

Early Childhood Unit, National Children's Bureau

Digital literacy and numeracy – the views of parents and practitioners

Introduction

This report summarises the views and experiences of parents and practitioners from Peterborough and Sandwell regarding the significance and importance of digital technology in young children's lives and how it can support literacy, mathematics and other areas of learning.

Two workshops were held at East Community Pre-school in Peterborough and St Hubert's Pre-School in Sandwell. 25 parents were involved in the 90-minute participatory workshops where they shared their opinions and stories. In Peterborough this was followed up with a series of 4 practitioner semi-structured interviews. Evidence was also taken from a further 4 practitioners.

Objectives

- To discover what parents are doing already with children in terms of digital devices and technology
- To identify what parents and practitioners feel about the use of digital media and technology
- To gather messages about the use of digital literacy and numeracy with young children

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The parents had experience of children from birth to 5 and were also able to contrast their experiences with older siblings and children from wider family networks.

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The report is structured as follows:

- A summary of key messages from parents
- A summary of key messages from practitioners
- Parents, children and digital technology – in depth
- Parents' views on how digital technology supports learning
- Parents' views of the challenges and risks
- Practitioners' views on how their settings use technology and digital media
- Practitioners' views of the challenges and risks
- Conclusions
- Recommendations
- An Appendix outlining the methodology and delivery plan for the parent workshop and practitioner interviews

There was a strong correlation between the views and experiences of parents in both locations.

A summary of key messages from parents

- There are many examples of digital technology in the home and when out and about that interest children. As well as more obvious types of technology, such as mobile phones, parents and children are aware of the digital technology embedded in everyday devices such as microwave ovens, washing machines, bus and train signs and cash machines.
- Parents feel that digital technology can support their child's learning and development. However, they also feel that other activities, materials and play are also just as important for learning.
- The overarching message from parents was that it is important to create a **balance** in a child's life between the uses of technology and more traditional learning, play and social interactions. Parents are regularly testing out where this balance lays in a practical sense. They have a high awareness of getting it right for their child and avoiding any risks or pitfalls of too much technology in a young child's life.
- Parent-to-parent support and sharing is important because it enables parents to recognise and value each other's experience and realise 'they are not alone'. It is also valuable as parents have lots of expertise and information about technology to share – this was evidenced during the workshop when a variety of parents shared new information about apps, activities and local community services that other parents found helpful.
- Most children have opportunities to access mobile phone based apps and are very interested in these. Children enjoy using apps but parents feel it is important to manage and limit the length and frequency of use.

- Good apps can provide additional advantages for children’s learning as they combine different forms of media in one place – words, numbers, sounds, songs, video and touch-based activities that support motor skills.
- Children are interested in all kinds of objects and materials in the home and when out and about. They don’t distinguish between digital technology and other types of objects when choosing something to play with – rather they play with the thing that interests them the most at the time. Parents feel that for young children, the concept of digital technology is abstract and artificial.
- Digital technology offers lots of ways to support families who speak English as an additional language. This includes using translation apps, websites, online dictionaries, digital photos and scans.
- Many families use online networking such as Skype, FaceTime and other tools to regularly interact with extended family members. This often includes grandparents and other family members in other countries. Young children are involved in these activities from an early age and develop familiarity with the technology and build family relationships via a screen.
- Without explicitly referencing the ORIM framework, parents frequently framed their uses of technology in terms of the opportunities it provides for their children’s learning. They were also very aware of the importance of modelling the appropriate use of technology.
- Parents frequently talked about how they could extend their child’s interest in technology by engaging them in a conversation or activity, for example looking up a recipe on the mobile phone to use for a cooking session
- Parents feel it is important to combine technology with more traditional toys and activities
- There was a general consensus in the group that the parents would prefer to use everyday technology rather than technology based toys (for example, teddies with embedded screens). They felt that everyday technology was better for helping their child learn about the real world and understand the appropriate uses of technology. Most parents were negative about embedding technology in traditional toys and felt this removed something of the value of the toy (or resource).
- Parents were generally unimpressed with technology-based toys by commercial brands. They felt that real technology (aimed for adult use) was more accessible and easier to use and was more valuable in supporting their children’s learning.

- Children often enjoy pretend versions of the technology including simple things they and their parents have made from paper and cardboard. For example, role playing using a mobile phone with a toilet roll.
- EBooks were felt to be particularly valuable for religious works and reference material. Parents gave examples of using the Koran and the Bible in an electronic format with their children.
- Parents felt that technology enabled the child to be self-directing in their interests and learning – they felt that technologies such as search and on-demand entertainment allowed children to take control of their play and learning in new ways. However, this was not without some risks and concerns that parents need to manage.
- Parents valued the use of technology in settings but felt the emphasis should be on more traditional forms of learning, play and social interaction. They felt the most important place for using technology to support children’s learning would be in the home. They felt it was very important for the setting to focus on books and physical reading material.
- Older siblings play an important role in the use of technology by young children. They often have access to different types of technology and model its use in the home. Shared interactions with siblings can promote the use of technology. Siblings can share skills and ways to use apps and games. Siblings own patterns of use may influence the way technology is introduced to younger children. Young children often learn uses of technology such as selfies and text messages from older brothers and sisters.
- Most parents continue to prefer using physical paper books with their children. They see additional advantages to these types of books and are keen to promote a love of books. Technology can support and enhance books rather than replace them.
- Technology can offer additional support and advantages for children who have additional needs and disabilities including dyslexia and visual impairments.
- Technology can support children from families who speak English as an additional language. It provides additional material and examples to support both the child and the family.
- Parents felt technology supported children with their fine motor skills but needs to be balanced with outdoor play and other activities to support gross motor skills and muscle development.
- Technology can help unlock and develop children’s interests – it can be used to research information and explore multimedia ways to learn.

- At the same time, parents were cautious that technology did not replace the outside world in their children's interests. They want to ensure a healthy balance between the real and the virtual.
- Parents felt their children enjoyed taking selfies, seeing themselves on video and hearing their own voices. They felt this was very beneficial in building their child's confidence and awareness.
- Some parents were concerned that technology may limit their children's learning and development. They felt that tools such as writing aids and spell checkers might make their children overly reliant on technology rather than developing their own literacy.
- Digital photos and videos are very important for collecting, storing and retrieving precious memories, family histories and significant life events.
- Parents reflected on the pressures that families and children face around technology and in particular in keeping up with the latest gadgets and systems. They felt pressure came both from peers, older siblings and from TV adverts promoting the latest must-have products. Parents felt these pressures could have a direct effect on their young children.
- Parents acknowledged that technology can be used to manage a child – as one parent said, it can 'buy time' for the busy parent at home or when out and about. Whilst valuing quiet time parents felt that there were dangers in becoming reliant on this use of technology.
- Parents felt technology has lots of advantages in communicating and sharing information about their children's learning with the nursery settings and school. Photos and other forms of evidence can be very helpful in understanding what their child is doing in the setting.
- Several parents commented that their children's interest and reliance on technology changes depending on the nature of family activities. It is easy for families to get into patterns of using technology at home. However, when on holidays with children there is far less interest in technology – children may be more focused on outdoor activities such as camping, exploring or visiting the beach.
- Throughout the discussions parents shared ideas and examples with each other of their use of technology. The group made the comment that parents can learn so much from each other. But often there is not the time or forum to sit together and talk. Parents are often at the cutting edge of discovering what new technologies mean for their children. They would find it very useful to have further opportunities to meet and explore these issues as a group.

- Safety is an important issue for parents. Some parents felt that technology is more able to keep their child safe – examples were given of being able to monitor and track what a child is doing. All parents felt there were risks with technology and this needed to be taken into account by parents when supporting their child.
- Parents are aware of the opportunities and risk around technology and want clearer support and guidelines to help them make good decisions and support their children. They would welcome more support and advice about the uses of technology. They feel there is a lot to learn and share with practitioners but also between parents. This is explored in more detail in a later section.

To establish a good balance in the use of technology to support learning, all the parents felt they needed more advice and guidance. Key elements of the guidance should include:

- Opportunities for parents to come together to share experiences and explore strategies
- Clear advice on age appropriate issues for their children
- Access to good quality research about the developmental needs of their children and how their development might influence the types of technology that best meet their needs
- More support in managing online risks including issues of exposure to violence, bad language and inappropriate material.
- Systems to keep children safe whilst online and assurance that key websites have good monitoring and protection in place
- Ways to support children to use the internet to research interests without being exposed to inappropriate search results
- Advice and support on privacy issues such as tracking, cookies and other risks
- Support to understand and use effective online parent controls
- Clear guidance on what a good balance between real and virtual activities looks like – for example, how much time per day is appropriate for children to access certain types of technology and online activities
- Guidance on how too much technology can negatively effect children’s concentration skills, social skills and behaviour
- Guidance on risks to children’s brain and sensory development – for example, their eye sight and hearing
- Any research around ways technology may isolate children and inhibit their speech development
- Advice on how parents can set appropriate boundaries
- Timely advice on new and emerging technologies such as virtual reality, augmented reality and others.

A summary of key messages from practitioners

- Technology enables practitioners to access real-time information to support a child's interests. Practitioners can use apps and the Internet to research a topic and find material, photos, videos and potential activities to support a child.
- The Internet enables practitioners to access a wider range of music to support songs and rhymes with children – this is particularly valuable when researching culturally appropriate music and songs linked to festivals and celebrations. Examples given include accessing Russian folk songs, Indian songs and dual language rhymes
- Parents are able to provide feedback from their uses of technology to support and extend a child's learning in the setting. For example, parents can share photos and videos of a child's weekend activities or current interests and play at home
- Using and modelling technology supports a child to prepare for the future world and become comfortable and familiar with new ways of learning and sharing at a young age
- Audio books can be very helpful to extend a child's interest in books and to find dual language and other support
- Many apps and activities can support a child's numeracy development and interest in numbers
- One key role for practitioners is to support parents to understand the benefits and potential challenges of using technology with young children. Parents often ask practitioners for advice and guidance about apps and other technology-based activities. Conversations with parents about technology are very beneficial as they help the practitioner to understand more about the child's home learning environment. The conversation can explore ways that a parent can extend a child's interests at home and to embed learning.
- Parents are powerful and influential models for their children's behaviour with technology
- Sometimes practitioners observe how technology can be a barrier to parent/child interactions. Mobile phones in particular can distract adults and limit interactions and conversations with their children. The setting has found it helpful to have conversations with parents about this and offer advice and guidance.

- Internet based translation services can be helpful in working with families who speak other languages but the setting has discovered that translation services are not always reliable or accurate. The setting prefers to use parent-to-parent translation where possible.
- Most parents have access to a variety of forms of technology – however, staff have observed that some mothers may present as having less access. Cultural and gender factors may be one factor in some parents lacking access to email, mobile phones, Facebook and other technology. It is important to recognise this and ensure that these parents are not excluded from activities and communications.
- Working parents may need to use technology on a daily basis for their work – this may provide opportunities for learning but also mean that they are occupied by their phones/computers/tablets etc.

Parents, children and digital technology – in depth

Parents were asked to talk about their own child and say which pieces of digital technology they would be most interested in. Their responses were shared with the group and parents discussed how each item of digital technology might support their child’s learning and development – particularly linked to literacy and maths.

To support the activity, several items of technology were displayed on a table to start the thinking process. These items included:

- A mobile phone
- A tablet (iPad)
- A TV remote control
- Some headphones
- A keyboard for a laptop or computer
- A digital camera

Parents shared many examples of how their children react to technology or go looking for it in the home. The results are summarised in the table below:

Type of technology used by children	How parents believe this supports their children’s learning and development
Mobile phones	<ul style="list-style-type: none"> • Speaking and listening skills • Role playing conversations • Speaking with extended family members • Text messaging – watching adults • Using the keyboard • Playing with apps • Listening to songs and rhymes • Taking photos of people and things that interest the child

	<ul style="list-style-type: none"> • Using the answer phone – recording and listening to messages • skills for finger inputs • Specific apps to support literacy • Modelling text messaging and emails – using the keyboard
iPads and tablets	<ul style="list-style-type: none"> • Educational apps support reading and stories • Portability very important both for parents and children – ‘often my daughter will take the iPad to her room to play with in her own space’ • Supporting independence and independent play • Offers a big screen for more interactions about literacy and more detail for stories and pictures • Mirroring to the TV via a HDMI cable has advantages – it involves the wider family and enables the child to share their interests and tablet research • Creates links to nursery and school learning and topics • Children develop IT skills and confidence • Parents learning about new education ideas and approaches to try at home Cooking and recipes
Digital apps	<ul style="list-style-type: none"> • Learning games that use words, numbers, songs and rhymes • Games that support the develop of motor skills for the hand, arm and fingers • Learning about stories and story skills • Swiping skills for using the operating system • eBooks • Making links to cartoon characters that also occur in books and on the TV to develop interest and stories • Talking books • Voice recording and listening back • Using fingers to draw on the screen • Recognising and drawing shapes • Practising writing letters and numbers • Copying and tracing
Drawing and art apps	<ul style="list-style-type: none"> • Creativity • Finger skills • Experimenting with different brushes and media • Multi-media – combining with photos and other visual material • Non-messy • Can produce unlimited number of pictures

	<ul style="list-style-type: none"> • Looking back at past art • Printing out good examples • Portable and can be used anywhere • “Apps can be a gateway into art”
Laptops and desktop computers	<ul style="list-style-type: none"> • Keyboard skills • App-based learning as described above • Mouse skills – hand/eye coordination
Keyboards and keypads	<ul style="list-style-type: none"> • Linking alphabet symbols to meaning and communication • Supporting phonics • Calculators/big calculators
eBooks and kindles	<ul style="list-style-type: none"> • Supports reading and sharing stories • Portability and accessibility • Possible to get lots of children’s books on these devices <p>Can sample books and stories before buying</p>
Voice recognition software. For example: <ul style="list-style-type: none"> • Google • Siri 	<ul style="list-style-type: none"> • Speaking skills • Listening skills • Search skill
Digital cameras	<ul style="list-style-type: none"> • Capturing interesting things in the environment • Photographs of signs and logos • Talking about photos • Motor skills to use the camera buttons as well as the leads • Learning about pointing and direction
Remote controller	<ul style="list-style-type: none"> • Recognising numbers and letters for the TV channels • Motor skills to press buttons • Watching favourite TV programmes and talking about them with parents and carers • Using the NowTV app and other recorder software
CD player (including the CD player in the car)	<ul style="list-style-type: none"> • Listening/singing along to songs and rhymes • Press buttons to control the music • Lifting CD case lids and inserting discs • CD covers have printed text and pictures • Dancing and movement • Reading the CD booklet • Understanding the number of tracks and moving to a favourite track
Television	<ul style="list-style-type: none"> • Educational programmes • Stories

	<ul style="list-style-type: none"> • Using the remote to find a channel using numbers and buttons
Video camera	<ul style="list-style-type: none"> • Recording and playback of self and others • Recognising literacy and numbers in the environment • Conversations with parents about the videos • Making links to the child's wider world and family
Selfies and Video selfies	<ul style="list-style-type: none"> • Building self-awareness and confidence • Seeing oneself involved in literacy and communication activities • Telling stories • Listening to own speech • Talking about the pictures
Headphones	<ul style="list-style-type: none"> • Motor skills to use the leads and plugs • Listening and concentration skills • Creating a space for the child to enjoy the technology • Focusing skills • Singing • Listening to music and audio stories • Risks include isolation and high volume
Microphones	<ul style="list-style-type: none"> • Singing and rhymes • Dancing and movement activities • Modelling conversations – for example, discussions and interviews • Learning about a child's interests and favourite songs • Listening back to oneself – recording the child's voice
Walkie-talkies	<ul style="list-style-type: none"> • Conversations • Motor skills to press the buttons • Turn-taking
YouTube	<ul style="list-style-type: none"> • Parents reported that this was a very popular website/app • Children can search and find material from their favourite TV characters • The on-demand nature of YouTube means children have more control of the content they watch • Researching and following interests • Songs and rhymes • Dancing • Making links to characters in books and stories • Showing other children involved in literacy and activities – peer modelling

	<ul style="list-style-type: none"> • Finding child friendly video clips
Virtual reality (VR)	<ul style="list-style-type: none"> • Playing with goggles/dressing up • Exploring interests • Seeing older children using VR • VR risks for younger children
Hoover	<ul style="list-style-type: none"> • Using buttons • Understanding electricity • Lights and symbols
Microwave ovens	<ul style="list-style-type: none"> • Buttons and lights to control the cooking • Learning about time • Counting down • Reading numbers for the settings • Listening to sound alerts • Parents felt that there was a lot of technology embedded in kitchen appliances that could be used to support learning
Washing machines	<ul style="list-style-type: none"> • As above for microwaves
Electric cookers	<ul style="list-style-type: none"> • Again, as above
Toaster	<ul style="list-style-type: none"> • As above • Relating electricity to heat and cooking processes • Adjusting temperature and time using a rotating knob • The excitement for the child of the toast popping out
Fridge	<ul style="list-style-type: none"> • Opening and closing the door • Seeing the light come on • Temperature gauges
Cash machines	<ul style="list-style-type: none"> • Using keypads • Reading screens • Learning about numbers and pin number sequences • Using motor skills to push buttons • Seeing an outcome from a digital process in the real world – money and a receipt being dispensed • Learning about money and notes
Elevators and lifts	<ul style="list-style-type: none"> • Counting • Buttons
Hairdryers	<ul style="list-style-type: none"> • Buttons • Timers • Heat settings
Light switches	<ul style="list-style-type: none"> • Learning about on and off • Motor skills • Learning about cause and effect

Touch lamps	<ul style="list-style-type: none"> • As above – but parents felt that touch lamps were particularly fascinating to young children as they use their skin to control the light
Traffic lights	<ul style="list-style-type: none"> • Recognising colours • Reading key words and recognising letters • Learning about stop and go • Singing songs
Digital timers – including <ul style="list-style-type: none"> • Egg timers • Cooking timers • Toothbrush timers • Timers on the mobile phone • Eco timers • Water meters 	<ul style="list-style-type: none"> • Learning about time • Recognising numbers • Motor skills • Anticipation • Relating time to every day activities and tasks • Anticipation skills • Forward planning • Reading numbers and digital clocks • Understanding ideas of synchronization
Sat Nav	<ul style="list-style-type: none"> • Using maps • Listening to voices and instructions • Making links between the app and the real environment • Looking for road signs and street names • Looking for numbers • Learning about directions – left, right, forward, backwards • Learning about speed • Learning about stop and go
Digital watches	<ul style="list-style-type: none"> • Learning about time • Learning about dates and days • Recognising numbers • Watching numbers move and change • Using alarms
Barcodes	<ul style="list-style-type: none"> • Looking at patterns and symbols • Role playing scanning • Learning about cause and effect – the barcode leads to another outcome or activity
Making and fixing technology	<ul style="list-style-type: none"> • Seeing the insides of a piece of technology • Learning about electricity • Learning about safety
Visits to the library	<ul style="list-style-type: none"> • Using technology in the library setting • Linking technology to stories • Song and rhyme sessions • Using barcodes and scanners

	<ul style="list-style-type: none"> • In Peterborough many library books for children have a barcode you can scan to access an audio version of the book • Learning about dual language books • Oxford Owl • Supports children with dyslexia • Supports children with visual impairment • Supports interest in physical books • Story structures • Characters
eCommerce websites	<ul style="list-style-type: none"> • Search skills • Money skills – learning about value • Using passwords and pin numbers • Recognising signs and symbols • Remembering key words • Typing and inputting • Amazon gift cards • Pressing buttons online for shopping
Digital musical keyboards	<ul style="list-style-type: none"> • Musical skills • Songs and rhymes • Motor skills
Tech toys such as Vtech Leapfrog	<ul style="list-style-type: none"> • Vtech toys feel more safe and unbreakable • Vtech toys often harder to use and understand compared to normal digital cameras • Children don't enjoy them as much as adult tech such as an iPad • Can connect to phones and computers • Parents find them harder to use and set up compared to their own tech devices
Magic books and pens	<ul style="list-style-type: none"> • Touch and speak games • Stories • Extends vocabulary • Big pen may be easier to hold or may be more difficult for some children
Skype, FaceTime and video conferencing	<ul style="list-style-type: none"> • Video conferences with friends and extended family – particularly if living elsewhere • Sharing pictures and art work • Speaking home languages • Talking skills • Turn taking skills • Understanding wider family history and culture
Drones	<ul style="list-style-type: none"> • Movement and control skills • Understanding concepts of left, right, up and down • Motor skills to control joysticks and press buttons

Self-service machines in shops	<ul style="list-style-type: none"> • Shopping games • Learning about price and quantity • Motor skills – lifting, carrying • Reading signs and logos • Matching symbols • Role play games at home to reenact shopping trips
Karaoke machine	<ul style="list-style-type: none"> • Singing songs and rhymes • Confidence • Movement and dance • Having fun with friends and family

Parents' views on how digital technology supports learning

Parents were asked to reflect on their list of technology and summarise the key learning processes that were common across all the examples:

- Singing songs and rhymes that support children with words and numbers
- Digital media is often visual and contains photos and pictures that can be used to extend conversations and create stories
- Learning about the environment in greater detail – for example, animal sounds
- Using motor skills
- Expanding a child's interests in their favourite character or topic
- Learning more stories
- Gaining confidence to interact with the environment
- Seeing words and letters are all around at home and when out
- Seeing numbers in different contexts and for different uses
- Interacting – combining different ways to engage with an activity using a variety of sensory stimuli such as sound, pictures and touch
- Child-led searches for new information, stories and play activities

Parents' views of the challenges and risks

Parents were overwhelmingly positive about the potential and benefits of technology in their children's lives. They also recognised that it was already deeply embedded in everyday activities both at home and when out and about. However, to ensure that a full picture could be mapped, parents were asked to explore the challenges that using technology with children presents. They were asked to give examples of when they have had to manage or intervene in their child's access to different forms of technology.

Key issues included:

- All parents reported it was a challenge to limit their child's time using technology (especially games, YouTube and apps) and when the technology was removed this could lead to their child being upset. Most parents felt that establishing a rule of time for using tablets and mobile phones was a good

way to manage this. The consensus in the group was between 30 minutes to 1 hour for any session.

- Most parents felt that technology (particularly screen based games) could have a negative effect on their child's behaviour for several hours after the session – this included increased tantrums, lack of focus and concentration and withdrawal
- Parents were concerned about the impact of extended screen time on children's eyes and vision. Parents reported children holding the screen very close to their face and having dry or unfocused eyes after using screens
- Children may copy inappropriate language from app and videos
- Children may be exposed to inappropriate visual material
- Children may be competitive with each other about what type of technology (include brand and model) their family owns – this may also have negative consequences for children who have less access to technology at home
- Using technology may inhibit and restrict outdoor play – parents were concerned they may not have as much access to fresh air and sun
- It may reduce a child's social skills if they are spending too much time alone with technology – parents worried that this might reduce their ability to develop friendships
- Children may become isolated when using the technology – especially if they are also using headphones when using a tablet or app. Headphone use may be particularly prevalent in family situations where other family members are using other types of technology at the same time such as the computer, TV, phone or a second tablet
- Parents were concerned that children can be passive when interacting with apps and this might reduce their listening, reasoning and decision making skills
- Parents were aware of social networking and online risks for children but felt this was more likely to be significant when their child became older and more independent. However, they felt that technology might be creating the foundations for social media risks in young children
- Parents felt children were highly motivated to play games and apps and would rush other activities or more traditional learning to gain time with technology
- Parents were concerned about the tendency of their children to multi-task when using technology – particularly when eating and drinking at the same time
- Several examples were shared of the risks of inappropriate use of eCommerce sites and the risks of making inadvertent purchases
- Some parents were concerned about finger strain for children if they used apps or technology too much each day
- Parents recognised there may be temptation during a busy day to use technology (particularly apps, games and headphones) to occupy and distract their child. Parents are busy and have lots of commitments to fulfil. However it is important to not become reliant on technology to create space for other

activities. A particular example was the use of technology during long journeys and road trips to visit extended family.

Practitioners' views on how their settings use technology and digital media

Practitioners use technology in a variety of ways in the setting to support children's learning, including:

- Using digital cameras to capture and share observations
- Creating a Facebook page to share information and communicate with parents
- Using a laptop and projector to show DVDs and photos
- Working with children to encourage interaction through the use of video cameras, still cameras, microphones, talking tins and talking pens
- Offering an exploration box for children to use that includes technology such as keyboards, buttons, phones, calculators and a telescope
- Involving the children in watching the use of the photocopier and the office printer
- Modelling admin work in the office which uses technology
- Using an iPad to research children's interests from conversations and interactions
- Role plays using FaceTime cameras – enabling children to talk to each other when in different parts of the setting
- Occasionally accessing CBEEBIES on demand to support a learning theme

Practitioner views of the challenges and risks

Practitioner views mirrored those expressed by parents. Key concerns included:

- Use of technology can limit interactions with other children and adults. Parents may be distracted by technology.
- Limiting finger movements and motor skills when relying on apps, swiping motions and voice control
- Reduced concentration skills
- Using technology can be more passive than other forms of play
- Headphones can lead to isolation and reduce interaction with the wider environment
- Using technology in the setting is not always a time saver for practitioners – it can often require more time

Practitioner wish list

Practitioners were asked to identify what would support and enhance their use of technology and digital media to support children's learning:

- More advice and support to identify apps to develop maths and numeracy
- More interactive ideas to embed technology in the wider environment and in play

- Using technology more in role play activities
- A tailored solution for the setting to capture and share observations
- Better apps focused on the needs of 2 year olds
- A clearer overview of available apps and how they have been used and tested to support learning and avoid challenges

Conclusions

Technology is a significant part of young children's everyday lives and has great potential to support their learning and development. Parents already have valuable experience and knowledge about these technologies and have been able to support their children in a variety of creative ways.

Parents value the opportunity to discuss and explore the uses of technology and share examples and ideas with other parents and with practitioners. They recognise a variety of challenges and risks that the technology presents and are keen to find ways to manage it appropriately in their children's best interests.

Recommendations

1. Share the report with the parents and practitioners who helped co-produce it
2. Complement the findings in this report with some investigation of the views and voice of young children directly through some listening and participation work.
3. Support parents to share ideas and learning with each other and with practitioners.
4. Support practitioners to develop ways to support parents and children through reflection and training

See Appendix 1 outlining the methodology and delivery plan for the parent workshop and practitioner interviews

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**Appendix 1:
Methodology and delivery plan for the parent workshop and practitioner interviews**

Digital Literacy and Numeracy – Parents Workshop

Timetable for Parents Workshop

Time	Session
9.20 – 9.35 am	<p>Welcome and introductions</p> <ul style="list-style-type: none"> • Purpose of the session • Group agreement • Housekeeping
9.35 – 9.50 am	<p>My child’s favourite technology</p> <ul style="list-style-type: none"> • Visual cards exercise – popular technology
9.50 – 10.25	<p>Using technology for learning and development</p> <ul style="list-style-type: none"> • Group discussion
10.25 – 10.40	<p>Challenges and opportunities of using technology with young children</p> <ul style="list-style-type: none"> • Small group activity • Confidence scale exercise
10.40 – 10.50	<p>Summary and close</p> <ul style="list-style-type: none"> • Summary of the learning from the session • Next steps and report

Questions for Parents

1. What is your name and the name and age of your child/children?
2. What does your child/children enjoy doing? What are their interests at the moment?
3. What sorts of technology does your child use and enjoy?
 - Mobile phone
 - Tablet / iPad

- Television
- Computer
- Laptop
- Websites
- Games console
- Children's toys
- Google search skills
- Remote controllers
- Keyboards
- Robots
- Other examples

4. What are your child's favourite games and apps?

5. What technology do you use? Does your child see you using it?

6. How often will your child use technology?

7. Where does your child use this type of technology?

- At home
- Out and about
- With friends
- With extended family
- In settings
- Other

8. How has your child changed in the way they use technology – have you seen any differences or developments?

9. In what ways might this technology support your child with their literacy (reading and writing)?

10. In what ways might this technology support your child with their numeracy and maths? (counting, sorting, talking about colour, shape or size etc.)

11. In what other ways might technology support your child's learning and development?

12. Do you have any worries or concerns about your child using technology?

13. Does using technology create any challenges or difficulties for you as a parent?

14. How could technology support you even more as a parent to support your child's learning and development?

- Share your wish list
15. As a parent, has technology provided you with support, information or new opportunities?
16. **Confidence scale questions:** How important do you think technology is to your child's development and education? / How confident do you feel to support your child with their use and learning from technology? (Score 0 – 10 for each)
17. Is there anything else you want to share about your experiences?

Questions for Practitioners

1. What observations have you made of young children using technology?
 - In your setting
 - In your work with families
 - During home visits
 - In the community
 - With colleagues and other professionals
2. How might technology support a child's learning and development?
3. How might technology support their early literacy?
4. How might technology support their early numeracy and maths?
5. What conversations have you had with parents about the use of technology?
6. Has the use of technology presented any challenges and barriers to learning for children and parents?
 - Learning issues
 - Relationship issues
 - Behavioural issues
 - Routines and structures
 - Other
7. How might technology offer additional resources for your work to support parents?
8. Are there any ways that you have used technology to engage fathers and male carers?

9. Are there any ways that you have used technology to engage and work with families facing disadvantage or other social factors?

- English as an additional language
- Advice and signposting
- Disability issues
- Accessibility issues
- Information
- Networking
- Wider needs such as health, work and housing

10. How do you feel technology might be able to support you in the future to work effectively with children and their families?

- Share your wish list

11. Is there anything else you want to share about your experiences?