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A Critical Evaluation of the Effectiveness of Digital Devices Used by Young Children

‘Digital technology has already changed the world – and as more and more children go online around the world, it is increasingly changing childhood.’ (Unicef, 2017a)

Ofcom (2015) state that since 2005 more children have access to the internet while at home and their usage of the digital world has more than doubled with tablets becoming increasingly popular and TV usage decreasing as a form of entertainment. The rise of technology today has seen the digital world have a significant impact on children’s lives (Chassiakos et al. 2016). Kidron and Rudkin (2017) state that a digital childhood is here to stay and is a necessary component in a 21st century upbringing and without access to it children are at a disadvantage.

As with everything, there are both positives and negatives to the up and coming digital world.

Social Complications

Boston University Medical Center (2015) point out how there may be a negative impact on a child’s social development if technology is used at times where face to face social interaction could be taking place. Drago (2015) notes how through her research it was noticeable that human communication and interaction as we once knew may be forever changed due to the rise in technology. Her research gave evident results that technology has a significant impact on face to face social interaction between humans. However, this may not be a negative aspect as Durkee (2012) explains how young people have chosen the internet as their preferred method of socialisation and Gottschalk (2019) notes how, today, young people are more connected than ever before. Kardefelt-Winther (2017) concurs, explaining how technology enhances children’s relationships as their social circle is now predominantly online.

Chassiakos (2016) discusses how children as young 2 are developing their social-emotional skills and it is important for adults to provide this social interaction with children in order to support them in their development. The author notes how this can be accomplished in a digital world but it will take adult interaction to be successful. This can be achieved using Lev Vygotsky’s theory of the Zone of Proximal Development and Scaffolding. Mooney (2000) describes Vygotsky’s theory of ZPD as the gap in-between the point where a child is at when alone with a task and where

they could be with the support of a more knowledgeable other supporting them and scaffolding their learning. Scaffolding is described as the assistant of a more knowledgeable other supporting the child to bridge that gap in their learning. Scaffolding in this situation can spark conversation between child and adult as they explore the digital world together. The Guardian (2014) state how research shows that children within their early years have more of an understanding of the digital world than adults- With this information, in today's modern world where children are growing up within digital environments and have a good understanding of the digital world, when interacting with adults among digital devices, this is a situation that welcomes Sustained Shared Thinking. Siraj-Blatchford (2002) describes the term Sustained Shared Thinking as two individuals alongside each other to clarify a concept or solve a problem. Dunn and Sweeney (2018) discuss how in the digital world children are more confident therefore it is possible that the child may be the More Knowledgeable Other when it comes to technology; therefore Sustained Shared Thinking can take place, the adult can be the facilitator and will learn alongside the child. Gottschalk (2019) agrees noting how spending time together on a digital device and helping one another understand is more beneficial than the actual activity taking place. Healy (1998) explains how technology can be a great tool to use alongside education as long as there is an adult present to provide a human scaffold for learning.

As well as a human being the More Knowledgeable Other, it is also possible for the digital device to scaffold the child throughout their learning journey. Sharma and Hannafin (2007) note how technology can provide tools to enhance the learners experience and will be customised to the individual; an example of tools is an instant spell check or related content when searching the internet- both of these will extend and enhance the learners experience.

In the digital age there are a variety of electronic applications (apps) readily available for children to access to extend their learning. These apps can especially be of help to children who have an Additional Learning Needs (ALN). Lorah (2015) found within her study that the iPad was a preferred method of intervention and moreover the majority of communication skills among ALN children were improved when using an iPad with a supporting app. However, Allen, Heartley and Cain (2016) noted that through their research with ALN children, the electronic devices did not prove more beneficial than a predominantly used picture book for learning and communication.

Technology in Education

Within educational settings technology is not only beneficial for children with ALN. Nutbrown (2011) explains how the meaning of the word literacy has changed as in the 21st century it is not only means pen to paper but now fingers to keyboards or touchscreens. Dunn and Sweeney (2018) note that children can get tired when using a pencil as their writing tool and this can create an obstacle within their literacy development, but in a digital world they may still progress in other ways.

Neumann (2016) discusses how the digital world has a positive impact on children's literacy development as it can usually translate into their home life by using tablets. Lynch and Redpath (2014) agree, indeed technology is a good supporting tool for children's literacy development and there are a number of digital applications that can give children a play-like feel whilst learning, however, these applications are relatively closed and don't offer open ended learning. National Literacy Trust (2016) note that another implication of literacy on a screen does not have the same function as reading print on paper.

Kidron and Rudkin (2017) recommended to alleviate children from risk and harm online that digital competence should be a priority when it comes to children's education.

By the year 2022, Professor Graham Donaldson's Successful Futures curriculum will begin to embed itself into schools around Wales. Donaldson (2015) states that digital competence will be carried throughout the whole curriculum as he trusts that in order to function in a workplace in modern society then children will need to grow and learn to become digitally competent; so by integrating it into their curriculum, we are setting our children up for success.

Yu (2013) notes how technology is important when it comes to education and should be integrated as a tool to facilitate learning throughout the teaching process within schools. However, if technology is to be used within education it is crucial that it is monitored and facilitated by adults to ensure that it is used appropriately and effectively. Educational Endowment Foundation (2018) recognises the benefits of digital devices being used to further education, but stress that they must only supplement the teaching and not take over.

However, although technology seems to have a positive effect on today's education, we must explore how much exposure children are getting to the digital world and what comes with it. Ofcom (2018) report that 95.5% of children aged between 3-15 use television sets and 67% of children of the same age range use a tablet. Children spend an average of 6 hours a day at school and as discussed, schools are using technology more and more within their teaching practice. Get Wired (2015) notes how within a school there are different forms of wireless devices such as WiFi routers, interactive whiteboards and tablets. Dr. Elizabeth Evans discusses how having these devices emit radiation that both children and teachers are exposed to for numerous hours throughout the school day and may cause harm over time; especially as children are still developing. However, Evans states that technology has its benefits and to overcome the issue of harmful radiation, schools must rid of Wireless signals and instead use wired resources as this alone will give children a significant amount of respite.

Physical and Brain Development

The Guardian (2013) report how technology is taking its toll on a child's physical activity with only 51% of children achieving their recommended daily physical activity and this is the result of screens being readily available to children.

However, Gottschalk (2019) states how the digital world is good for helping children build their social circle and doesn't stop them from taking part in physical activity so long as it is monitored by parents. Huber, Highfield and Kaufman (2018) concur, noting that parents should be making informed decisions when it comes to their child's screen time.

Kardefelt-Winther (2017) notes how there is an assumption that technology will 'hijack' and rewire a child's brain due to a child's brain being more plastic at a young age, although this is not supported by neuroscientists. Infact, to date, the effect that technology has on the brain's function is unknown. Unicef (2017a) agree stating that there is no current evidence that moderate use of technology has a harmful effect on children's brain development. OECD (2019) concurs stating that this misinformation has caused anxieties and made people fearful. While technology may have an effect on children, it is important to maximise other aspects of their life to create a balance.

“We live in a world erected by the stories we hear and see and tell” (Shanahan and Morgan, 1999)

These stories that we hear largely come from television and there are long term effects that viewers might attain from viewing; this is known as the Cultivation Theory. It was introduced by George Gerbner and proposes that there is a risk of television obscuring viewers conceptions and beliefs on the world around them. (Mosharafa,2015; Shanahan and Morgan, 1999; Saedfudin and Venus, 2007)

Morgan and Shanahan (2010) note how heavy viewing of television and watching programmes such as the news will cause viewers to develop fear of content reported such as crime and will lead to a lack of social trust, this can be passed on to children of parents who warn them about what they have viewed through a direct or indirect process.

Mosharafa (2015) discusses how a part of the Cultivation Theory links to children and their perception of the world- what is real and what is not; this is known as Physical Actuality. Although they may be at risk of having their views tainted by media shown, Unicef (2017b) state the United Nations Convention on the Rights of the Child created a right for children to have access to information via media in Article 17. Children have the right to know what is happening in the world they live.

Although Shanahan and Morgan (1999) notes that the effects of viewing have been widely debated and the Cultivation Theory is a very controversial and critiqued approach that is not unanimously agreed upon.

Ofcom (2018) report how since 2017 children’s time watching television throughout the week has decreased so they are less exposed to the ‘Cultivation Theory’. However, they also report that the use of tablets has increased so we must question whether these children are still exposed to the same media just using a different device.

Digital Safety

-A Guide for Parents-

The use of digital devices can benefit children from an early age by developing their **language, creativity and social skills**- but it does not come without risk! (Internet Matters.org, 2015). Huber, Highfield and Kaufman (2018) say that parents should be making informed decisions when it comes to their child's screen time. Here is a guide to help you do just that and inform you of the dangers your child could be facing when in front of the screen and what you can do to eliminate such risks.

Facts and Stats

- Tablets are increasingly popular among children and the smaller screens makes supervision harder for parents (Ofcom, 2015).
- A decade ago popular social networking sites did not exist, today children as young as 5 years old have active social media accounts (Ofcom, 2015).
- 1 in 3 young children report to have been bullied online with 1 in 5 purposely missing school as a result (Unicef, 2019).
- Too much screen time can have negative effects on a child's wellbeing (Internet Matters.org, 2018a).
- Today's digital age allows children to be more connected (Gottschalk, 2019).
- Digital devices can be used to enhance a child's learning and develop academic skills Neumann (2016).

What can you do?

- Be clear on age limits for applications or websites your child uses (UKCCIS, 2015).
- Talk about online risks with your child (Parent Zone, 2013).
- Supervise young children's screen time and be aware of the time spent there (Kidron and Rudkin, 2017)
- Teach your children how to be kind to others online and how their actions have consequences (Kidron and Rudkin, 2017; ThinkUKnow.co.uk, 2019)
- Work as a team with your child and set digital rules together (Internet Matters.org, 2019)
- Make the whole family aware of what is expected when using digital devices- Team work! (Get Safe Online, 2013)

Parental Controls

Internet Matters.org (2018b) state that children should be given the freedom to explore the digital world with their curiosity but it is important we protect their web surfing by using parental controls.

Parental controls are specialised settings that help filter out unwanted content on your child's digital device (NSPCC, 2015).



9/10 parents who use Parental controls on their children's devices said they found it helpful. (Internet Matters.org (2018b))

Lets talk about that...

Young Minds (2018) state that the best way to support a child is to talk and let them know you are there to give them your full support. In a world filled with digital devices its hard to fully protect children even with parental controls. In order to keep children safe online then we need to first be on their level and understand their digital world and then speak about the risks that come along with it.

Ask your child...

- "What do you enjoy doing online?"
- "How do you stay safe online?"
- "What kind of things can you/not share online?"
- "Do you know how to find help online?"

(UK Safer Internet, 2014)



Are they old enough?

Module Code: EAAE6006/C

Student Number: 1805243



Instagram
13+



Kik
13+



TikTok
13+



Snapchat
13+



Roblox
7+

FORTNITE

Fortnite
12+

(NSPCC, 2019)

(Google image, n.d)

UKCCIS

The UK Council for Child Internet Safety

More than 200 organisations taken from different sectors working together to keep children safe when online (UK Government, 2018).

Achievements to date:

- Making the choice for parental controls on home broadband unavoidable.
- Designed a Friendly WiFi logo so inform parents of public places that have filtered unsuitable websites.
- Created multiple guides filled with research to support parents and professionals with online safety.

All guides are available on the Gov.uk website. (UK Government, 2018).

Who can help?

Parent Zone – Parent Zone are an online organisation that provide support to the public about navigating the digital world safely. The aim is to provide parents with information to help their children and provide children with information to become digitally literate. (Parent Zone, 2017). The website provides information regarding popular websites and applications your children may be using.

Internet Matters.org – They understand that the world that children experience today is a lot different than the world their parents knew. So working together with leading broadband providers, Internet Matters.org aims to empower caregivers to keep their children safe online. (Internet Matters.org, 2020). The website provides a number of ways to keep your children safe online with helpful guides and videos.

NSPCC – The NSPCC are currently campaigning for a law to be passed by the Government to make social networking safer for children (NSPCC, 2018). The website provides parental guides and information on how to set up parental controls on your child's device.

Think U Know – Think you know is an organisation run by the National Crime Agency, they aim to keep children safe by providing information about sexual abuse and exploitation including that which happens online. (ThinkUKnow, 2015). The website has parental guides and information as well as child friendly informative videos about online safety.

Next steps...

After learning the information about the digital world the only thing left to do is to go and do your best to educate and protect your child in their digital journey! SafetyNetKids (2015) provide good advice for you to share with your children; the top 5 include:

- Do not post personal information online.
- Think carefully before putting photos of yourself online, everyone can see them!
- Keep your privacy settings on.
- Never share your password.
- Do not add people you don't know.

Activity Plan		
Activity: Summer bug hunt		
Number of children: 6	Age of children: 6-7	Number of adults: 1
Location: School field and classroom.	Preparation time: 10 minutes	Activity time: 40 minutes
Resources: <u>Field</u> ○ 6 Clipboards ○ 6 Pencils ○ 6 Pieces of A4 paper ○ 3 Rubbers <u>iPads</u> ○ 6 iPads ○ Data collected from field on A4 paper		
Aim/s of activity: ○ Create an independent data collection sheet using their chosen format i.e. Tally chart, graph, sketches. ○ Use previous knowledge of habitats to look for different insects. ○ Use data collected to create a pictogram using iPad application. ○ Use the internet to find an appropriate image of the bugs they found on their bug hunt, save the image and insert into a pictogram to represent one unit. ○ Label their work with their name and save independently. ○ Speak within a group about their findings using appropriate mathematical language. ○ Support each other with data collection or ICT if needed.		

Links to outcomes:***Foundation Phase***

- Extract and interpret information from lists, tables, diagrams and graphs.
- Gather and record data from: lists and tables, pictograms where the symbol represents one unit.
- Select appropriate mathematics and techniques to use.
- Use everyday and mathematical language to talk about their own ideas and choices.
- Interpret information presented in charts and diagrams and draw appropriate conclusions.

(Welsh Government, 2015).

Digital Competence Framework***Citizenship***

- Add their name and the date to work they have created and give reasons why this is important.

Interacting and Collaborating

- Save work using an appropriate file name.

Data and Computational Thinking

- Record data collected in a variety of suitable formats.

Producing

- Create and edit multimedia components in order to develop text, image, sound, animation and video for a range of tasks.
- Use text when searching for information/media (image, video, sound) and use an internet browser independently.

(Welsh Government, 2020).

Health and safety:

- Discuss risks of field.
- Discuss risks we may cause the environment.
- Basic first aid kit to hand.

Role of adult:

First, the adult should brief the children on what activity they will be doing and where it will be taking place. The adult should then explain the risks of the school field making sure to include risks that we may cause to the environment.

While on the field the adult should:-

- Encourage children to explore all areas and give ideas of unusual habitats they may not consider.
- Support children with data collection and discuss methods they could use if they seem unsure.
- Discuss what insects are being found and where they are found.
- Ensure children are on task.

When returning to the classroom the adult should:-

- Support children with the function of the iPads if needed.
- Encourage children to talk about their findings using mathematical language; start conversation between adult and child if needed.
- Ensure the children understand what a pictogram is and what each symbol is representing.
- Ensure children are on task.

The activity:

The activity will begin by the adult explaining to the children what the activity is and where it will be taking place. Followed by a talk of the risks that the school field presents and also the risks that they may present to the environment while doing the activity.

Next the children will each be given a clipboard, A4 piece of paper and a pencil and begin making their way to the field with the practitioner. 20 minutes should be spent on the field. Once on the field the practitioner will choose a section of the

field that they will explore first, ensuring that by the end of the time on the field, the whole field has been explored.

The children will be allowed to explore in the designated area independently with the supporting adult there should they need assistance. While the children are exploring the adult is expected to ensure they are on task and encourage them to look in different habitats to locate a number of different insects. Throughout the activity on the field the adult should be discussing what insects were found and where. Once the children have explored the whole field and gathered their results, they will be guided back indoors for the second part of the activity.

Once back indoors children will be given a further 20 minutes to complete the digital part of the activity. This part of the activity allows children to develop their digital competence and independence.

Children will be sat around a table with their results to hand and the adult will give them an iPad. The adult will instruct the children of what application to use and give a demonstration on what to do and how to do it including a demonstration on how to search the internet for appropriate images. The children are then expected to complete the activity as independently as possible with the adult there for support if needed. While the children are working on the iPads the adult should be encouraging mathematical language and talk amongst them using phrases such as “more/less than”, “most/least” and general talk of numbers. While the children are using the iPads the adult is to ensure all children are on task. Once the children are finished, they are to label their work with their name and save it to an appropriate place instructed by the adult.

Critical Evaluation of ICT Activity

The activity planned was split into two parts with the aim of being fun and child led. Welsh Government (2018b) note how child led and play based activities are an essential part of how children learn. Part one involved exploration of the school field to find insects and recording how many of each bug was found. Part two of the activity was based indoors where the children were provided with iPads to create a digital pictogram of their findings. The purpose of part one of the activity was to encourage the children to take their learning outdoors to engage with nature and experience an environment with natural materials and trees as opposed to a classroom environment. O'Brian (2009) states that learning outdoors can have positive impacts on children's development, and there is growing concern about the amount of access they have to nature. Institute for Outdoor Learning (2017) agree, stating that the outdoor environment provides personal and social benefits, in addition to cognitive. Another purpose of part one of the activity was for the children to use their own method of data collection. Practice (2018) states that it is imperative for children to be independent in their maturity. The purpose of part two of the activity is to promote children's digital literacy, which was achieved by including the iPads in the activity. Donaldson (2015) states that children must be digitally competent in order to be successful in their future.

Benefits of this activity include using the outdoors as a learning space for children. McCarthy (2018) discusses how, when children experience the outdoors, it gives them more physical activity, develops their executive function, they learn how to take risks and appreciate nature. As well as these benefits, Unicef (2013) states that children have the right to play outdoors, via Article 31 of the UNCRC, as well as Article 29 which includes a child's right to an education setting that is optimal for them – whether indoors or outdoors. However, the second part of the activity involved the children sitting at a table, where movement was limited, and the activity took on a more sedentary nature. Although not beneficial to the physical development of the child, the second part of the activity aided in the development of digital literacy and competency. Donaldson (2015) states that competence underpins everything that a child does throughout the curriculum and further on in life. In an age almost defined by technology, the need to teach children the skills needed to thrive in a technological world has become more apparent. If technology is used in a strategic fashion during

teaching, the learning can often be better than if it was not included at all (Mohamed, 2019). Educational inspectorate, Estyn (2013) believe that technology has had a positive impact on children's learning and engagement with their studies.

An additional benefit of the activity is that it allowed children to develop their mathematical abilities. This part of the activity also allowed children to use mathematical language, devise a personal method of recording and interpret presented information which the Welsh Government (2015) state is a requirement of the Foundation Phase curriculum – from nursery to Year 2.

However, we must consider how much screen time children are having in school as they may be exposed to more screens at home. Rosen et al. (2014) state that it is recommended that all children have a limited screen time. Having a 20 minute time limit on the activity allowed the children's screen time within school to be monitored and controlled to reduce their exposure while in the schools care.

Welsh Government (2018a) released the Digital Competence Framework in 2016 and state that it is a set of skills that allow an individual to become confident in the use of technology and therefore become a digital citizen. The Digital Competence Framework is a requirement within schools as Donaldson (2015) introduced a cross-curriculum requirement to set up future generations for success. Welsh Government (2018a) state that these digital skills are to be achieved by learners between the ages of 3 and 16. The skills are set across four strands; Citizenship, Interacting and Collaborating, Producing and Data and Computational Thinking. The planned activity meets all four strands detailed within the Digital Competence Framework. The Producing strand was met by children creating their own digital media and editing text and images when required, as well as using an internet browser to search for an appropriate image relative to the task. The remaining three strands were also lightly met – Citizenship by adding their name and date to their work, Interacting and Collaborating by saving work under an appropriate file name and Data and Computational Thinking by recording collected data.

There are different views and opinions on the way that children learn. McLeod (2018) states Jean Piaget believed that children's thinking differs to that of adults and that they are what he called active learners. He believed that children learned from hands-

on and real, concrete experiences and that, only then, could they progress to understand the world around them. However, McLeod (2018) states Lev Vygotsky believed that social interaction plays a significant role in children's cognitive development, and that peers are needed to support the child in order for them to acquire knowledge. The planned activity satisfies both of these theories. Part one of the activity, the outdoor experience, supports Jean Piaget's theory of hands-on learning as well as Lev Vygotsky's sociocultural theory. Part two of the activity supports Lev Vygotsky's theory as the children were able to support one another and extend each other's knowledge on the task.

Reference List

Allen, M.L., Heartley, C. and Cain, K. (2016) 'iPads and the Use of "Apps" by Children with Autism Spectrum Disorder: Do They Promote Learning?' *Frontiers in Psychology*. Available at: <https://doi.org/10.3389/fpsyg.2016.01305> (Accessed: 26th February 2020).

Boston University Medical Center (2015) Mobile and interactive media use by young children: The good, the bad and the unknown. Available at: https://www.eurekalert.org/pub_releases/2015-01/bumc-mai013015.php (Accessed: 26th February 2020).

Clipart Library (n.d) *Happy Kids Clipart*. [image] Available at: <http://clipart-library.com/clipart/kiKBMpjyT.htm> (Accessed: 27th February 2020).

Chassiakos, Y.R. et al. (2016) 'Children and Adolescents and Digital Media' *The American Academy of Paediatrics*, 138(5). (Accessed: 26th February 2020). DOI: 10.1542/peds.2016-2593

Donoldson, G. (2015) *Successful Futures: Independent Review of Curriculum and Assessment Arrangements in Wales*. Available at: https://moodle.uwtsd.ac.uk/pluginfile.php/334408/mod_resource/content/1/Successful%20futures.pdf (Accessed: 26th February 2020).

Drago, E (2015) 'The Effect of Technology on Face-to-Face Communication' *The Elon Journal of Undergraduate Research in Communications*, 6(1), pp. 13-19. (Accessed: 26th February 2020).

Dunn, J. and Sweeney, T. (2018) 'Writing and iPads in the early years: Perspectives from within the classroom', *British Journal of Educational Technology*, 49(5), pp. 859-869.

Durkee, T. et al. (2012) 'Prevalence of pathological internet use among adolescents in Europe: demographic and social factors' *Addiction*, 107(12), pp.2210–2223. (Accessed: 26th February 2020).

Education Endowment Foundation (2018) *Digital Technology*. Available at: <https://educationendowmentfoundation.org.uk/evidence-summaries/teaching-learning-toolkit/digital-technology/> (Accessed: 26th February 2020).

Estyn (2013) *The impact of ICT on pupils' learning in primary schools*. Available at: <https://www.estyn.gov.wales/sites/www.estyn.gov.wales/files/documents/The%20impact%20of%20ICT%20on%20pupils%20learning%20in%20primary%20schools%20-%20July%202013.pdf> (Accessed: 28th February 2020).

Get Wired (2015) Get Wired 2015 - Dr Elizabeth Evans - Safe Wireless Use + The Precautionary Principle [video]. Available at: <https://www.youtube.com/watch?v=7JzSN3PWCRY> (Accessed: 26th February 2020).

Get Safe Online (2013) *Safeguarding Children*. Available at: <https://www.getsafeonline.org/safeguarding-children/under-5/> (Accessed: 27th February 2020).

Gottschalk, F (2019) 'Impacts of Technology Use on Children: Exploring Literature on the Brain, Cognition and Well-Being' *Organisation for Economic Co-operation and Development*, 3(195), pp. 3-44. (Accessed: 26th February 2020).

Healy, J.M. (1998) *Failure to Connect*. Available at: <http://www.sfu.ca/educ260/Healy%208.pdf> (Accessed: 26th February 2020).

Huber, B., Highfield, K. and Kaufman, J. (2018) 'Detailing the digital experience: Parent reports of children's media use in the home learning environment' *British Journal of Educational Technology*, 49(5), pp.821-833.

Institute for Outdoor Learning (2017) *About Outdoor Learning*. Available at: <https://www.outdoor-learning.org/Good-Practice/Research-Resources/About-Outdoor-Learning> (Accessed: 27th February 2020).

Internet Matters.org (2018a) *Screen Time*. Available at: <https://www.internetmatters.org/issues/screen-time/> (Accessed: 27th February 2020).

Internet Matters.org (2018b) *Parental Controls*. Available at: <https://www.internetmatters.org/parental-controls/> (Accessed: 27th February 2020).

Internet Matters.org (2019) *Screen Time Tips*. Available at: <https://www.internetmatters.org/resources/screen-time-tips-to-support-5-7-year-olds/> (Accessed: 27th February 2020).

Internet Matters.org (2020) *About Us*. Available at: <https://www.internetmatters.org/about-us/#supporting-parents> (Accessed: 27th February 2020).

Kardefelt-Winther, D (2017) *How does the time children spend using digital technology impact their mental well-being, social relationships and physical activity?* Available at: <https://www.unicef-irc.org/publications/pdf/Children-digital-technology-wellbeing.pdf> (Accessed: 26th February 2020).

Kidron and Rudkin (2017) *Digital Childhood*. Available at: https://5rightsfoundation.com/static/Digital_Childhood_report_-_EMBARGOED.pdf (Accessed: 26th February 2020).

Lorah, E. R., Parnell, A., Whitby, P. S., and Hantula, D. (2015). A systematic review of tablet computers and portable media players as speech generating devices for individuals with autism spectrum disorder. *J. Autism Dev. Disord.* 45, 3792–3804. doi: 10.1007/s10803-014-2314-4

Lynch, J. and Redpath, T. (2014) “Smart’ technologies in early years literacy education:

A meta-narrative

of paradigmatic tensions in iPad use in an Australian preparatory classroom’, *Journal of Early Childhood Literacy*, 14(2), pp.147-174. DOI: 10.1177/1468798412453150 (Accessed: 26th February 2020).

McCarthy, C. (2018) *6 Reasons Children Need to Play Outside*. Available at: <https://www.health.harvard.edu/blog/6-reasons-children-need-to-play-outside-2018052213880> (Accessed: 27th February 2020).

McLeod, S. (2018) *Jean Piaget*. Available at: <https://www.simplypsychology.org/piaget.html> (Accessed: 27th February 2020).

McLeod, S. (2018) *Lev Vygotsky*. Available at: <https://www.simplypsychology.org/vygotsky.html> (Accessed: 27th February 2020).

Mohammed, S. (2019) *Is technology good or bad for learning?*. Available at: <https://www.brookings.edu/blog/brown-center-chalkboard/2019/05/08/is-technology-good-or-bad-for-learning/> (Accessed: 27th February 2020).

Mooney, C (2000) *Theories of Childhood: An Introduction to Dewey, Montessori, Erikson, Piaget and Vygotsky*. St.Paul: Redleaf Press.

Morgan, M. and Shanahan, J. (2010) 'The State of Cultivation', *Journal of Broadcasting & Electronic Media*, 54(2), pp.337–355.

Mosharafa, E. (2015) 'All you Need to Know About: The Cultivation Theory', *Global Journal of HUMAN-SOCIAL SCIENCE: A Arts & Humanities – Psychology*, 15(8), pp. 23-37.

National Literacy Trust (2016) *The Use of Technology to Support Literacy in the Early Years in 2015*. Available at: <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: 26th February 2016).

Neumann, M. (2016) 'Young children's use of touch screen tablets for writing and reading at home: Relationships with emergent literacy', *Computers and Education*, 97, pp.61-68. DOI: <https://doi.org/10.1016/j.compedu.2016.02.013> (Accessed: 26th February 2020).

NSPCC (2015) *Parental Controls*. Available at: <https://www.nspcc.org.uk/keeping-children-safe/online-safety/parental-controls/> (Accessed: 27th February 2020).

NSPCC (2018) *Wild West Web*. Available at: <https://www.nspcc.org.uk/what-we-do/campaigns/wild-west-web/> (Accessed: 27th February 2020).

NSPCC (2019) *Net Aware*. Available at: <https://www.net-aware.org.uk/networks/?page=5> (Accessed: 27th February 2020).

Nutbrown, C. (2011) *Key Concepts in Early Childhood Education and Care*. 2nd Ed. London: SAGE Publications.

O'Brien, L. (2009) *Learning outdoors: The Forest School approach*. Available at: https://s3.amazonaws.com/academia.edu.documents/50698126/Learning_outdoors_the_Forest_School_appr20161203-14639-1y3frro.pdf?response-content-disposition=inline%3B%20filename%3DLearning_outdoors_the_Forest_School_appr.pdf&X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=AKIAIWOWYYGZ2Y53UL3A%2F20200228%2Fus-east-1%2Fs3%2Faws4_request&X-Amz-Date=20200228T190209Z&X-Amz-Expires=3600&X-Amz-SignedHeaders=host&X-Amz-Signature=88ffb82dc63042aa0a4b1248c18325b99e7e737b2798dc7b9938496516521825 (Accessed: 28th February 2020).

OECD (2019) *What do we know about children and technology?* Available at: <https://www.oecd.org/education/ceri/Booklet-21st-century-children.pdf> (Accessed: 27th February 2020).

Ofcom (2015) *Children and Parents: Media Use and Attitudes Report*. Available at: <https://www.ofcom.org.uk/research-and-data/media-literacy-research/childrens/children-parents-nov-15> (Accessed: 25th February 2020).

Ofcom (2018) *Children and parents: Media use and attitudes report*. Available at: https://www.ofcom.org.uk/data/assets/pdf_file/0024/134907/children-and-parents-media-use-and-attitudes-2018.pdf (Accessed: 27th February 2020).

Parent Zone (2017) *About Us*. Available at: <https://parentzone.org.uk/about-us> (Accessed: 27th February 2020).

Practice, I. (2018) *Children Should Be Allowed To Make Their Own Choices*. Available at: <https://www.ielts-practice.org/children-should-be-allowed-to-make-their-own-choices-band-9-ielts-essay-sample/> (Accessed: 27th February 2020).

Rosen, L.D. (2014) 'Media and technology use predicts ill-being among children, preteens and teenagers independent of the negative health impacts of exercise and eating habits', *Computers in Human Behaviour*, 35, pp.364-375. DOI: <https://doi.org/10.1016/j.chb.2014.01.036> (Accessed: 28th February 2020).

Saefudin, A. and Venus, A. (2007) 'Cultivation Theory', *MediaTor*, 8(1), pp.83–90.

Safety Net Kids (2015) *Staying Safe Online*. Available at: <http://www.safetynetkids.org.uk/personal-safety/staying-safe-online/> (Accessed: 27th February 2020).

Sharma, P. and Harrafin, M.J. (2007) 'Scaffolding in Technology-Enhanced Learning Environments' *Interactive Learning Environments*, 15(1), pp.27-46.

Siraj-Blatchford, I. et al. (2002) *Researching Effective Pedagogy in the Early Years*. Available at: https://s3.amazonaws.com/academia.edu.documents/30902717/RR356.pdf?response-content-disposition=inline%3B%20filename%3DResearching_effective_pedagogy_in_the_early_years.pdf&X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=AKIAIWOWYYGZ2Y53UL3A%2F20200226%2Fus-east-1%2Fus-east-1%2Faws4_request&X-Amz-Date=20200226T135614Z&X-Amz-Expires=3600&X-Amz-SignedHeaders=host&X-Amz-

[Signature=2f484fa1a28688646ef1f6071d3410f58c290aa6bade13c150c0f12713732a2e](#) (Accessed: 26th February 2020).

The Guardian (2013) *How technology and inactive lifestyles are changing our children*. Available at: <https://www.theguardian.com/sustainable-business/technology-inactive-lifestyle-changing-children> (Accessed: 26th February 2020).

The Guardian (2014) *Ofcom: six-year-olds understand digital technology better than adults*. Available at: <https://www.theguardian.com/technology/2014/aug/07/ofcom-children-digital-technology-better-than-adults> (Accessed: 26th February 2020).

ThinkUKnow.co.uk (2019) *Jessie & Friends: online safety education for 4-7s*. Available at: <https://www.thinkuknow.co.uk/parents/jessie-and-friends/> (Accessed: 27th February 2020).

UK Government (2018) *UK Council for Child Internet Safety (UKCCIS)*. Available at: <https://www.gov.uk/government/groups/uk-council-for-child-internet-safety-ukccis> (Accessed: 27th February 2020).

UK Safer Internet (2020) *Staying Safe PS4 Advice for Parents and Carers*. Available at: <https://www.saferinternet.org.uk/blog/staying-safe-ps4-advice-parents-and-carers> (Accessed: 27th February 2020).

UK Safer Internet (2014) *Have a Conversation*. Available at: <https://www.saferinternet.org.uk/advice-centre/parents-and-carers/have-conversation> (Accessed: 27th February 2020).

Unicef (2013) *The Rights of Every Child*. Available at: https://www.unicef.org.uk/child-rights-partners/wp-content/uploads/sites/3/2016/08/CRC_summary_leaflet_Child_Rights_Partners_web_final.pdf (Accessed: 27th February 2020).

Unicef (2017a) *Children in a Digital World*. Available at: https://www.unicef.org/publications/files/SOWC_2017_ENG_WEB.pdf (Accessed: 25th February 2020).

Unicef (2017b) *What is the UNCRC?* Available at: <https://www.unicef.org.uk/what-we-do/un-convention-child-rights/> (Accessed: 27th February 2020).

Unicef (2019) *Unicef Poll*. Available at: <https://www.unicef.org/press-releases/unicef-poll-more-third-young-people-30-countries-report-being-victim-online-bullying> (Accessed: 27th February 2020).

Welsh Government (2015) *Foundation Phase Framework*. Cardiff: Crown.

Welsh Government (2018a) *Digital Competence Framework Guidance*. Available at: <https://hwb.gov.wales/storage/337437b8-cfe3-4305-ae32-f47ad82f3e76/digital-competence-framework-guidance-2018.pdf> (Accessed: 27th February 2020).

Welsh Government (2018b) *How is my child doing in the Foundation Phase?* Available at: <https://gov.wales/sites/default/files/publications/2018-06/how-is-my-child-doing-in-the-foundation-phase-a-guide-for-parents-and-carers.pdf> (Accessed: 28th February 2020).

Welsh Government (2020) *Digital Competence Framework*. Available at: <https://hwb.gov.wales/curriculum-for-wales-2008/digital-competence-framework-curriculum-for-wales-2008-version/framework/#eyJpJlJpbeyJhIjoxfV0sImMiOlt7ImEiOjB9LHsiYSI6MH0seyJhIjowfSx7ImEiOjB9LHsiYSI6MH0seyJhIjowfSx7ImEiOjF9LHsiYSI6MH0seyJhIjowfSx7ImEiOjB9LHsiYSI6MH0seyJhIjowfSx7ImEiOjB9LHsiYSI6MH0seyJhIjowfSx7ImEiOjB9LHsiYSI6MH1dfQ==> (Accessed: 27th February 2020).

Young Minds (2018) *Counselling Services for Children and Young People*. Available at: <https://youngminds.org.uk/find-help/for-parents/parents-guide-to-support-a-z/parents-guide-to-support-counselling-services/> (Accessed: 27th February 2020).

Yu, C. (2013) 'The Integration of Technology in the 21st Century Classroom: Teachers' Attitudes and Pedagogical Beliefs Toward Emerging Technologies' *Journal of Technology Integration in the Classroom*, 5(1), pp. 5-11.