</b>	80.6%	16.1%	3.2%	0.0%	0.0%
	<b>Yorkshire and the Humber (n = 30)</b>	73.8%	23.8%	0.0%	0.0%	2.4%
	<b>East Midlands (n = 31)</b>	81.8%	9.1%	6.1%	0.0%	3.0%
	<b>West Midlands (n = 42)</b>	72.5%	20.0%	0.0%	5.0%	2.5%
	<b>East of England (n = 33)</b>	84.7%	13.6%	0.0%	0.0%	1.7%
	<b>London (n = 40)</b>	88.5%	3.8%	0.0%	0.0%	7.7%
	<b>South East (n = 59)</b>	85.7%	14.3%	0.0%	0.0%	0.0%
	<b>South West (n = 26)</b>	88.2%	11.8%	0.0%	0.0%	0.0%
	<b>Wales (n = 14)</b>	78.4%	16.9%	1.9%	0.5%	2.2%
	<b>Scotland (n = 34)</b>	73.2%	21.2%	2.2%	1.1%	2.2%

**Table 13: How much do you enjoy looking at or reading printed stories at home with your child?**

		<i>Enjoy a lot</i>	<i>Enjoy a little</i>	<i>Do not enjoy much</i>	<i>Do not enjoy at all</i>	<i>Don't know</i>
<b>Parents</b>	<b>All (N = 366)</b>	68.0%	27.9%	2.7%	0.0%	1.4%
	<b>Male (n = 179)</b>	63.1%	32.4%	3.4%	0.0%	1.1%
	<b>Female (n = 187)</b>	72.7%	23.5%	2.1%	0.0%	1.6%
	<b>18 to 30 years old (n = 61)</b>	57.4%	37.7%	1.6%	0.0%	3.3%
	<b>31 to 35 years old (n = 122)</b>	72.1%	23.8%	2.5%	0.0%	1.6%
	<b>36 to 40 years old (n = 92)</b>	71.7%	25.0%	2.2%	0.0%	1.1%
	<b>Over 40 years old (n = 91)</b>	65.9%	29.7%	4.4%	0.0%	0.0%
	<b>AB (n = 176)</b>	69.7%	27.7%	1.9%	0.0%	0.8%
	<b>C1 (n = 88)</b>	63.7%	28.4%	4.9%	0.0%	2.9%
	<b>C2 (n = 52)</b>	64.2%	32.1%	3.0%	0.0%	0.7%
	<b>DE (n = 50)</b>	60.0%	33.3%	4.4%	0.0%	2.2%
	<b>Male AB/C1 (n = 134)</b>	75.4%	23.1%	0.8%	0.0%	.8%
	<b>Male C2/DE (n = 45)</b>	66.7%	24.6%	5.3%	0.0%	3.5%
	<b>Female AB/C1 (n = 130)</b>	67.4%	29.7%	1.7%	0.0%	1.2%
	<b>Female C2/DE (n = 57)</b>	68.6%	26.3%	3.6%	0.0%	1.5%
<b>Child</b>	<b>Male (n = 172)</b>	71.6%	26.5%	2.0%	0.0%	0.0%
	<b>Female (n = 194)</b>	64.4%	32.2%	2.7%	0.0%	0.7%
	<b>3 years old (n = 102)</b>	69.6%	23.5%	3.5%	0.0%	3.5%
	<b>4 years old (n = 149)</b>	60.0%	40.0%	0.0%	0.0%	0.0%
	<b>5 years old (n = 115)</b>	67.6%	32.4%	0.0%	0.0%	0.0%
<b>Region</b>	<b>North East (n = 20)</b>	60.0%	36.7%	0.0%	0.0%	3.3%
	<b>North West (n = 37)</b>	61.3%	32.3%	6.5%	0.0%	0.0%
	<b>Yorkshire and the Humber (n = 30)</b>	69.0%	28.6%	2.4%	0.0%	0.0%
	<b>East Midlands (n = 31)</b>	66.7%	24.2%	6.1%	0.0%	3.0%
	<b>West Midlands (n = 42)</b>	60.0%	32.5%	5.0%	0.0%	2.5%
	<b>East of England (n = 33)</b>	66.1%	30.5%	1.7%	0.0%	1.7%
	<b>London (n = 40)</b>	84.6%	11.5%	0.0%	0.0%	3.8%
	<b>South East (n = 59)</b>	78.6%	21.4%	0.0%	0.0%	0.0%
	<b>South West (n = 26)</b>	82.4%	11.8%	5.9%	0.0%	0.0%
	<b>Wales (n = 14)</b>	68.0%	27.9%	2.7%	0.0%	1.4%
	<b>Scotland (n = 34)</b>	63.1%	32.4%	3.4%	0.0%	1.1%

**Table 14: When looking at or sharing printed stories with your child, which of the following, if any, do you do? (tick all that apply):**

		<i>Talk about the story with your child</i>	<i>Encourage your child to notice the pictures</i>	<i>Talk about the characters</i>	<i>Do other activities related to the story</i>	<i>Leave your child to look at stories independently</i>	<i>None of these</i>
<b>Parents</b>	<b>All (N = 366)</b>	80.1%	85.5%	79.5%	39.6%	67.5%	0.8%
	<b>Male (n = 179)</b>	76.0%	81.6%	74.3%	37.4%	62.0%	1.7%
	<b>Female (n = 187)</b>	84.0%	89.3%	84.5%	41.7%	72.7%	0.0%
	<b>18 to 30 years old (n = 61)</b>	70.5%	77.0%	72.1%	37.7%	72.1%	0.0%
	<b>31 to 35 years old (n = 122)</b>	79.5%	86.1%	81.1%	42.6%	67.2%	0.0%
	<b>36 to 40 years old (n = 92)</b>	82.6%	90.2%	80.4%	40.2%	69.6%	1.1%
	<b>Over 40 years old (n = 91)</b>	84.6%	85.7%	81.3%	36.3%	62.6%	2.2%
	<b>AB (n = 176)</b>	83.0%	88.3%	83.7%	41.7%	71.2%	0.4%
	<b>C1 (n = 88)</b>	72.5%	78.4%	68.6%	34.3%	57.8%	2.0%
	<b>C2 (n = 52)</b>	79.9%	85.1%	80.6%	39.6%	67.2%	0.7%
	<b>DE (n = 50)</b>	64.4%	71.1%	55.6%	31.1%	46.7%	4.4%
	<b>Male AB/C1 (n = 134)</b>	86.2%	91.5%	86.9%	43.8%	75.4%	0.0%
	<b>Male C2/DE (n = 45)</b>	78.9%	84.2%	78.9%	36.8%	66.7%	0.0%
	<b>Female AB/C1 (n = 130)</b>	79.1%	83.7%	80.2%	36.0%	62.8%	0.0%
	<b>Female C2/DE (n = 57)</b>	80.9%	87.1%	78.9%	42.8%	71.6%	1.5%
<b>Child</b>	<b>Male (n = 172)</b>	82.4%	92.2%	81.4%	43.1%	67.6%	0.0%
	<b>Female (n = 194)</b>	81.2%	83.2%	79.2%	40.9%	70.5%	1.3%
	<b>3 years old (n = 102)</b>	76.5%	82.6%	78.3%	34.8%	63.5%	0.9%
	<b>4 years old (n = 149)</b>	100.0%	75.0%	85.0%	30.0%	55.0%	0.0%
	<b>5 years old (n = 115)</b>	73.0%	89.2%	73.0%	32.4%	62.2%	0.0%
<b>Region</b>	<b>North East (n = 20)</b>	83.3%	76.7%	90.0%	40.0%	76.7%	0.0%
	<b>North West (n = 37)</b>	87.1%	87.1%	74.2%	45.2%	71.0%	0.0%
	<b>Yorkshire and the Humber (n = 30)</b>	71.4%	83.3%	69.0%	23.8%	54.8%	0.0%
	<b>East Midlands (n = 31)</b>	81.8%	87.9%	90.9%	51.5%	72.7%	0.0%
	<b>West Midlands (n = 42)</b>	77.5%	82.5%	77.5%	42.5%	57.5%	0.0%
	<b>East of England (n = 33)</b>	76.3%	89.8%	79.7%	39.0%	69.5%	5.1%
	<b>London (n = 40)</b>	76.9%	92.3%	80.8%	53.8%	76.9%	0.0%
	<b>South East (n = 59)</b>	78.6%	85.7%	78.6%	42.9%	78.6%	0.0%
	<b>South West (n = 26)</b>	88.2%	85.3%	82.4%	41.2%	76.5%	0.0%
	<b>Wales (n = 14)</b>	80.1%	85.5%	79.5%	39.6%	67.5%	0.8%
<b>Scotland (n = 34)</b>	76.0%	81.6%	74.3%	37.4%	62.0%	1.7%	

## Appendix 3- Practitioner survey: technology questions N = 121

Appendices 3 and 4 include only those practitioners who said yes to the question: “In a typical week do the children in your setting look at or read stories on a touchscreen device, such as a tablet computer?” N = 121

**Table 15: How many days in a typical week do you look at or read stories on a touchscreen with children in your setting?**

		<i>1 to 2 days</i>	<i>3 to 4 days</i>	<i>Daily</i>	<i>Don't do this</i>
	<b>All (N = 121)</b>	53.8%	22.7%	13.4%	10.1%
<b>Practitioner</b>	18 to 30 years old (n = 24)	50.0%	29.2%	8.3%	12.5%
	31 to 40 years old (n = 33)	45.5%	24.2%	15.2%	15.2%
	41 to 50 years old (n = 27)	61.5%	11.5%	23.1%	3.8%
	Over 51 years old (n = 18)	61.1%	22.2%	11.1%	5.6%
	Less than 5 years in practice (n = 34)	36.4%	30.3%	15.2%	18.2%
	5 to 10 years in practice (n = 24)	73.9%	13.0%	8.7%	4.3%
	11 to 20 years in practice (n = 27)	51.9%	18.5%	18.5%	11.1%
	Over 21 years in practice (n = 20)	60.0%	25.0%	15.0%	0.0%
	Entry/Mid-level qualification (n = 27)	40.0%	32.0%	16.0%	12.0%
	Graduate qualification (n = 45)	62.2%	15.6%	11.1%	11.1%
Postgraduate qualification (n = 34)	52.9%	23.5%	17.6%	5.9%	
<b>Setting</b>	PVI (n = 31)	48.3%	17.2%	20.7%	13.8%
	Maintained (n = 63)	58.7%	23.8%	11.1%	6.3%
	Social enterprise (n = 5)	0.0%	60.0%	20.0%	20.0%
	Academy (n = 11)	45.5%	18.2%	18.2%	18.2%
	Childminder (n = 10)	80.0%	20.0%	0.0%	0.0%
	Ofsted: Don't know (n = 5)	0.0%	0.0%	0.0%	0.0%
	Ofsted: Outstanding (n = 37)	40.0%	0.0%	40.0%	20.0%
	Ofsted: Good (n = 55)	52.8%	22.2%	13.9%	11.1%
	Ofsted: Satisfactory/ requires improvement/ inadequate (n = 8)	57.4%	20.4%	14.8%	7.4%
<b>Region</b>	North East (n = 6)	50.0%	37.5%	0.0%	12.5%
	North West (n = 17)	83.3%	0.0%	16.7%	0.0%
	Yorkshire and the Humber (n = 9)	70.6%	17.6%	5.9%	5.9%
	East Midlands (n = 4)	44.4%	44.4%	11.1%	0.0%
	West Midlands (n = 14)	75.0%	0.0%	25.0%	0.0%
	East of England (n = 13)	50.0%	42.9%	0.0%	7.1%
	London (n = 10)	58.3%	8.3%	25.0%	8.3%
	South East (n = 21)	40.0%	0.0%	10.0%	50.0%
	South West (n = 8)	40.0%	30.0%	25.0%	5.0%

**Table 16: Typically, how long do you spend looking at or reading stories on a touchscreen with children in your setting?**

		<i>Under 5 minutes</i>	<i>5-15 minutes</i>	<i>15-30 minutes</i>	<i>Over 30 minutes</i>	<i>Don't do this</i>
	<b>All (N = 121)</b>	13.0%	60.0%	14.0%	3.0%	10.0%
<b>Practitioner</b>	18 to 30 years old (n = 24)	25.0%	45.8%	16.7%	0.0%	12.5%
	31 to 40 years old (n = 33)	12.1%	57.6%	15.2%	0.0%	15.2%
	41 to 50 years old (n = 27)	8.0%	72.0%	4.0%	12.0%	4.0%
	Over 51 years old (n = 18)	5.6%	66.7%	22.2%	0.0%	5.6%
	Less than 5 years in practice (n = 34)	17.6%	47.1%	17.6%	0.0%	17.6%
	5 to 10 years in practice (n = 24)	8.7%	73.9%	8.7%	4.3%	4.3%
	11 to 20 years in practice (n = 27)	14.8%	55.6%	14.8%	3.7%	11.1%
	Over 21 years in practice (n = 20)	5.3%	73.7%	15.8%	5.3%	0.0%
	Entry/Mid-level qualification (n = 27)	3.8%	53.8%	23.1%	7.7%	11.5%
	Graduate qualification (n = 45)	20.5%	54.5%	11.4%	2.3%	11.4%
	Postgraduate qualification (n = 34)	14.7%	67.6%	11.8%	0.0%	5.9%
<b>Setting</b>	PVI (n = 31)	6.9%	58.6%	13.8%	6.9%	13.8%
	Maintained (n = 63)	19.4%	58.1%	12.9%	1.6%	8.1%
	Social enterprise (n = 5)	0.0%	40.0%	40.0%	0.0%	20.0%
	Academy (n = 11)	36.4%	27.3%	18.2%	0.0%	18.2%
	Childminder (n = 10)	0.0%	80.0%	20.0%	0.0%	0.0%
	Ofsted: Don't know (n = 5)	0.0%	0.0%	0.0%	0.0%	0.0%
	Ofsted: Outstanding (n = 37)	40.0%	40.0%	0.0%	0.0%	20.0%
	Ofsted: Good (n = 55)	14.3%	57.1%	11.4%	5.7%	11.4%
Ofsted: Satisfactory/ requires improvement/ inadequate (n = 8)	12.7%	63.6%	14.5%	1.8%	7.3%	
<b>Region</b>	North East (n = 6)	0.0%	62.5%	25.0%	0.0%	12.5%
	North West (n = 17)	50.0%	50.0%	0.0%	0.0%	0.0%
	Yorkshire and the Humber (n = 9)	11.8%	76.5%	0.0%	5.9%	5.9%
	East Midlands (n = 4)	0.0%	66.7%	33.3%	0.0%	0.0%
	West Midlands (n = 14)	0.0%	75.0%	25.0%	0.0%	0.0%
	East of England (n = 13)	28.6%	57.1%	7.1%	0.0%	7.1%
	London (n = 10)	15.4%	69.2%	7.7%	0.0%	7.7%
	South East (n = 21)	11.1%	33.3%	0.0%	0.0%	55.6%
	South West (n = 8)	5.0%	50.0%	30.0%	10.0%	5.0%

**Table 17: How confident do you think children in your setting are when they look at or read stories on a touchscreen?**

		<i>Very confident</i>	<i>Confident</i>	<i>Not too confident</i>	<i>Not at all confident</i>	<i>Don't know</i>
	<b>All (N = 121)</b>	29.0%	53.0%	14.0%	1.0%	3.0%
<b>Practitioner</b>	18 to 30 years old (n = 24)	25.0%	54.2%	16.7%	4.2%	0.0%
	31 to 40 years old (n = 33)	33.3%	54.5%	6.1%	0.0%	6.1%
	41 to 50 years old (n = 27)	34.6%	53.8%	11.5%	0.0%	0.0%
	Over 51 years old (n = 18)	17.6%	47.1%	29.4%	0.0%	5.9%
	Less than 5 years in practice (n = 34)	26.5%	50.0%	17.6%	2.9%	2.9%
	5 to 10 years in practice (n = 24)	34.8%	60.9%	4.3%	0.0%	0.0%
	11 to 20 years in practice (n = 27)	29.6%	55.6%	7.4%	0.0%	7.4%
	Over 21 years in practice (n = 20)	31.6%	47.4%	21.1%	0.0%	0.0%
	Entry/Mid-level qualification (n = 27)	19.2%	42.3%	30.8%	0.0%	7.7%
	Graduate qualification (n = 45)	31.8%	54.5%	9.1%	2.3%	2.3%
Postgraduate qualification (n = 34)	35.3%	55.9%	8.8%	0.0%	0.0%	
<b>Setting</b>	PVI (n = 31)	31.0%	51.7%	10.3%	0.0%	6.9%
	Maintained (n = 63)	29.3%	55.2%	13.8%	1.7%	0.0%
	Social enterprise (n = 5)	0.0%	80.0%	20.0%	0.0%	0.0%
	Academy (n = 11)	27.3%	54.5%	9.1%	0.0%	9.1%
	Childminder (n = 10)	60.0%	20.0%	20.0%	0.0%	0.0%
	Ofsted: Don't know (n = 5)	0.0%	0.0%	0.0%	0.0%	0.0%
	Ofsted: Outstanding (n = 37)	20.0%	80.0%	0.0%	0.0%	0.0%
	Ofsted: Good (n = 55)	36.1%	41.7%	16.7%	0.0%	5.6%
	Ofsted: Satisfactory/ requires improvement/ inadequate (n = 8)	25.9%	61.1%	9.3%	1.9%	1.9%
<b>Region</b>	North East (n = 6)	37.5%	25.0%	37.5%	0.0%	0.0%
	North West (n = 17)	0.0%	50.0%	50.0%	0.0%	0.0%
	Yorkshire and the Humber (n = 9)	11.8%	82.4%	0.0%	0.0%	5.9%
	East Midlands (n = 4)	22.2%	44.4%	33.3%	0.0%	0.0%
	West Midlands (n = 14)	25.0%	75.0%	0.0%	0.0%	0.0%
	East of England (n = 13)	21.4%	64.3%	14.3%	0.0%	0.0%
	London (n = 10)	38.5%	46.2%	15.4%	0.0%	0.0%
	South East (n = 21)	30.0%	30.0%	10.0%	10.0%	20.0%
	South West (n = 8)	47.4%	47.4%	5.3%	0.0%	0.0%

**Table 18: How confident are you when you look at or read stories on a touchscreen with children in your setting?**

		<i>Very confident</i>	<i>Confident</i>	<i>Not too confident</i>	<i>Not at all confident</i>	<i>Don't know</i>
	<b>All (N = 121)</b>	51.5%	38.6%	6.9%	1.0%	2.0%
<b>Practitioner</b>	18 to 30 years old (n = 24)	50.0%	33.3%	12.5%	4.2%	0.0%
	31 to 40 years old (n = 33)	48.5%	45.5%	3.0%	0.0%	3.0%
	41 to 50 years old (n = 27)	53.8%	34.6%	11.5%	0.0%	0.0%
	Over 51 years old (n = 18)	55.6%	38.9%	0.0%	0.0%	5.6%
	Less than 5 years in practice (n = 34)	52.9%	35.3%	8.8%	2.9%	0.0%
	5 to 10 years in practice (n = 24)	39.1%	52.2%	4.3%	0.0%	4.3%
	11 to 20 years in practice (n = 27)	63.0%	33.3%	0.0%	0.0%	3.7%
	Over 21 years in practice (n = 20)	45.0%	40.0%	15.0%	0.0%	0.0%
	Entry/Mid-level qualification (n = 27)	34.6%	42.3%	15.4%	0.0%	7.7%
	Graduate qualification (n = 45)	60.0%	33.3%	4.4%	2.2%	0.0%
	Postgraduate qualification (n = 34)	54.5%	42.4%	3.0%	0.0%	0.0%
<b>Setting</b>	PVI (n = 31)	55.2%	37.9%	3.4%	0.0%	3.4%
	Maintained (n = 63)	56.9%	32.8%	8.6%	1.7%	0.0%
	Social enterprise (n = 5)	20.0%	80.0%	0.0%	0.0%	0.0%
	Academy (n = 11)	45.5%	36.4%	9.1%	0.0%	9.1%
	Childminder (n = 10)	50.0%	50.0%	0.0%	0.0%	0.0%
	Ofsted: Don't know (n = 5)	0.0%	0.0%	0.0%	0.0%	0.0%
	Ofsted: Outstanding (n = 37)	60.0%	40.0%	0.0%	0.0%	0.0%
	Ofsted: Good (n = 55)	57.1%	28.6%	11.4%	0.0%	2.9%
	Ofsted: Satisfactory/ requires improvement/ inadequate (n = 8)	52.7%	43.6%	0.0%	1.8%	1.8%
<b>Region</b>	North East (n = 6)	25.0%	50.0%	25.0%	0.0%	0.0%
	North West (n = 17)	80.0%	20.0%	0.0%	0.0%	0.0%
	Yorkshire and the Humber (n = 9)	47.1%	47.1%	5.9%	0.0%	0.0%
	East Midlands (n = 4)	33.3%	44.4%	22.2%	0.0%	0.0%
	West Midlands (n = 14)	100.0%	0.0%	0.0%	0.0%	0.0%
	East of England (n = 13)	64.3%	35.7%	0.0%	0.0%	0.0%
	London (n = 10)	30.8%	53.8%	15.4%	0.0%	0.0%
	South East (n = 21)	30.0%	40.0%	10.0%	10.0%	10.0%
	South West (n = 8)	60.0%	40.0%	0.0%	0.0%	0.0%

**Table 19: How much do children in your setting enjoy looking at or reading stories on a touchscreen?**

		<i>Enjoy a lot</i>	<i>Enjoy a little</i>	<i>Do not enjoy much</i>	<i>Do not enjoy at all</i>	<i>Don't know</i>
	<b>All (N = 121)</b>	77.6%	14.3%	4.1%	1.0%	3.1%
<b>Practitioner</b>	18 to 30 years old (n = 24)	66.7%	16.7%	12.5%	4.2%	0.0%
	31 to 40 years old (n = 33)	77.4%	12.9%	3.2%	0.0%	6.5%
	41 to 50 years old (n = 27)	84.0%	16.0%	0.0%	0.0%	0.0%
	Over 51 years old (n = 18)	83.3%	11.1%	0.0%	0.0%	5.6%
	Less than 5 years in practice (n = 34)	60.6%	24.2%	9.1%	3.0%	3.0%
	5 to 10 years in practice (n = 24)	86.4%	13.6%	0.0%	0.0%	0.0%
	11 to 20 years in practice (n = 27)	84.6%	3.8%	3.8%	0.0%	7.7%
	Over 21 years in practice (n = 20)	85.0%	15.0%	0.0%	0.0%	0.0%
	Entry/Mid-level qualification (n = 27)	53.8%	26.9%	11.5%	0.0%	7.7%
	Graduate qualification (n = 45)	84.1%	13.6%	0.0%	2.3%	0.0%
Postgraduate qualification (n = 34)	84.4%	6.3%	3.1%	0.0%	6.3%	
<b>Setting</b>	PVI (n = 31)	81.5%	14.8%	0.0%	0.0%	3.7%
	Maintained (n = 63)	75.0%	14.3%	7.1%	1.8%	1.8%
	Social enterprise (n = 5)	80.0%	20.0%	0.0%	0.0%	0.0%
	Academy (n = 11)	72.7%	9.1%	0.0%	0.0%	18.2%
	Childminder (n = 10)	70.0%	30.0%	0.0%	0.0%	0.0%
	Ofsted: Don't know (n = 5)	0.0%	0.0%	0.0%	0.0%	0.0%
	Ofsted: Outstanding (n = 37)	100.0%	0.0%	0.0%	0.0%	0.0%
	Ofsted: Good (n = 55)	80.6%	13.9%	0.0%	0.0%	5.6%
Ofsted: Satisfactory/ requires improvement/ inadequate (n = 8)	77.4%	17.0%	1.9%	1.9%	1.9%	
<b>Region</b>	North East (n = 6)	57.1%	0.0%	28.6%	0.0%	14.3%
	North West (n = 17)	66.7%	16.7%	0.0%	0.0%	16.7%
	Yorkshire and the Humber (n = 9)	87.5%	6.3%	0.0%	0.0%	6.3%
	East Midlands (n = 4)	66.7%	11.1%	22.2%	0.0%	0.0%
	West Midlands (n = 14)	75.0%	25.0%	0.0%	0.0%	0.0%
	East of England (n = 13)	78.6%	14.3%	7.1%	0.0%	0.0%
	London (n = 10)	76.9%	23.1%	0.0%	0.0%	0.0%
	South East (n = 21)	50.0%	20.0%	0.0%	10.0%	20.0%
	South West (n = 8)	89.5%	10.5%	0.0%	0.0%	0.0%

**Table 20: How much do you enjoy looking at or reading stories on a touchscreen with children in your setting?**

		<i>Enjoy a lot</i>	<i>Enjoy a little</i>	<i>Do not enjoy much</i>	<i>Do not enjoy at all</i>	<i>Don't know</i>
	<b>All (N = 121)</b>	48.5%	37.4%	9.1%	1.0%	4.0%
<b>Practitioner</b>	18 to 30 years old (n = 24)	33.3%	45.8%	16.7%	4.2%	0.0%
	31 to 40 years old (n = 33)	46.9%	37.5%	6.3%	0.0%	9.4%
	41 to 50 years old (n = 27)	56.0%	32.0%	12.0%	0.0%	0.0%
	Over 51 years old (n = 18)	61.1%	33.3%	0.0%	0.0%	5.6%
	Less than 5 years in practice (n = 34)	48.5%	33.3%	12.1%	3.0%	3.0%
	5 to 10 years in practice (n = 24)	39.1%	43.5%	13.0%	0.0%	4.3%
	11 to 20 years in practice (n = 27)	50.0%	38.5%	3.8%	0.0%	7.7%
	Over 21 years in practice (n = 20)	55.0%	40.0%	5.0%	0.0%	0.0%
	Entry/Mid-level qualification (n = 27)	34.6%	38.5%	15.4%	0.0%	11.5%
	Graduate qualification (n = 45)	54.5%	36.4%	6.8%	2.3%	0.0%
Postgraduate qualification (n = 34)	51.5%	36.4%	6.1%	0.0%	6.1%	
<b>Setting</b>	PVI (n = 31)	37.0%	44.4%	11.1%	0.0%	7.4%
	Maintained (n = 63)	59.6%	26.3%	10.5%	1.8%	1.8%
	Social enterprise (n = 5)	60.0%	40.0%	0.0%	0.0%	0.0%
	Academy (n = 11)	9.1%	72.7%	0.0%	0.0%	18.2%
	Childminder (n = 10)	40.0%	50.0%	10.0%	0.0%	0.0%
	Ofsted: Don't know (n = 5)	0.0%	0.0%	0.0%	0.0%	0.0%
	Ofsted: Outstanding (n = 37)	20.0%	80.0%	0.0%	0.0%	0.0%
	Ofsted: Good (n = 55)	44.4%	41.7%	8.3%	0.0%	5.6%
Ofsted: Satisfactory/ requires improvement/ inadequate (n = 8)	56.6%	34.0%	3.8%	1.9%	3.8%	
<b>Region</b>	North East (n = 6)	37.5%	12.5%	37.5%	0.0%	12.5%
	North West (n = 17)	33.3%	50.0%	0.0%	0.0%	16.7%
	Yorkshire and the Humber (n = 9)	56.3%	31.3%	6.3%	0.0%	6.3%
	East Midlands (n = 4)	55.6%	22.2%	22.2%	0.0%	0.0%
	West Midlands (n = 14)	25.0%	50.0%	25.0%	0.0%	0.0%
	East of England (n = 13)	42.9%	50.0%	7.1%	0.0%	0.0%
	London (n = 10)	23.1%	69.2%	7.7%	0.0%	0.0%
	South East (n = 21)	30.0%	20.0%	20.0%	10.0%	20.0%
	South West (n = 8)	68.4%	31.6%	0.0%	0.0%	0.0%

## Appendix 4 - Practitioner survey: print questions N = 121

Table 21: How many days in a typical week do you look at or read printed stories with children in your setting?

		1 to 2 days	3 to 4 days	Daily	Don't do this
	<b>All (N = 121)</b>	9.8%	11.8%	78.4%	0.0%
<b>Practitioner</b>	18 to 30 years old (n = 24)	8.3%	16.7%	75.0%	0.0%
	31 to 40 years old (n = 33)	9.1%	9.1%	81.8%	0.0%
	41 to 50 years old (n = 27)	11.1%	11.1%	77.8%	0.0%
	Over 51 years old (n = 18)	11.1%	11.1%	77.8%	0.0%
	Less than 5 years in practice (n = 34)	8.8%	17.6%	73.5%	0.0%
	5 to 10 years in practice (n = 24)	8.3%	8.3%	83.3%	0.0%
	11 to 20 years in practice (n = 27)	11.1%	11.1%	77.8%	0.0%
	Over 21 years in practice (n = 20)	10.0%	10.0%	80.0%	0.0%
	Entry/Mid-level qualification (n = 27)	7.4%	29.6%	63.0%	0.0%
	Graduate qualification (n = 45)	8.9%	8.9%	82.2%	0.0%
	Postgraduate qualification (n = 34)	11.8%	5.9%	82.4%	0.0%
<b>Setting</b>	PVI (n = 31)	6.5%	22.6%	71.0%	0.0%
	Maintained (n = 63)	7.9%	17.5%	74.6%	0.0%
	Social enterprise (n = 5)	20.0%	0.0%	80.0%	0.0%
	Academy (n = 11)	0.0%	9.1%	90.9%	0.0%
	Childminder (n = 10)	20.0%	0.0%	80.0%	0.0%
	Ofsted: Don't know (n = 5)	0.0%	0.0%	0.0%	0.0%
	Ofsted: Outstanding (n = 37)	40.0%	0.0%	60.0%	0.0%
	Ofsted: Good (n = 55)	8.1%	8.1%	83.8%	0.0%
Ofsted: Satisfactory/ requires improvement/ inadequate (n = 8)	9.1%	12.7%	78.2%	0.0%	
<b>Region</b>	North East (n = 6)	0.0%	25.0%	75.0%	0.0%
	North West (n = 17)	0.0%	16.7%	83.3%	0.0%
	Yorkshire and the Humber (n = 9)	11.8%	11.8%	76.5%	0.0%
	East Midlands (n = 4)	11.1%	22.2%	66.7%	0.0%
	West Midlands (n = 14)	25.0%	0.0%	75.0%	0.0%
	East of England (n = 13)	7.1%	7.1%	85.7%	0.0%
	London (n = 10)	7.7%	7.7%	84.6%	0.0%
	South East (n = 21)	20.0%	10.0%	70.0%	0.0%
	South West (n = 8)	4.8%	19.0%	76.2%	0.0%

**Table 22: Typically, how long do you spend looking at or reading printed stories with children in your setting?**

		<i>Under 5 minutes</i>	<i>5-15 minutes</i>	<i>15-30 minutes</i>	<i>Over 30 minutes</i>	<i>Don't do this</i>
	<b>All (N = 121)</b>	0.0%	56.9%	24.5%	18.6%	0.0%
<b>Practitioner</b>	18 to 30 years old (n = 24)	0.0%	70.8%	12.5%	16.7%	0.0%
	31 to 40 years old (n = 33)	0.0%	54.5%	24.2%	21.2%	0.0%
	41 to 50 years old (n = 27)	0.0%	55.6%	22.2%	22.2%	0.0%
	Over 51 years old (n = 18)	0.0%	44.4%	44.4%	11.1%	0.0%
	Less than 5 years in practice (n = 34)	0.0%	70.6%	14.7%	14.7%	0.0%
	5 to 10 years in practice (n = 24)	0.0%	41.7%	33.3%	25.0%	0.0%
	11 to 20 years in practice (n = 27)	0.0%	59.3%	18.5%	22.2%	0.0%
	Over 21 years in practice (n = 20)	0.0%	45.0%	40.0%	15.0%	0.0%
	Entry/Mid-level qualification (n = 27)	0.0%	63.0%	22.2%	14.8%	0.0%
	Graduate qualification (n = 45)	0.0%	57.8%	20.0%	22.2%	0.0%
Postgraduate qualification (n = 34)	0.0%	50.0%	32.4%	17.6%	0.0%	
<b>Setting</b>	PVI (n = 31)	0.0%	60.0%	16.7%	23.3%	0.0%
	Maintained (n = 63)	0.0%	63.5%	27.0%	9.5%	0.0%
	Social enterprise (n = 5)	0.0%	60.0%	20.0%	20.0%	0.0%
	Academy (n = 11)	0.0%	45.5%	27.3%	27.3%	0.0%
	Childminder (n = 10)	0.0%	30.0%	30.0%	40.0%	0.0%
	Ofsted: Don't know (n = 5)	0.0%	0.0%	0.0%	0.0%	0.0%
	Ofsted: Outstanding (n = 37)	0.0%	80.0%	0.0%	20.0%	0.0%
	Ofsted: Good (n = 55)	0.0%	59.5%	18.9%	21.6%	0.0%
Ofsted: Satisfactory/ requires improvement/ inadequate (n = 8)	0.0%	52.7%	29.1%	18.2%	0.0%	
<b>Region</b>	North East (n = 6)	0.0%	62.5%	25.0%	12.5%	0.0%
	North West (n = 17)	0.0%	66.7%	16.7%	16.7%	0.0%
	Yorkshire and the Humber (n = 9)	0.0%	58.8%	29.4%	11.8%	0.0%
	East Midlands (n = 4)	0.0%	77.8%	22.2%	0.0%	0.0%
	West Midlands (n = 14)	0.0%	50.0%	50.0%	0.0%	0.0%
	East of England (n = 13)	0.0%	57.1%	21.4%	21.4%	0.0%
	London (n = 10)	0.0%	46.2%	23.1%	30.8%	0.0%
	South East (n = 21)	0.0%	60.0%	20.0%	20.0%	0.0%
	South West (n = 8)	0.0%	66.7%	14.3%	19.0%	0.0%

**Table 23: How confident do you think children in your setting are when they look at or read printed stories?**

		<i>Very confident</i>	<i>Confident</i>	<i>Not too confident</i>	<i>Not at all confident</i>	<i>Don't know</i>
	<b>All (N = 121)</b>	38.6%	58.4%	3.0%	0.0%	0.0%
<b>Practitioner</b>	18 to 30 years old (n = 24)	25.0%	75.0%	0.0%	0.0%	0.0%
	31 to 40 years old (n = 33)	48.5%	48.5%	3.0%	0.0%	0.0%
	41 to 50 years old (n = 27)	42.3%	57.7%	0.0%	0.0%	0.0%
	Over 51 years old (n = 18)	33.3%	55.6%	11.1%	0.0%	0.0%
	Less than 5 years in practice (n = 34)	30.3%	66.7%	3.0%	0.0%	0.0%
	5 to 10 years in practice (n = 24)	45.8%	54.2%	0.0%	0.0%	0.0%
	11 to 20 years in practice (n = 27)	40.7%	51.9%	7.4%	0.0%	0.0%
	Over 21 years in practice (n = 20)	45.0%	55.0%	0.0%	0.0%	0.0%
	Entry/Mid-level qualification (n = 27)	53.8%	38.5%	7.7%	0.0%	0.0%
	Graduate qualification (n = 45)	35.6%	62.2%	2.2%	0.0%	0.0%
Postgraduate qualification (n = 34)	32.4%	67.6%	0.0%	0.0%	0.0%	
<b>Setting</b>	PVI (n = 31)	58.6%	41.4%	0.0%	0.0%	0.0%
	Maintained (n = 63)	27.1%	72.9%	0.0%	0.0%	0.0%
	Social enterprise (n = 5)	60.0%	20.0%	20.0%	0.0%	0.0%
	Academy (n = 11)	18.2%	63.6%	18.2%	0.0%	0.0%
	Childminder (n = 10)	70.0%	30.0%	0.0%	0.0%	0.0%
	Ofsted: Don't know (n = 5)	0.0%	0.0%	0.0%	0.0%	0.0%
	Ofsted: Outstanding (n = 37)	40.0%	60.0%	0.0%	0.0%	0.0%
	Ofsted: Good (n = 55)	45.9%	48.6%	5.4%	0.0%	0.0%
Ofsted: Satisfactory/ requires improvement/ inadequate (n = 8)	35.2%	63.0%	1.9%	0.0%	0.0%	
<b>Region</b>	North East (n = 6)	37.5%	62.5%	0.0%	0.0%	0.0%
	North West (n = 17)	16.7%	83.3%	0.0%	0.0%	0.0%
	Yorkshire and the Humber (n = 9)	17.6%	82.4%	0.0%	0.0%	0.0%
	East Midlands (n = 4)	44.4%	55.6%	0.0%	0.0%	0.0%
	West Midlands (n = 14)	25.0%	50.0%	25.0%	0.0%	0.0%
	East of England (n = 13)	35.7%	64.3%	0.0%	0.0%	0.0%
	London (n = 10)	41.7%	50.0%	8.3%	0.0%	0.0%
	South East (n = 21)	40.0%	50.0%	10.0%	0.0%	0.0%
	South West (n = 8)	57.1%	42.9%	0.0%	0.0%	0.0%

**Table 24: How confident are you when you look at or read printed stories with children in your setting?**

		<i>Very confident</i>	<i>Confident</i>	<i>Not too confident</i>	<i>Not at all confident</i>	<i>Don't know</i>
	<b>All (N = 121)</b>	82.4%	17.6%	0.0%	0.0%	0.0%
<b>Practitioner</b>	18 to 30 years old (n = 24)	66.7%	33.3%	0.0%	0.0%	0.0%
	31 to 40 years old (n = 33)	84.8%	15.2%	0.0%	0.0%	0.0%
	41 to 50 years old (n = 27)	85.2%	14.8%	0.0%	0.0%	0.0%
	Over 51 years old (n = 18)	94.4%	5.6%	0.0%	0.0%	0.0%
	Less than 5 years in practice (n = 34)	67.6%	32.4%	0.0%	0.0%	0.0%
	5 to 10 years in practice (n = 24)	87.5%	12.5%	0.0%	0.0%	0.0%
	11 to 20 years in practice (n = 27)	88.9%	11.1%	0.0%	0.0%	0.0%
	Over 21 years in practice (n = 20)	90.0%	10.0%	0.0%	0.0%	0.0%
	Entry/Mid-level qualification (n = 27)	74.1%	25.9%	0.0%	0.0%	0.0%
	Graduate qualification (n = 45)	84.4%	15.6%	0.0%	0.0%	0.0%
Postgraduate qualification (n = 34)	85.3%	14.7%	0.0%	0.0%	0.0%	
<b>Setting</b>	PVI (n = 31)	90.0%	10.0%	0.0%	0.0%	0.0%
	Maintained (n = 63)	74.6%	25.4%	0.0%	0.0%	0.0%
	Social enterprise (n = 5)	80.0%	20.0%	0.0%	0.0%	0.0%
	Academy (n = 11)	90.9%	9.1%	0.0%	0.0%	0.0%
	Childminder (n = 10)	90.0%	10.0%	0.0%	0.0%	0.0%
	Ofsted: Don't know (n = 5)	0.0%	0.0%	0.0%	0.0%	0.0%
	Ofsted: Outstanding (n = 37)	80.0%	20.0%	0.0%	0.0%	0.0%
	Ofsted: Good (n = 55)	89.2%	10.8%	0.0%	0.0%	0.0%
	Ofsted: Satisfactory/ requires improvement/ inadequate (n = 8)	80.0%	20.0%	0.0%	0.0%	0.0%
<b>Region</b>	North East (n = 6)	75.0%	25.0%	0.0%	0.0%	0.0%
	North West (n = 17)	100.0%	0.0%	0.0%	0.0%	0.0%
	Yorkshire and the Humber (n = 9)	64.7%	35.3%	0.0%	0.0%	0.0%
	East Midlands (n = 4)	66.7%	33.3%	0.0%	0.0%	0.0%
	West Midlands (n = 14)	100.0%	0.0%	0.0%	0.0%	0.0%
	East of England (n = 13)	92.9%	7.1%	0.0%	0.0%	0.0%
	London (n = 10)	76.9%	23.1%	0.0%	0.0%	0.0%
	South East (n = 21)	90.0%	10.0%	0.0%	0.0%	0.0%
	South West (n = 8)	85.7%	14.3%	0.0%	0.0%	0.0%

**Table 25: How much do children in your setting enjoy looking at or reading printed stories?**

		<i>Enjoy a lot</i>	<i>Enjoy a little</i>	<i>Do not enjoy much</i>	<i>Do not enjoy at all</i>	<i>Don't know</i>
	<b>All (N = 121)</b>	88.8%	11.2%	0.0%	0.0%	0.0%
<b>Practitioner</b>	18 to 30 years old (n = 24)	70.8%	29.2%	0.0%	0.0%	0.0%
	31 to 40 years old (n = 33)	93.8%	6.3%	0.0%	0.0%	0.0%
	41 to 50 years old (n = 27)	100.0%	0.0%	0.0%	0.0%	0.0%
	Over 51 years old (n = 18)	88.9%	11.1%	0.0%	0.0%	0.0%
	Less than 5 years in practice (n = 34)	72.7%	27.3%	0.0%	0.0%	0.0%
	5 to 10 years in practice (n = 24)	100.0%	0.0%	0.0%	0.0%	0.0%
	11 to 20 years in practice (n = 27)	88.5%	11.5%	0.0%	0.0%	0.0%
	Over 21 years in practice (n = 20)	100.0%	0.0%	0.0%	0.0%	0.0%
	Entry/Mid-level qualification (n = 27)	76.9%	23.1%	0.0%	0.0%	0.0%
	Graduate qualification (n = 45)	90.9%	9.1%	0.0%	0.0%	0.0%
	Postgraduate qualification (n = 34)	93.8%	6.3%	0.0%	0.0%	0.0%
<b>Setting</b>	PVI (n = 31)	96.3%	3.7%	0.0%	0.0%	0.0%
	Maintained (n = 63)	83.9%	16.1%	0.0%	0.0%	0.0%
	Social enterprise (n = 5)	80.0%	20.0%	0.0%	0.0%	0.0%
	Academy (n = 11)	81.8%	18.2%	0.0%	0.0%	0.0%
	Childminder (n = 10)	100.0%	0.0%	0.0%	0.0%	0.0%
	Ofsted: Don't know (n = 5)	0.0%	0.0%	0.0%	0.0%	0.0%
	Ofsted: Outstanding (n = 37)	80.0%	20.0%	0.0%	0.0%	0.0%
	Ofsted: Good (n = 55)	88.9%	11.1%	0.0%	0.0%	0.0%
	Ofsted: Satisfactory/ requires improvement/ inadequate (n = 8)	92.3%	7.7%	0.0%	0.0%	0.0%
<b>Region</b>	North East (n = 6)	75.0%	25.0%	0.0%	0.0%	0.0%
	North West (n = 17)	100.0%	0.0%	0.0%	0.0%	0.0%
	Yorkshire and the Humber (n = 9)	93.8%	6.3%	0.0%	0.0%	0.0%
	East Midlands (n = 4)	66.7%	33.3%	0.0%	0.0%	0.0%
	West Midlands (n = 14)	75.0%	25.0%	0.0%	0.0%	0.0%
	East of England (n = 13)	92.3%	7.7%	0.0%	0.0%	0.0%
	London (n = 10)	84.6%	15.4%	0.0%	0.0%	0.0%
	South East (n = 21)	90.0%	10.0%	0.0%	0.0%	0.0%
	South West (n = 8)	89.5%	10.5%	0.0%	0.0%	0.0%

**Table 26: How much do you enjoy looking at or reading printed stories with children in your setting?**

		<i>Enjoy a lot</i>	<i>Enjoy a little</i>	<i>Do not enjoy much</i>	<i>Do not enjoy at all</i>	<i>Don't know</i>
	<b>All (N = 121)</b>	94.9%	5.1%	0.0%	0.0%	0.0%
<b>Practitioner</b>	18 to 30 years old (n = 24)	87.5%	12.5%	0.0%	0.0%	0.0%
	31 to 40 years old (n = 33)	96.9%	3.1%	0.0%	0.0%	0.0%
	41 to 50 years old (n = 27)	96.0%	4.0%	0.0%	0.0%	0.0%
	Over 51 years old (n = 18)	100.0%	0.0%	0.0%	0.0%	0.0%
	Less than 5 years in practice (n = 34)	81.8%	18.2%	0.0%	0.0%	0.0%
	5 to 10 years in practice (n = 24)	100.0%	0.0%	0.0%	0.0%	0.0%
	11 to 20 years in practice (n = 27)	100.0%	0.0%	0.0%	0.0%	0.0%
	Over 21 years in practice (n = 20)	100.0%	0.0%	0.0%	0.0%	0.0%
	Entry/Mid-level qualification (n = 27)	76.9%	23.1%	0.0%	0.0%	0.0%
	Graduate qualification (n = 45)	100.0%	0.0%	0.0%	0.0%	0.0%
	Postgraduate qualification (n = 34)	100.0%	0.0%	0.0%	0.0%	0.0%
<b>Setting</b>	PVI (n = 31)	92.6%	7.4%	0.0%	0.0%	0.0%
	Maintained (n = 63)	93.0%	7.0%	0.0%	0.0%	0.0%
	Social enterprise (n = 5)	80.0%	20.0%	0.0%	0.0%	0.0%
	Academy (n = 11)	100.0%	0.0%	0.0%	0.0%	0.0%
	Childminder (n = 10)	100.0%	0.0%	0.0%	0.0%	0.0%
	Ofsted: Don't know (n = 5)	0.0%	0.0%	0.0%	0.0%	0.0%
	Ofsted: Outstanding (n = 37)	100.0%	0.0%	0.0%	0.0%	0.0%
	Ofsted: Good (n = 55)	97.2%	2.8%	0.0%	0.0%	0.0%
	Ofsted: Satisfactory/ requires improvement/ inadequate (n = 8)	96.2%	3.8%	0.0%	0.0%	0.0%
<b>Region</b>	North East (n = 6)	75.0%	25.0%	0.0%	0.0%	0.0%
	North West (n = 17)	100.0%	0.0%	0.0%	0.0%	0.0%
	Yorkshire and the Humber (n = 9)	100.0%	0.0%	0.0%	0.0%	0.0%
	East Midlands (n = 4)	77.8%	22.2%	0.0%	0.0%	0.0%
	West Midlands (n = 14)	100.0%	0.0%	0.0%	0.0%	0.0%
	East of England (n = 13)	100.0%	0.0%	0.0%	0.0%	0.0%
	London (n = 10)	76.9%	23.1%	0.0%	0.0%	0.0%
	South East (n = 21)	100.0%	0.0%	0.0%	0.0%	0.0%
	South West (n = 8)	94.7%	5.3%	0.0%	0.0%	0.0%