

Section One

Today's generation of young children can be portrayed as 'digital natives' by Bittman et al (2011) where children are being born into an ubiquitous digital media environment. It could be said that children are currently being seen as educationally attached to the directed interaction of digital media, provided by parents or teachers (BBC, 2012). Yet, as digital technologies are part of a child's life from birth, there has been a cause of debate within the media and in areas of academic fields surrounding it (Arnott et al, 2018). This discussion will investigate the factors leading to these statements, with close consideration into the digital devices such as iPad's and mobile phones within Early Years, considering the benefits and consequences of these within children's lives.

Since January 2010, in which the launch of the iPad was assembled, there has been an instant consumption of the device within education (Clark and Luckin, 2013). Corroborating this, reports by Ofcom (2015) demonstrate that the number of children using an iPad has ascended to over half percent. The increase is evident across all ages, although the biggest rise is between 5-7-year olds. Examination into the impact of this convenient and instantly manageable source of screen time on behaviour, family life or learning has trailed considerably behind its rate of assumption. There has been no clear guidelines towards the use of young children using the iPad's, other than recent suggestions that there needs to be a limited amount of time used in educational backgrounds, where schools are attempting to apply the technology to help provide children with the best learning experience (Radesky et al, 2015). Despite this, one source, BBC (2019) does indicate that children should take a break from screen-based activities every two hours, even stating that mobile phones should be banned from the dinner table and bedtimes to give children a healthy balance. It is clear that there is division among digital technologies when it comes to children's development and health.

Traditionally, the use of Information and Communications Technology (ICT) in education or Early Years has been separated from the normal teaching in classrooms with computers to, more recently, smaller devices that have been tested and are now used for a tool to help children enhance their learning (Henderson and Yeow, 2012). Yet, when it comes to iPads

and mobile phones, there is always going to be repercussions. It seems that there is so much focus on the risks and dangers of these device, that adults are misunderstanding the purpose of these new technologies. Rather than regard it as a single environment, there is a scale of opportunity and new understandings for children to learn (Kidron and Rudkin, 2017). The approaches to using media on these devices can help children to gain social skills and learn through active knowledge building. Caldwell and Bird (2015) convey that shared learning spaces are enhanced, just like Vygotsky's scaffolding element. Kucirkova et al (2014) indicates that Vygotsky's theory has importance in exploring the learning processes that is facilitated by the iPad. Children can shadow one another in various tasks, such as writing or drawing. Yelland (2018) also asserts that when children use iPads, there is evidence that valuable learning experiences are enhanced. Children can make collaborations with others, communicate their ideas and findings, as well as opportunities for independent learning. Children can become 'the more knowledgeable other', in terms of Vygotsky's social theory. It may even be suggested that the children are the more knowledgeable other compared to the adult. Children are living in a digital age in which they might have a broader developmental approach to media, even more than some adults (Wartella et al, 2016). They may be able to show adults how to access certain points or know about apps on the device more than the practitioner, allowing them to become the more knowledgeable other. Garvis and Lemon (2015) agrees and states that when children enter an educational setting, they are bringing with them a wide range of understandings and experience of digital technologies tools.

When children are using the iPad or mobile phone, not only are they gaining social skills, they are also developing their language skills too. Siraj-Blatchford and Whitebread (2003) expresses that the effectiveness of iPad uses in group work, in terms of children's learning is dependent on the talk and interactions generated. Children are building on their language skills through these devices from interactions with others, support and guidance from the adult. In relation to ICT, evidence implies that the pattern and quality of interaction with language between children is dependent upon the software that is used. The richest discussions come from children who are enjoying what they are doing on the devices. When operating the iPad, children can be referred to as Piaget's 'little scientists', where they show a new sense of fascination by all the new experiences they are having on the iPad, building on their cognitive development. Although, would Piaget approve of an iPad? Donohue (2015)

states that Piaget would see a tablet as something that would imply acceleration of development, even for infants. However, other theorists, such as Montessori, might disagree with Piaget and believe a tablet would be considered something symbolic and abstract for children to experience.

Whilst children use these devices and the touch screen their fine motor skills can be developed, which can furthermore enhance their writing skills. Studies have also shown that iPads can support playful and creative practice, in which children foster art and drawing skills (Marsh, et al 2018). Donohue (2015) notes that children can learn how to take photos, colour in pictures or use musical games or activities. However, can we consider collaborating all this media into children's lives as healthy? Siraj-Blatchford and Whitebread (2003) state there is continuing controversy as to whether these technologies are appropriate or 'healthy', to the degree where parents or early years practitioners are to encourage it in children's lives. As the BBC (2012) suggests it can stave off children's development and increase their health problems. Knapton (2015) agrees with this and conveys that it is stunting children's emotional development. Rather than a child self-regulating their feelings, they are masking them with a distracting screen. Chassiakos et al (2016) assents with this and states that media carries health risks with children such as: sleeping, attention, learning and a higher incidence of obesity and depression. In addition, with both devices, there is further risk of exposure to inappropriate, or unsafe content and privacy and confidentiality breaches. Yet, with these negative considerations, why is there a framework encouraging digital literacy in children's lives? The framework is founded around developing children's skills, knowledge and attitudes to enable them to become confident, creative and active users of technology and systems (Digital Competence Framework, 2016). So, with that in mind, Kidron and Rudkin (2017) state that children do have the right to access the digital world productively, fearlessly and knowledgably. The UN Convention on the Rights of the Child, Article 17, states that 'every child has the right to reliable information from a variety of sources online, whereby the government should encourage media to provide information that children can understand'. Does this mean we are too busy protecting children from the exposure of risks, to even realise that children can benefit from digital devices? Nonetheless, there are risks online; however, it does seem that these are more often from mobile phones, rather than iPads. This may be assumed as iPads can provide more purpose and function in the

classroom, such as introducing a story or writing tasks, than a mobile phone. Mobile phones do have a smaller screen, although The Guardian (2012) states that mobiles are profoundly equal to iPads, a potentially tool for learning but strangely feared in a child's hand, where they are assumed to disrupt attention or be the main cause of bullying. However, the National Literacy Trust (2016) differs and states that these touch screen devices are not equivalent. Their views strongly align with the notion that learning should always come from a book. They suggest that nothing can come between a child reading a book over a touch screen device. Learning behaviours, the imagination and concepts of reading a book outweigh the possibilities of reading it on an iPad.

It has been progressively clear that being literate is a fundamental skill that children in today's twenty-first century need. Now, practitioners follow the Donaldson Digital Competence Framework in settings to succeed in this goal. When it comes to iPads, studies have often revealed that teachers are eager to use the iPad as part of their early literacy program. Yelland (2018) also states that there are some studies into the ways that the iPad can benefit bilingual children, suggesting they have become literate as a result of iPad use. These devices can enhance literacy opportunities for those children who might be struggling with reading. Practitioners can use different apps to suit the needs of the child. Detheridge (1995) also states that different software can benefit children who are bilingual by allowing them to make connections between languages as well as recognising and understanding the differences between them. Apps on the iPad can be provided in different languages and this can also help parents as the software can be accessed at home, allowing them to be involved in their children's work. Learning to write is considered essential when it comes to academic success. However, it has also been informed that less children are engaging with writing outside of school. Dunn and Sweeney (2018) state that children want to be involved in literacy activities that are dependable and allow them to experience a 'real-worldliness' approach and, for many children, this happens with the use of digital technologies. The active role of technology in the lives of children and their families today emphasises that interactions with digital texts or technology can no longer be ignored, instead they are an integrated part of their lives. In other words, the use of iPads and mobile phones are shown as part of a child's daily routine within families, and this encourages them to engage with them as it allows them real life experiences that they want to learn about. In this instance, it

becomes apparent that the use of iPads has the potential to make a valuable contribution to learning. The introduction of iPads into schools is not without its disagreements (Clark and Luckin, 2013). However, according to Merchant (2012) it can disrupt the classroom life by providing opportunities for different responsibilities, learning and communication, especially those children with additional learning needs. iPads can help children with additional needs in a various of ways. Dethridge (1995) conveys that young children who have difficulty learning to read can be helped through activities in digital media such as using symbols, where they can have access to the difficult words through graphical images. This allows them to explore the ideas and express understanding without being limited by their reading difficulties. The iPad also has a big screen, allowing a clear, visible and colourful learning opportunity for children who may have difficulty writing or seeing certain things (Lin and Nzai, 2014). With the apps on the mobile phone or iPad, it can allow young children to focus and make contact with certain objects. Practitioners can use different sensory apps to encourage children to reach out and touch them. The device also allows any child to pick it up and use it, regardless of their ability (Saylor and Rodriguex-Gill, 2012). For some children, who have continuous injuries or illness that impact on their mobility, the iPad's touch-screen is a user-friendly device and is much easier for a child to manipulate than a computer (Ellis, 2011). Kucirkova et al (2014) also states that iPads have changed the way in which children with communication difficulties, including those with autism, have access or share information. These children can access apps, which can have audio textual presentations and pictures for stories, which then can benefit them with language and communication development. The Digital Competence Framework (2016) fully supports all children and, for those children with additional needs, it incorporates 'Routes for Learning' skills, which are the earliest ones that need to be formed for the other higher skills to be developed. Through this, the framework aims to develop the whole child and view them holistically, providing children with additional needs, several pathways for development and individualised aspects for that learner (Digital Framework Competence, 2016).

To conclude, the world of digital technology and media that surround children today is vastly different from what has been known and what has been studied before. As a result of this, we rely on what is already known about child development and the existing research on technology to make educated decisions about the way we use technology into children's lives

today, alongside The Foundation Phase and Digital Competence Framework as support guidelines. We know that learning is aided when embedded with social interactions and thus the social relevance of characters on screen can engage children with their learning and the opportunity of scaffolding can benefit children (Donohue, 2015). Digital literacy is the future and all practitioners need to embed this into their daily lives to develop the ‘whole’ child.

Section Two

This section will be a critical analysis of an ICT- based activity for young children, which is centred around digital literacy within Early Years, in relation to the Digital Competence Framework and curricula.

Practitioners who promote digital literacy in Early Years can be defined by Knobel (2008) as a person who provides a ‘mastery of ideas’ with specific skills and techniques that are necessary for qualifying as digitally literate. Siraj-Blatchford and Whitebread (2003) echo this and describes digital literacy as someone who is effective in aspects such as information handling, including the abilities to: identify, locate and retrieve information, discern and evaluate, access the accuracy of information and arguments and present appropriate style and medium, similar definitions that can be seen in the Digital Competence Framework also. In terms of Early Years, it is evident that these foundations of skills can be developed by children and their emerging awareness of ICT in a wide range of different forms. It can be said that these are best achieved through children’s own playful involvements which is one of the key factors that evolved from the activity.

The activity is aimed at children aged four to five, yet it can be beneficial to all ages and their appropriate development stage. The activity would take place outside an Early Years setting or school, where the children and the practitioner would have a tent or a tepee. The children would then explore the surrounding area searching for distinctive natural objects, especially leaves and take them back to the tent. A school’s outside garden would be ideal as a potential location for various discoveries. With a partner, and using an electronic torch provided, children will shine the light onto the background of the tent or tepee creating shadows. Using an iPad or a camera, children would, with the help from the practitioner or a friend, take photos of the shadows. Guidance from the practitioner would enable the child to print from the iPad and connect it to the setting/school’s printer to print off the images. Future work can be created by the children looking at the shadow photos and enhancing their mathematical development by exploring symmetrical concepts, which is one of the outcomes in the Foundation Phase. Children could even draw or trace the images onto new paper if they wish to do so to develop their fine motor skills or creative arts.

One of the positive attributes of this activity is the connections that can be made between the Digital Competence Framework and the different strands. The Digital Competence Framework consist of four strands: Citizenship, Interacting and Collaborating, Producing and Date and Computational thinking (Digital Competence Framework, 2016).

Regarding the first strand, citizenship, there is a shared connection to the activity. One of the aspects of this strand is the promotion of children's health and well-being. This is enriched by the children being outside and exploring their surroundings with the natural objects. Just like Piaget's cognitive development, children's learning is generated through intense looking, listening and touching, through which they explore and investigate the properties of the world (Halpenny, 2014). The children are also contributing to the Education for Sustainable Development and Global Citizenship whereby they can explore the properties of the objects that they have found and the purpose of what that might entail (ESTYN, 2013). Outdoor learning is essential and has a positive contribution to children's development and well-being (BBC, 2016). Digital learning can also provide an effective bridge between indoor and outdoor learning contexts as it opens opportunities for learning (Caldwell and Bird, 2015). There is a potential for using the digital technologies in a cross-curricular way to enhance outdoor learning whilst developing children's hands-on engagement and physical exploration of their environment. Successful Futures (2015) in the Donaldson Report also incorporates a three-cross curricular, which includes literacy, numeracy and digital competence. The activity combines all, where the children are being digital literate learners whilst also fostering their numeracy development where in the activity, they could count how many objects they have found. However, now, education and industry authorities are encouraging the use of digital technology into the environment by preparing children to prosper in a digital world, with frameworks such as the Digital Competence, where they state that it develops children's well-being. Yet, if we are encouraging more digital literacy in children's lives, why is it that health authorities, in contrast, discourage children's use of the devices and raise concerns about the potential negative impact on children's physical, cognitive, emotional and social well-being (Straker et al, 2018)? Interestingly, there has been a call to eliminate the overuse of the digital technology in the Early Years (Nutbrown, 2011), yet, in direct contrast to this, we are encouraged to focus on it in children's lives as a framework declares we do so. The Guardian (2013) states that children need to have a balance between work with digital devices, rest and play. With this activity, children have all three aspects. They can play and explore outside, whilst sitting down resting taking photos and enjoying their work.

Another strand in the Digital Competence framework that contributes to the activity is Interacting and Collaborating. Within this strand, children are gaining communicative skills while out exploring the environment, creating a child-led approach to their learning. This approach coincides with Vygotsky's scaffolding theory where children aid one another in the process of the activity or to develop a new understanding. Children can then focus their attention on the task at hand and keep each other motivated (Hammond and Gibbs, 2005). Child-initiated play is important for fostering social competence and building on children's confidence as well as self-regulation. In this type of learning, children can negotiate with others, take it in turns with the digital technologies and learn how to manage themselves and others. However, it is suggested by Nutbrown (2011) that children in today's society, their lives are filled with screen time rather than real-time nature and being outside, helpful adults or a hands-on experience. Conversely, this activity combines all. Children are gaining a hands-on experience just by being outside and exploring, using devices such as the iPad to take photos and angling different positions with a torch to get the shadows. Adults are there to guide and support and children get a feel for nature and the experience.

Data and Computational thinking can also be encouraged whilst participating in this activity. One element of this strand consists of problem solving and modelling. In the activity, adults can model to the children on how to use the torches to shine light onto the objects and create a shadow. However, as this may be regarded as an adult-led concept, it is important to know that to follow a child-led pedagogy, there needs to be the adoption of what is known as developmentally appropriate practice. Indeed, the concept of the child-centred approach needs to be added to the activity, as child-centred education can be traced back to the philosophers such as Dewey and Rousseau (Rose and Rogers, 2012) where they highly emphasise the importance of it, yet there still needs to be a balance of support and guidance to the children. This can be referred to the modelling theory of Albert Bandura (1977) where he conducted that children observe adults around them and mimic their behaviours. It is important to note that the balance between adult and child-led within an activity needs to be kept. The role of the adult in the activity can demonstrate to the children how to search for objects or how to print off from the iPad, then simply allowing the children to do it by themselves.

Digital literacy within the activity is described by Savage and Barnett (2015) as accessing, interpreting, understanding and communication of information or knowledge. However, with the new technologies, there is now a greater choice for children in terms of interaction, communication of information in all possible forms. The Foundation Phase (2015) emphasises on the learners' achievement of and ability to apply the skills and concepts they have. This can be reflected in the activity through the children accessing the settings to download the photo to enable it to print, gaining information from the adult and communication through their peers to achieve the digital literacy aspect. The task, according to the Foundation Phase (2015), is a realistic task suitable for their stage of development. Digital literacy could also be enhanced through the children writing their names underneath the picture as they are making connections to their learning by adapting to the keyboard on the iPad and expanding on their literacy skills. This activity could also widen the children's engagement aspect, which is one of the key terms in the Foundation Phase Profile. Children can foster outcomes two or three of the profile, which states that children can engage in a range of activities, including those indoor and outdoor. Children will be keen to act independently, although sometimes could need the assistance of the adult if they are unsure, or cannot perform the task (Foundation Phase Profile, 2017).

It could be said that the activity develops the holistic child with references to the Digital Competence and Foundation Phase even, perhaps, with regards to gender as any child can take part in it. However, as much as there are equal opportunities for girls to access ICT as much as boys do, it is meaningful to know that girls still decide not to choose or to take up ICT opportunities available to them (Siraj-Blatchford and Whitebread, 2003). Computers are repeatedly seen to belong to the realm of machinery work or mathematics, which can be noted by Wajcman (1991) as a daunting experience for many girls. Children need to be required with positive female role models to bridge over the computer gender gap. In the activity, practitioners can model encouraging behaviour with the iPad, which could be a step forward in the direction of gender opportunities for all. The activity also provides an opportunity for children with additional needs. The outdoor area is also fundamental to their learning and can create a calm area for them to explore (Walsh, 2016). Children with additional needs, such as autism, can have the support of the practitioner whilst on the iPad or

camera but also the element of child-led learning where they are free to explore the surrounding area for themselves. The activity can also help children with needs such as sensation seeking where sensory awareness could be developed. Using the torches to shine light on the tent or tepee can develop children's visual, tactile, and vestibular stimulation (Thompson and Ralsor, 2013). Children with sustained illnesses or injuries are still able to take part by still being able to explore the iPad or the camera and gaining the child-initiated element by being outside and exploring by themselves. In ways, the activity develops the whole child.

Section Three

Keeping your child safe online



Source: (Lengualia, 2014)

An internet safety guide for parents, carers or guardians



Approved by
practitioners

Communicating the issues

Did you know Childnet (2006) rules have been developed especially for young children to remind them how to be careful online?

S

SAFE. Keep safe by not giving out personal information, such as your name, address, home or school name to any one you don't trust.

M

MEETING. Meeting someone you don't know can be dangerous. Only do it with a parent/guardian's permission and only when they are present.

A

ACCEPTING. Accepting emails, photos, messages or texts from people you don't know, or trust, can lead to problems. They may contain upsetting messages.

R

RELIABLE. You can't trust everything that you see online, as certain things can be out of date, inaccurate or not true. To get reliable information, check books, different websites or ask an adult.

T

TELL. Tell a trusted adult if something makes you feel upset, worried, confused or you have that butterfly feeling in your stomach (CEOP, 2011).

Cyber safety

The internet is a place full of opportunities where children can play, learn, create or connect (NSPCC, no date). However, children need to be protected and the use of ICT can come with some risks. Netsafe's (no date) approach to cyber safety is:

- Putting in policies and strategies to minimise and manage risks.
 - Recognising the importance of teaching and supportive practices towards internet safety.
 - Managing a positive approach to the benefits of technologies.
- Under these, the Government has required all schools to put in place supported measures to protect children online. Under the proposals, schools must have appropriate filters and monitoring systems, so no child can access harmful content via the school's IT system and where concerns can be spotted quickly. Schools must teach all pupils about safeguarding online. It is statutory requirement that all schools must follow when they are following the Internet Access Policy (GOV, 2015). It can be important that you, as parents, voice your concerns to your child and explain the safety rules when going online or using technology devices. **Education is key to online safety.**

The recent Ofcom study show that 91% of children live in a household with access to the internet and over a third of 3-4-year olds are able to access it (Livingstone et al, 2015). It is important to note that children need provision in these areas to get the best out of using the internet (Ofcom, 2018). According to the UNCRC (no date) Article 13 states that children have the right to access all kinds of information and in terms of digital technologies. So, here is eight useful tips can you as a parent can put in place for you and your child to keep them safe online.

Where do I start?

Using the internet together can be the right way forward to safer children online. Active conversations and engagements are important. Be positive and engage in the technologies that your child is enjoying. Take time to look out for interests or games that your child is using or want to use and then look out for any safety features that are available with them (Bouckley, 2019). This will then give you a helping hand and a better understanding of the different ways in which children are engaging with technology, which can help you to become more confident in what they are doing and also helping you feel self-assured.

Should I set any rules?

Just as you set rules and routines for everyday life, establish clear expectations regarding online activities from the offset. Making a family agreement can be a worthwhile step, which might include setting a time limit or regulating the sites that can be watched (Netsafe, 2018). It is important to teach your child that what is right and wrong in every day life is also right and wrong online and therefore it is important to set these rules from the start, so you and your child are aware of the limits.

How can I supervise my child?

Keeping your device in a suitable place in the house can help you to regulate your child's internet use. Remember to talk to your child about using their devices where you can see what they are doing and remind them that they will still need to be supervised. Internet capabilities on a smartphone, games consoles or other devices can be accessed via their network where they will be happy to help with the situation (Bouckley, 2019).

How much is too much time?

Children can be excited about the use of technology and the internet. However, the challenge can be balancing enthusiasm and ensuring that there is not too much screen time. It is important to note that too much access to the internet might have a negative impact on other important areas of a child's development, such as physical, social and mental health (The Guardian, 2018). These might help you help manage the issue. Agreeing time limits or using time limiting tools, designating weekly times to use the internet together, or removing the devices from children at night can help you limit the time your child spends online.

Are there tools to help?

There are parental tools and filters available to help you set safer boundaries for your children, however it may require that you have to set them up yourself. Teach your child what to do if they are targeted online, so they have the tools to deal with any issues that may arise (Net safe, 2018). Remind them it is important to tell a trusted adult about the issues online. Passwords can be useful tool when it comes to blocking out different materials or various devices, so it is advisable to choose a strong one and not share it. Young children do tend to try and go on devices if they are left unsupervised, a password will help you in this.

Useful sites

- UK Safer Internet Centre – <http://www.saferinternet.org> NSPCC – <http://www.nspcc.org.uk/preventing-abuse/keeping-children-safe-online-safety/> Get safe online- https://www.ofcom.org.uk/data/assets/pdf_file/0022/117256/CMR-2018-narrative-report.pdf

References

Arnott, L., Palaiologou, I. and Gray, C. (2018) 'Digital devices, internet- enabled toys and digital games: The changing nature of young children's learning ecologies, experiences and pedagogies', *British Journal of Educational Technologies*, Vol 49, No 5, pp. 803-806.

Bittman, M., Rutherford, L., Brown, J. and Unsworth, L. (2011) 'Digital natives? New and old media and children's outcomes', *Australian Journal of Education*, 55 (2), pp. 161-175.

Bouckley, H. (2019) 'BT Parental controls: The free and easy way to keep your children safe online' <https://home.bt.com/tech-gadgets/internet/broadband/stay-safe-with-bt-parental-controls-11363887238413> [Accessed: 24th February 2019].

BBC. (2012) 'Limit children's screen time, expert urges' <https://www.bbc.co.uk/news/education-19870199> [Accessed: 10th February 2019].

BBC. (2019) 'Children and electronic devices: How to keep young children safe' <https://www.bbc.co.uk/news/health-47150658> [Accessed: 11th February 2019].

BBC. (2016) 'Outdoor learning 'boosts children's development' <https://www.bbc.co.uk/news/science-environment-36795912> [Accessed: 13th February 2019].

Chassiakos, Y., Radesky, J., Christakis, D., Moreno, M. and Cross, C. (2016) 'Children and Adolescents and Digital Media', *Pediatrics*, Volume 138, No 5, pp.1.

ChildNet. (2006) 'Be safe online' <https://www.childnet.com/ufiles/SMART-rules-Poster-A3.pdf> [Accessed: 21st February 2019].

Clark, W. and Luckin, R. (2013) *iPads in the classroom- What the research says*. London: University of London.

Caldwell, H. and Bird, J. (2015) *Teaching with tablets*. London: SAGE.

Detheridge, T. (1995) *IT helps – Using IT to support basic literacy and numeracy skills*. London: NCET.

Dunn, J. and Sweeney, T. (2018) 'Writing and iPads in the early years: Perspectives from within the classroom', *British Journal of Educational Technology*, Vol 49, No 5, pp. 859-869.

Donohue, C. (2015) *Technology and digital media in the early years: tools for teaching and learning*. New York: Routledge.

Ellis, S. (2011) 'Teaching the Future: How iPads are being used to engage learners with special needs', *Screen Education*, (63), pp.60–64.

Estyn. (2013) 'Supplementary guidance: Education for Sustainable Development and Global Citizenship'

<https://www.estyn.gov.wales/sites/default/files/documents/Supplementary%20guidance%20-%20ESDGC.pdf> [Accessed: 12th February 2019].

Foundation Phase. (2015) 'Curriculum for Wales'

<https://beta.gov.wales/sites/default/files/publications/2018-02/foundation-phase-framework-revised-2015.pdf> [Accessed: 15th February 2019].

Foundation Phase Profile. (2017) 'Foundation Phase Profile Handbook'

<https://beta.gov.wales/sites/default/files/publications/2018-03/foundation-phase-profile-handbook-revised-september-2017.pdf> [Accessed: 17th February 2019].

Garvis, S. and Lemon, N. (2015) *Understanding digital technologies and young children: An international perspective*. London: Routledge.

GOV. (2015) 'New measure to keep children safe online at school and home'

<https://www.gov.uk/government/news/new-measures-to-keep-children-safe-online-at-school-and-at-home> [Accessed: 21st February 2019].

Hammond, J. and Gibbons, P. (2005) *Teachers' voices*. London: Macquarie University.

Halpenny, A. (2014) *Introducing Piaget: a guide for practitioners and students in early years education*. London: Routledge.

Henderson, S. and Yeow, J. (2012) 'iPad in Education: A case study of iPad adoption and Use in a Primary School' <https://ieeexplore.ieee.org/abstract/document/6148617> [Accessed: 6th February 2019].

Kucirkova, N., Sheehy, K. and Messer, D. (2014) 'A Vygotskian perspective on parent-child talk during iPad story sharing', *Journal of research in reading*, Volume 38, Issue 4, pp. 428-441.

Kucirkova, N., Messer, D., Critten, V. and Harwood, J. (2014) 'Story-making on the iPad when children have complex needs: Two case studies', *Communication Disorders Quarterly*, Vol 36 (1), pp. 44-54.

Kidron, B. and Rudkin, A. (2017) 'Digital Childhood' https://5rightsfoundation.com/static/Digital_Childhood_report_-_EMBARGOED.pdf [Accessed: 4th February 2019].

Knapton, S. (2015) 'Using iPads to pacify children may harm their development' <https://www.telegraph.co.uk/news/science/science-news/11382711/Using-iPads-to-pacify-children-may-harm-their-development-say-scientists.html> [Accessed: 6th February 2019].

Knobel, M. (2008) *Digital literacies: Concepts, policies and practices*. New York: Peter Lang.

Lin, L. and Nzai, V. (2014) 'Using iPad apps to enhance literacy skills of English language learners with special needs', *International Journal of Languages and Literatures*, Vol 2, No 1, pp. 21-29.

Lengualia. (2014) 'Computer' <https://lengualia.files.wordpress.com/2014/02/9353062-dibujo-animado-de-ordenador-de-sobremesa-sonriente-ilustraci-n-vectorial.jpg> [Accessed: 19th February 2019].

Livingstone, S., Carr, J. and Byrne, J. (2015) 'One in three: Internet Governance and children's rights' <https://www.cigionline.org/initiatives/global-commission-internet-governance> [Accessed: 22nd February 2019].

Marsh, J., Plowman, L., Yamada-Rice, D., Bishop, J., Lahmar, J. and Scott, F. (2018) 'Play and creatively in young children's use of apps', *British Journal of Educational Technologies*, Vol 49, No 5, pp. 870-882.

Merchant, G. (2012). 'Mobile practices in everyday life: popular digital technologies and schooling revisited', *British Journal of Educational Technology*, 43, pp. 770–782.

Nutbrown, C. (2011) *Key concepts in Early Childhood Education and Care*. London: SAGE.

National Literacy Trust. (2016) 'The use of technology to support literacy in the early years in 2015' <https://literacytrust.org.uk/research-services/research-reports/use-technology-support-literacy-early-years-2015-findings-our-third-annual-early-years-surveys-parents-and-early-years-practitioners/> [Accessed: 13th February 2019].

NetSafe. (no date) 'What is cyber safety?' <http://www.cybersafety.org.nz/kit/welcome/cybersafety.html> [Accessed: 21st February 2019].

NetSafe. (2018) '10 tips for parents' <https://www.netsafe.org.nz/online-safety-for-parents/> [Accessed: 22nd February 2019].

Ofcom (2015) 'Children and parents: media use and attitudes report.' <file:///D:/EAEC6011%20C/2017-18/Resources/Ofcom%202015%20children%20and%20parents%20media.pdf> [Accessed: 4th February 2019].

Ofcom. (2018) 'Communications Market Report' https://www.ofcom.org.uk/_data/assets/pdf_file/0022/117256/CMR-2018-narrative-report.pdf [Accessed: 22nd February 2019].

Radesky, J., Schumacher, J. and Zuckerman, B. (2015) 'Mobile and Interactive media use by young children: The Good, the bad and the unknown', *Pediatrics*, Vol 135, Issue 1, pp. 1.

Rose, J. and Rogers, S. (2012) *The Role of the Adult in the Early Years Setting*. England: Open University Press.

Straker, L., Zabatiero, J., Dandy, S., Thorpe, K. and Edwards, S. (2018) 'Conflicting guidelines on young children's screen time and use of digital technology create policy and practice dilemmas', *The Journal of Pediatrics*, Volume 202, pp. 300-303.

Saylor, C. and Rodriguez-Gill, G. (2012) 'Using the iPad and a sequence of apps for young children with multiple disabilities', *California deaf-blind services*, Vol 17, No 2, pp.1.

Savage, M. and Barnett, A. (2015) *Digital Literacy for Primary Teachers*. Northwich: Critical Publishing.

Thompson, S. and Ralsor, J. (2013) 'Meeting the sensory needs of young children' https://www.mbaea.org/media/documents/Young_Children_May_2013_Supporting_9B82C51F6C9E5.pdf [Accessed: 18th February 2019].

The Guardian. (2018) 'How much screen time is too much for kids? It's complicated' <https://www.theguardian.com/technology/2018/may/31/how-much-screen-time-is-too-much-for-kids-parents-advice-children-digital-media> [Accessed: 24th February 2019].

The Guardian. (2012) 'Should mobile phones be banned in schools?' <https://www.theguardian.com/education/2012/nov/27/should-mobiles-be-banned-schools> [Accessed: 6th February 2019].

The Guardian. (2013) 'Digital kids: How children are using devices, apps and media in 2013' <https://www.theguardian.com/technology/2013/oct/31/digital-kids-devices-apps-media> [Accessed: 18th February 2019].

Un Convention on the Rights of the Child. (no date) 'A summary of the Un Convention on the Rights of the Child' https://downloads.unicef.org.uk/wp-content/uploads/2010/05/UNCRC_summary-1.pdf?_ga=2.184188320.72757761.1549558275-188537072.1507664670 [Accessed: 7th February 2019].

Walsh, P. (2016) *Early childhood playgrounds: Planning an outside learning environment*. London: Routledge.

Wartella, E., Beaudoin-Ryan, L., Blackwell, C., Cingel, D., Hurwitz, L. and Lauricella, A. (2016) 'What kind of adults will our children become? The impact of growing up in a media-saturated world', *Journal of Children and Media*, Vol 10, Issue 1, pp. 13-20.

Welsh Government. (2016) 'Digital Competence Framework'
<http://learning.gov.wales/docs/learningwales/publications/160831-dcf-your-questions-answered-en.pdf> [Accessed: 4th February 2019].

Wajcman, J. (1991) *Feminism confronts technology*. Cambridge: Polity Press.

Yelland, N. (2018) 'A pedagogy of multiliteracies: Young children and multimodal learning with tablets', *British Journal of Educational Technology*, Vol 49, No 5, pp.847-858.