

Section 1

The following paper will include a critical evaluation of the positive and negative aspects of children's access to video games and I-pads.

Welsh Government (2018), Burke and Marsh (2013) and Payton and Hague (2010) emphasis the importance of young children accessing digital technology to develop skills to become digitally literate with the continuous progression in society.

Video games

Children are continuously developing new skills whilst levels of engagement in gaming devices are increasing. Video games are one of many cultural tools to shape cognitive development today in the new world of technology (Payton and Hague, 2010; Kitching, 2013).

Video games influence children's learning and develop digital literacies encouraging abstract and high-level thinking skills. Playing video games exercises and builds the brain by strengthening concentration and requires the brain to react quickly making fast analysis and decisions (Kitching, 2013). During games children will need to multitask, flexible and change tactics quickly that develops hand-eye coordination, fine motor and spatial skills. The child will then coordinate the brains interpretation and reactions to the movement of hands and fingers on the control buttons (Kitching, 2013; Missimer, no date). During this learning process of interoperating information, Piaget theory states children build on existing information through a series of stages. Children compare existing experiences and build upon them with new experiences and information is modified through the process of accommodation of schemas to interpret new skills (Blake and Pope, 2008). Douglas (2009) agrees with Piaget's theory and emphasises the importance of repetition to strengthen connections and memory by developing existing knowledge and skills and replacing with new information.

To reach the next level children will need to take risks to achieve rewards which will require the player to manage resources and logistics through planning, motivation and achievement the same way as in real life situations (Bird et al 2014; Kitching, 2013). Mathematical skills are increased where children solve calculations quickly to plan for the next stage they need to preform (Beauchamp, 2012; Palmer, 2016). Through competition and achievement of reaching the next level children's confidence and self-esteem are increased. However, Palmer (2016) states the rewarding system in gaming discourages children to go outdoors and participate in real play.

Playing video games online with friends involves cooperation to manage individual skills and share ideas contributing to build a successful team and increases collaboration skills (Douglas, 2009; Beuchamp, 2012; Kitching, 2013). Craton (2011) agrees social gaming has many positive influences on children's holistic development however, Craton suggests video gaming should be balanced between a healthy diet, exercise and socialising with friends. Douglas (2009) states children who play online with friends are more empathetic and encourage others to complete the task, where children who played violent games alone were less encouraging and hurtful to other players. Although, Kovess-Masfety (2016) states online gaming is beneficial to individuals who have difficulty communicating and making relationships, allowing relationships to be formed in protection of their natural surroundings improves health and wellbeing.

However, Byron (2008) cited in Kitching (2013) and Burke and Marsh (2013) state video games have inappropriate content for young children where the amount of aggression and violence witnessed by children will reflect on their behaviour in adulthood showing anti-social behaviour, violence and commit crime. Bandura's social learning theory identifies negative behaviour modelled will have impact on the child's behaviour and they will imitate behaviour performed by fantasy characters, although Bandura states these behaviours will not just be performed by the child through imitation they will go through a process of observing the action to mentally processing the consequences of the action and then the behaviour will depend on the child's evaluation of the situation. Craton (2011) agrees stating if the content includes positive aspects then the outcomes will be positive, where negative content may result in negative behaviour. Although, Abrams (2009) cited in Kitching (2013) suggests this is not a true reflection, there is little evidence to prove violent behaviour is learnt from video games.

Craton (2011) states research provides evidence that video games are addictive where children will continue to plan and practice to complete levels are at the same level of individuals with gambling addictions. The World Health Organisation has listed gaming addiction as a mental health condition known as International Classification of Disease (ICD) (Hunt, 2018; Wakefield, 2018). However, Kovess-Masfety (2016) provides research evidence that video gaming does not cause a risk of mental health problems and are beneficial to relieve stress and to improve intellectual functioning and wellbeing. Although, the evidence is not based on the long-term process of continuous use of gaming (Hunt, 2018; Palmer, 2016). However, children playing video games will experience disturbed sleep, skip meals and become isolated

to in gaming creating negative social effects (Chassiakos et al, 2016; Hunt, 2018; Palmer, 2016).

The addiction to video games reduces social interaction and interests in activities outside of school where they would make new friends, and this increases the chances of depression and social phobias. The less physical activities children undertake the more likely they are to become obese, where video games are known to develop poor eating habits and unhealthy lifestyles (Hughes, 2014; Hunt, 2018). However, Baranowski (2015) states most individuals believe the main cause of obesity is gaming, where players are stationary and inactive. Although research indicates individuals watching television are at higher risk of obesity than individuals who play video games and the main cause of obesity is diet and not being physically inactive. Chassiakos et al (2016) emphasises the importance of setting boundaries at a young age to balance time spent on digital devices, socialising and physical activity.

Children's school performance suffers with poor concentration and attention span from the high intensity caused in gaming (Richardson, 2012; Hunt, 2018; Hughes, 2018). However, Craton (2011) and Douglas (2009) explain video games are educational to promote higher levels of understanding and provide a virtual learning experience, where children can experience independent child led experimentation. The virtual worlds encourage interactions and are an enhancement in learning development when used in appropriate ways skills can be transferred towards life skills. In agreement Gibbs (2016) and Kovess-Masfety (2016) expresses the importance of video gaming to develop knowledge delivered at school and increase mathematical, science and reading skills by solving problems in each level of the game and reading the instructions towards the next level, where research evidence shows children who play video games are better in academic achievement. Barr (2017) agrees with evidence stating individuals had higher skills in problem solving than those who did not play video games and played puzzle games instead to improve on the same skills. The variety of skills players require by gaming are beneficial for learning and are desirable attributes in adulthood. Where players have increased knowledge and skills to be motivated and creative with new ideas to accomplish tasks, flexible, recognise problems and propose effective solutions, work as a team and communicate effectively.

I-pads

Research provides evidence of the increase of I-pad owned and used within households during 2014 – 2015 with 50% of young children aged three to seven years old accessing the internet

by an I-pad device which is beneficial for young children's learning skills in digital literacy (Ofcom, 2015; Welsh Government, 2018). However, has the number of digital devices owned increased to become a pacifier for parents. Children who are regularly given an I-pad to calm children down from temper tantrums may lead to developmental issues and repercussions when children need to control their impulses. Where an I-pad has now become equivalent to an everyday comfort blanket for children (Palmer, 2016). Knapton (2015) state children's emotions are vital for emotional development and the skills of emotional competence are influenced with experience and learning, children need to experience this process to learn what it means to do something and to do something about it. Bandura's social theory indicates children encode behaviour, if a child having a temper tantrum and is rewarded with a digital device then the child will perform this behaviour again to earn approval to receive the same award on other occasions, this is a continuous process through learnt behaviour.

Although there is strong evidence regarding reading as having a powerful influence on children to develop empathy and promote their emotional wellbeing as well literacy and academic achievement. I-pads are effective and can support children's literacy and emotional skills using audiobooks (Blackaby, 2018). Children can engage in independent reading with audiobooks where the text to speech enables children to read more complex words, it is also effective for children with limited ability to read or who may have dyslexia and avoid reading due to the lack of confidence and the frustration caused by the activity. The Disabilities Education Act 2004 cited in Sullivan (2019) states the resources provided using an I-pad device adapts to children's needs and is effective to increase learning for children. There are a vast number of audiobooks available to match the children's interest and the text to speech makes the story come alive with the interactive and stimulating screen. Audiobooks are also effective for children with English as an additional language by selecting the option to translate to different languages (Savage and Barnett, 2015; Blackaby, 2018). However, Monteith (1998) and Palmer (2016) explain audio books are beneficial for children's reading skills but the shared reading and interactions with parents are disappearing.

Due to technology progressing quickly it is difficult for parents to control the amount of screen time and children become attached to screens which is extremely difficult to take away once embedded into their daily routines (Palmer, 2016). However, Chassiakos et al (2016) states if parents explain to the children about the use of the device and set boundaries this will encourage children to use the software appropriately. Children should not be discouraged to use digital devices but to embrace them with the understanding and the purpose (Burke and Marsh, 2013).

Palmer (2016) and Knapton (2015) emphasises the continuous use of an I-pad may replace important attributes for young children and the hands-on activities that are valuable for motor skills to develop and can also impact a child's ability to learn maths and science. The I-pad will replace real play in the outdoor environment where children are socially interacting with others through creativity and experimenting by taking risks, building confidence and achievement in the skills they develop by climbing, riding a bike and den building among other important activities to develop a holistic learning approach (Knapton, 2015). Kirkham (2018) and Knapton (2015) agrees stressing that the tapping and swiping interactive screens has impact children's fine motor skills where the muscles are under developed resulting in poor pencil grip and the performance of using of a scissors. However, writing apps share some fundamental characteristics by encouraging a love for letter formation and provide repeated opportunities to practice and reinforce skills.

Ofcom (2015) states it is becoming increasing difficult to monitor children's online activity with the swiping and tapping interactive screens and with the devices replacing televisions it is difficult to monitor the content they are viewing. It is recommended that parents sit and use devise with their children as a social activity instead of passing them off as soon as a problem arises. Chassiakos et al (2016) states the importance of peer interaction and scaffolding to model the appropriate use of the device increases the child's understanding. Vygotsky zone of proximal development theory states with peer interaction the child potential achievement can be increased with guidance and support compared to what the child can do alone.

The Welsh Government (2016) and the Welsh Government (2018) states the content of inappropriate viewing was higher in inconsistent parenting and had negative effects on young children however, parents who actively supported their children provided educational apps and benefited intellectually from the digital device.

I-pads are extremely expensive to buy and maintain and many families are unable to afford them, those children are disadvantaged although by digital literacy being embedded in the school curriculum children will develop skills and knowledge (Ofcom, 2015; Palmer, 2016).

In conclusion digital devices will remain part of the society for the foreseeable future. The devices are effective when demonstrated by the more knowledge other and with the understanding of the appropriate use of the software. However, a balance needs to be emphasised to encourage a healthy lifestyle and long-term research is needed to monitor the positive effects of digital devices for children in adulthood (Welsh Government, 2018).

Section 2

The following paper will include an analysis of the effectiveness of an I-pad and an interactive whiteboard in supporting children's digital literacy skills. Four six-year-old children with different academic levels were provided with a selection of resources and I-pads to encourage independence and choices led by the child's interest, through exploration when engaged in a mini beast hunt (Maynard and Waters, 2014). However, Kalliala cited in Canning (2011) states a selected amount of resources limits the opportunities for independent learning and child-based play creating a direction to shape the child's learning.

The curriculum framework, the digital competence framework and Education for Sustainable Development and Global citizenship highlight the importance to interlink skills through a cross curricular approach develops the child's holistic learning (Department for Children, Education, Lifelong Learning Skills, 2008; Welsh, 2018). However, interlinking digital literacy into the activity does not differentiate between digital play and non-digital play, the digital activity supports and extends non-digital play and in combination strengthens educational value (Spencer, 2013; Welsh Government, 2018). Interlinking the digital competence framework meaningfully within the curriculum encourages children to be aware of the associated risks and demonstrate the appropriate use of the software for children to become digitally literate linking to the citizenship strand in the digital competence framework identity (Kirkham, 2018; Welsh Government, 2018).

Bird et al (2014) and Spencer (2013) state I-pads are effective digital device that allows play-based learning to be achieved. I-pads are transportable, fun, exciting and an accessible tool for young children to be supported and engaged in a child led activity encouraging imaginative and collaborative play. I-pads are transportable and easily assessable for children to photograph and video mini beasts and habitats in the environment using symbolised apps interlinking with the 'creating and element strand in the digital competence framework (Bird et al, 2014; Welsh Government, 2018).

Working in groups stimulates interaction with peers elaborating on new ideas and develops self-confidence and wellbeing to support individuals with different abilities to contribute and develop digital literacy skills included in the activity an outcome for children in the digital competence framework the 'interacting and collaboration element strand' (DCELLS, 2008; Welsh Government, 2018; Roger, 2016; Washington, 2010). Both theorists Vygotsky and

Bruner state language and socializing with peers is crucial for children's learning to develop. Working together to support peers with the digital learning experience encourages children to attempt a task, once the individual builds an adequate amount of confidence the skills will be used to further development and complete the tasks independently. Vygotsky and Bruner state individuals of all ages have experience and knowledge to educate and develop understanding for others, known as the More Knowledge Other (Smidt, 2015; Prichard; 2014). Working within groups develops personal, social and emotional skills, children develop collaboration through active learning and are encouraged to share ideas and question peers. Teamwork influences the child's ability to make decisions and compromise an important life skill for school and adulthood (The Department for Children, Education, Lifelong Learning Skills; 2008). Shared play and group work supported with an I-pad encourages children to share their knowledge and skills of the device and discuss ideas when engrossed in an activity, exchanging skills to expand on the development of digital literacy skills and develop self-confidence and wellbeing (Welsh Government, 2018, Canning, 2011; DCELLS, 2008). However, Turvey et al (2016) states the digital device could have a negative effect on interaction with the focus on the apps included on the device.

The outdoor environment is essential for children to develop concrete knowledge and understanding through first hand experiences, the activity encourages children to be enthusiastic, to explore and become little scientists investigating mini beasts and their habitats in the outdoor environment (Bruce, 2012; DCELLS, 2008; White, 2014). The outdoor environment enables children to learn through tactile exploration of the natural resources to influence knowledge and understanding of the world and increase levels of literacy and mathematical skills through descriptive language to describe the different textures, materials and living things (White, 2013; Robertson, 2014).

The producing strand in the digital competence framework identifies that children need to be familiar with the internet search browser to enable them to research the environment around them from their own personal space and in classroom settings with the use of the world wide web with freedom to explore in safe environments that also develops relationship of learning in the school and home environment (Welsh Government, 2018; Beauchamp, 2012). The I-pad supports the children with access to the internet encouraging children to personalise their research, find answers and extend learning according to individual's personal interests (Beauchamp, 2012; Kitching, 2013; Welsh Government, 2018) Children are using the I-pads to explore in a safe environment, acknowledging the purpose of the activity and accomplishing

strands of the success criteria interlinking with the producing strand within the DCF (Welsh Government, 2018). In correspondence to Piaget's theory, Piaget's theory indicates independent experimentation and problem solving is beneficial for the child to develop with opportunities to research answers and consolidate new information with time to reflect to increase the development of learning (Maynard and Waters 2014; Washington, 2010). Piaget's theory of schemas states time is essential for children to acquire new experiences to build upon existing schemas through repetition and pattern building, the process replaces old schemas with new schemas and extends cognitive structures through a process Piaget called the accommodation stage (Pound, 2011; Bruce, 2012). Children need time to explore and interact to gain better knowledge and build on prior experiences and skills to enhance development, (Fumoto, 2012; Welsh Government, 2018; DCELLS, 2008).

Following the mini beast hunt activity children can build on existing understandings of literacy and transition their learning to new digital literacies. The interactive whiteboard is used to ensure children stay focused when individuals feedback on the information collected during the activity, sharing their experience with use of a large photographic images on the screen relating to the activity and answering questions to assist children's digital learning (Bird et al, 2014). The interactive and collaborating and the data and computational strand in the DCF recommendations encourage children to listen and follow instructions by successfully saving and sharing of information (Welsh Government, 2018). The I-pad is effective to upload photographs and videos taken by the children to share experiences instantly with peers, enabling children who are shy or have difficulty verbally expressing information to be included in the discussion by sharing their experience through visual images and videos on the interactive whiteboard (Turvey et al, 2016; Welsh Government, 2018). Montessori indicates that language is a powerful tool for learning offering support and guidance during the activity enables children with a variety of abilities to participate and develop self-esteem and well-being (Bruce, 2012).

The mini beast hunt provides opportunities for several extension activities for the children to develop digital literacy skills on the I-pad with the easy to use apps (Spencer, 2013). The apps are most effective when modelled by the teacher or the more knowledge other by use of the interactive whiteboard to maximise learning opportunities, to demonstrate strategies appropriate for use of the software (Welsh Government, 2018, DCELLS, 2008).

Monteith (1998) states interaction between teacher and technology is a successful approach to enhance learning. The apps are successful tools to encourage children to learn through play to take risks and expand learning and digital skills through an exciting and interactive process (Bird et al, 2014; Turvey et al, 2016; Welsh Government, 2018).

Turvey (2016) and Monteith (1998) states it is important to model the use digital devices by demonstrating on an interactive whiteboard to enable the whole class to see, discuss and ask questions and is effective to encourage enthusiasm within the lesson delivering strong visual impact demonstrates clarity, keeps children engaged and creates an enthusiastic lesson.

The I-pad provides apps that are accessible by young children, record audio, video, make animations, create online content and work with digital images. I-pads are educational and provide opportunities for children to work together and engage in digital forms of literacy as recommended in the DCF strand interacting and collaborating. Encouraging individuals who have difficulty with handwriting to video or audio record raising self-confidence and building momentum to engage in the activity (Bird et al, 2014; Welsh Government, 2018). I-pads are an effective device for children to take risks by playing to develop digital skills (Chassiakos et al, 2016; Welsh Government, 20018; DCELLS, 2008). Dress up and role play influence children to present information and knowledge in different formats through I-movies, audio books and green screen apps provide realistic events and adapt to support those with special additional needs and disability with difficulties to express ideas in a fun and interesting way (Sullivan, 2019; Welsh Government, 2018; DCELLS, 2008). The producing strand in the DCF indicates a variety of apps allows children to produce digital animations encouraging authentic learning and imagination in a creative and unique way developing the child's digital literacy skills (Welsh Government, 2018).

‘All children and young people must be provided with an education that develops their personality and talents to the full’ (United Nations Conventions on the Rights of the Child, 1989; Children and Young People: Rights to Action, 2004).

Payton and Hauge (2010) state by providing digital devices children are exposed to thinking creatively and imaginatively to present information in different formats. Providing children with several learning opportunities can support individual learning styles with opportunities to extend learning and develop greater understanding (Spencer, 2013; Maynard and Waters, 2014;

DCELLS, 2008; Welsh Government, 2018). Access to a variety of learning content differentiates learning for individuals and increases their understanding and skills, providing overall evidence on the academic level of the child (George Lucas Educational Foundation, 2013; DCELLS, 2008). Howard Gardiner's multiple intelligences theory supports the importance to ensure there are opportunities for children to learn through a variety of content, proposing individuals process information in different ways. Gardiner explains individuals have unique intellectual strengths that are important to learning, for information to be clear and understood a variety of content will assist with individual's preferred way of learning (Pound, 2011; Bruce, 2012).

Overall the mini beast hunt activity supported by an I-pad encourages children to explore the world around them through digital media. The I-pad does not detract from other activities and explorations it adds to the knowledge of outdoor experiences and encourages a healthier learning environment. The activity is a cross curricular developing literacy and numeracy skills interlinked with the elements in the digital competence framework (Welsh Government, 2018).

The activity provides a variety of real-life experiences, where children show enthusiasm and are engrossed for a long period of time led by their own interests with support of the I-pad representing the more knowledge other (White, 2014; Wood, 2015).

The mini beast activity stimulates the senses providing personal contact with meaningful sensory experiences, offering real life opportunities to experience the textures, movements and the temperatures of living things. The outdoor space is crucial to improve mental health and well-being provides children with special educational needs and disabilities a calm and relaxed sensory environment to express knowledge and understanding of the activity through use of a variety of digital formats (Waters, 2013; DCELLS, 2008; Wood, 2015).

The digital competence framework sets a foundation for digital skills that is important for children to learn the appropriate use of media in school, at home and for future skills in adulthood because digital devices are part of today's society. On inspection Estyn will include an inspection on teaching practice of delivering the digital competence framework and the benefits for children's learning (Welsh Government, 2018).

Section 3

On line support parents and children

With the increase in the use of the internet it has quickly become an essential part of daily life in society, for emailing, playing games, social networking, searching the web and much more.

While digital devices are beneficial and exciting to keep in touch with friends and family there are always risks involved.

(Welsh Government, 2018; Ofcom, 2015)



(Source: freepik.com, no date)

Statistics show;

- 90% of children aged 5–15 years old are accessing online media.
- 40% of children aged 5-15 years old own a digital device.
- 15% of children 3-5 years old own a digital device.
- 50% of children are accessing online content via tablet/ I-pad.

(Ofcom, 2015; Welsh Government, 2018)

Your child's safety is important!

Supporting your child online activities

Children are going online at a very young age they love using new digital devices and see the online world as creative, fun and exciting (Chassiakos et al, 2016; Ofcom, 2015). Engaging in digital devices is essential for children, they lay foundations to increase the development skills in the digital world (Welsh Government, 2016; Welsh Government, 2018). It is important for parents/carers to interact and support children's use of devices, to demonstrate the appropriate use of software and to improve their skills, knowledge and understanding. However, the variety of transportable screen devices makes it difficult to monitor the content viewed.

(Chassiakos et al, 2016; Ofcom, 2015)

Safety measures

Legislation was put in place for all internet and mobile phone providers to provide a service to filter and exclude inappropriate content (Great Britain, 2012).

- Set up parental controls through the broadband supplier.
- Install the web safe browser (Internetmatters.org)
- Set safety filters with privacy and settings to the highest level on digital devices. (Internetmatters.org)

Only 6% of parents/carers have filters installed on devices and only 10% have installed safe search engine websites and parental guidance which is a concern (Welsh Government, 2018). Parents and carers question, how to set up these controls?

- The NSPCC (2019) provide guidance on setting up parental controls
<https://www.nspcc.org.uk/preventing-abuse/keeping-children-safe/online-safety/>

90% of parents of children aged 5-15 years olds found these safety measures beneficial and safeguarded children from the correct amount of inappropriate content (OFCOM, 2015).

How you can help children to be safe online

- Be involved with your child's internet use.
- Discuss the risks involved with explanations of contacting people via the internet.
- Set rules on the time spent online.
- Encourage children to talk to someone they trust if they are worried or upset by something online.
- Important that children are educated on how to act safely and responsibly online just like in the real world.
- Create a family email address.
- Disable in-app purchasing to monitor age appropriate apps.
- Turn off location services.

(Internetmatters.org, ; Ofcom, 2015)

Social networking

Social networking sites encourage children to create an online identity before allowing children to interact with other users (Chassiakos et al, 2016).

Children accessing online social networking sites without knowing the risks involved will increase the chances that they could be talking to someone who is not what they say they are (Internet matters, 2019).

It is important children understand that a friend is someone you know and meet regularly in the real world. An online friend is a stranger may not be who they say they are and only say what they want you to believe and what you want to hear (Internet matters, 2019).

Children's chat danger website provides true stories gives details about the potential risks and dangers on interactive services and how to keep safe while chatting online (Internet matters, 2019; NSPCC, 2019).



(Source:

Colourbox.com, no date)

Online gaming

Gaming online reveals identity the same way as social networking sites, it is important to educate children on the potential risks of giving out personal information.

Games have age ratings to safeguard children from inappropriate content it is important to follow the guidelines and discuss the reasons with children. If your unsure ask the retailer or play the game yourself.

(OFCOM, 2015; Blackaby, 2018)

Advice for children to stay safe online

- Do not give out personal information to online friends, including name, address, phone number or email address.
- Do not meet online friends, unless supervised by a parent or guardian.
- Do not accept text messages or emails from unfamiliar people as they may contain viruses or harmful and violent content.
- Never send pictures of yourself.

(Internet matters, 2019; Welsh Government, 2018)

Cyberbullying

Children need to be educated on how to behave responsibly when accessing social networking sites and they need to be aware they are public sites, so it is important to avoid posting anything that could express them to danger (childnet international, 2019; Internet matters, 2019).

Social networking sites like Facebook, YouTube, Instagram and snapchat may be misused and lead to cyberbullying (childnet international 2019).

Children need to recognise cyberbullying and talk to someone they trust to express feelings affecting them to make sure the correct actions are taken to report the incident. (UNCRC, (); childnet international 2019).

‘Helping children and young people support and educate each other about the impact and consequences of bullying online can be a really effective way of combatting cyberbullying’

(childnet international 2019).

Children’s online protection at school

Digital devices within school are monitored by teachers and are protected with safety filters with privacy and settings to the highest level.

The digital competence framework which is interlinked within the school’s curriculum sets achievable outcomes for children, including the element to protect identity and make responsible choices when online (Welsh Government, 2018).

Recommended websites and resources

- The NSPCC (2019) provide information for parents to help children stay safe online <https://www.nspcc.org.uk/preventing-abuse/keeping-children-safe/online-safety/>
- The NSPCC (2019) provide guidance on setting up parental controls <https://www.nspcc.org.uk/preventing-abuse/keeping-children-safe/online-safety/>
- Talk about online safety, free phone number 0808 800 5002 (NSPCC, 2018).
- Internet matters.org. ‘Helping parents keeping their children safe online’ <https://www.internetmatters.org/>

Reference list

Barr, M. (2017) 'Video games can develop graduate skills in higher education students: A randomised trial' *Computers & Education*, Volume 113, October, pp. 86-97. [On-line]. Available at: <https://doi.org/10.1016/j.compedu.2017.05.016> [Accessed: 22nd February 2019].

Baranowski, T. (2015) 'Might Video Games Help Remedy Childhood Obesity?', *New Rochelle*, Volume 11, No. 4, August, pp. 331-334. [On-line]. Available at: https://search-proquest-com.ezproxy.uwtsd.ac.uk/docview/1701281657?accountid=130472&rfr_id=info%3Axri%2Fsid%3Aprimo [Accessed: 21st February 2019].

Beauchamp, G. (2012) *ICT in the Primary School; from Pedagogy to Practice*. England: Pearson Education Limited.

Bird, J., Caldwell, H. and Mayne, P. (2014) *Lessons in Teaching: COMPUTING IN PRIMARY SCHOOLS*. London: SAGE Publications.

Blackaby, D. (2018) 'The Benefits of Ear-Reading' <https://www.edutopia.org/article/benefits-ear-reading> [Accessed: 17th February 2019].

Blake, B. and Pope, T. (2008) 'Developmental Psychology: Incorporating Piaget's and Vygotsky's Theories in Classrooms', *Journal of Cross-Disciplinary Perspectives in Education*, Volume 2, No.1, May, pp.59-67. [On-line]. https://people.wm.edu/~mxtsch/Teaching/JCPE/Volume1/JCPE_2008-01-09.pdf [Accessed: 21st February 2019].

Bruce, T. (2012) *Early childhood practice: Froebel Today*. London: Sage.

Burke, A. and Marsh, J. (2013) *Children's Virtual Play Worlds: Culture, Learning and Participation*. New York: Peter Lang Publishing Inc.

Canning, N. (2011) *Play and Practice in the Early Years Foundation Stage*. London: Sage Publications.

Chassiakos, R., Radesky, M. D., Christakis, D., Megan, A. and Moreno, M. D. (2016) 'Children and Adolescents and Digital Media', *FROM THE AMERICAN ACADEMY OF PEDIATRICS*, Volume 138, No. 5, November.[On-line]. Available at: <http://pediatrics.aappublications.org/content/pediatrics/138/5/e20162593.full.pdf> [Accessed: 15th February 2019].

Childnet International (2019) 'Cyberbullying Guidance: Cyberbullying; understand, prevent and respond' <https://www.childnet.com/ufiles/2-Preventing-cyberbullying1.pdf> [Accessed: 22nd February 2019].

Colourbox.com. (No date) https://image.colourbox.com/vector-gratis/fondo-dibujado-a-mano-con-senal-wifi-y-dispositivos-electronicos_23-214767654.jpg

Craton, J. (2011) 'The Effect of Videogames on Student Achievement'
<http://www.acsd.org/article/the-effect-of-videogames-on-student-achievement/> [Accessed: 13th February 2019].

Department for Children, Education, Lifelong Learning and Skills. (2008) *Skills Framework for 3 to 19-year-olds in Wales*. Cardiff: Welsh Assembly Government.

Douglas, A. (2009) 'Video Games Affect the Brain—for Better and Worse'
https://www.dana.org/Cerebrum/2009/Video_Games_Affect_the_Brain%E2%80%94for_Better_and_Worse/ [Accessed: 20th February 2019].

Freepik.com. (No date) https://image.freepik.com/vector-gratis/fondo-dibujado-a-mano-con-senal-wifi-y-dispositivos-electronicos_23-2147630488.jpg [Accessed: 28th February 2019].

Fumoto, H. (2012) *Young Children's Creative Thinking*. London: Sage.

George Lucas Educational Foundation (2013) 'Multiple Intelligences: What Does the Research Say?'. <https://www.edutopia.org/multiple-intelligences-research> [Accessed: 15th February 2019].

Gibbs, S. (2016) 'Positive link between video games and academic performance, study suggests', Online Newspaper. [On-line]. Available at:
<https://www.theguardian.com/technology/2016/aug/08/positive-link-between-video-games-and-academic-performance-study-suggests> [Accessed: 21st February].

Great Britain: Department for Health (2012) *Online Safety Bill*. London. HMSO.

Hughes, E. (2014) 'Effect of Video Games on Child Development'
<https://my.vanderbilt.edu/developmentalpsychologyblog/2014/04/effect-of-video-games-on-child-development/> [Accessed: 15th February 2019].

Hunt, S. (2018) 'Interview' In: *CBC NEWS World Health Organization plan to declare gaming addiction a mental disorder inevitable*. CBC News. [On-line]. Available at:
<https://www.cbc.ca/news/canada/calgary/video-game-addiction-declared-mental-disorder-who-1.4478971> [Accessed: 17th February 2019].

Internet matters.org. (2019) 'Helping parents keeping their children safe online'
<https://www.internetmatters.org/> [Accessed: 19th February 2019].

Kikham, G. (2018) 'Young Children (0-8) and Digital Technology. A qualitative study across Europe', *Charles University Prague, Faculty of Education*, Volume 68, No. 3, pp. 329-336. [On-line]. Available at: <https://web-a-ebsohost-com.ezproxy.uwtsd.ac.uk/ehost/detail/detail?vid=0&sid=5502d245-419c-4e46-b514-d1a288fc8f4e%40sessionmgr4009&bdata=JnNpdGU9ZWwhvc3QtbGl2ZQ%3d%3d#AN=134096602&db=eue> [Accessed: 19th February 2019].

Kitching, L. (2013) 'Playing Games: Do Game Consoles have a Positive Impact on Girls Learning Outcomes and Motivation?', *European Journal of Open Distance Learning*, Volume 16, No. 2. [On-line]. Available at: http://www.eurodl.org/materials/contrib/2013/Kitching_Wheeler.pdf [Accessed: 15th February 2019].

Knapton, S. (2015) 'Using ipads to pacify children may harm their development, say scientists' *The Telegraph*, 1 February, pp.3. [On-line]. Available at: <https://www.telegraph.co.uk/news/science/science-news/11382711/Using-iPads-to-pacify-children-may-harm-their-development-say-scientists.html> [Accessed: 20th February 2019].

Kovess-Masfety, V., Keyes, K., Hamilton, A., Gregory, H. and Adina, B. (2016) 'Is time spent playing video games associated with mental health, cognitive and social skills in young children?', *Heidelberg*, Volume 51, No. 3, March, pp. 349-357. [On-line]. Available at: https://search-proquest-com.ezproxy.uwtsd.ac.uk/docview/1776598438?accountid=130472&rfr_id=info%3Axri%2Fsid%3Aprimio [Accessed: 21st February 2019].

Maynard, T. and Waters, J. (2014) *Exploring Outdoor Play in the Early Years*. England: Open University Press.

Missimer, R. (no date) 'The Impact of Video Games on Children' <https://www.healthguidance.org/entry/11051/1/The-Impact-of-Video-Games-on-Children.html> [Accessed: 19th February 2019].

Monteith, M. (1998) *IT for learning enhancement*. Netherlands: Swets and Zeitlinger Publishers.

NSPCC (2019) 'Every childhood is worth fighting for' <https://www.nspcc.org.uk/preventing-abuse/keeping-children-safe/online-safety/> [Accessed: 21st February 2019].

Ofcom (2015) 'Children and Parents: Media Use and Attitudes Report' https://moodle.uwtsd.ac.uk/pluginfile.php/145933/mod_resource/content/1/Ofcom%202015%20children%20and%20parents%20media.pdf [Accessed: 14th February 2019].

Palmer, S. (2016) 'Why the iPad is a far bigger threat to our children than anyone realises: Ten years ago, psychologist SUE PALMER predicted the toxic effects of social media. Now she sees a worrying new danger...', *Daily Mail*, 28 January: pp. 2. [On-line]. Available at: <https://www.dailymail.co.uk/femail/article-3420064/Why-iPad-far-bigger-threat-children-realises-Ten-years-ago-psychologist-SUE-PALMER-predicted-toxic-effects-social-media-sees-worrying-new-danger.html> [Accessed: 18th February].

Payton, S and Hague, C. (2010) 'Digital Literacy in Practice: Case Studies of Primary and Secondary Classrooms'.

http://www2.futurelab.org.uk/resources/documents/projects_reports/digital_literacy_case_studies.pdf [Accessed: 16th February 2019].

Pound, L. (2011) *Influencing Early Childhood Education: Key Figures, Philosophies and Ideas*. England: Open University Press.

Richardson, H. (2012) 'Interview' In: Limit children's screen time, expert urges. BBC News. Available at: <https://www.bbc.co.uk/news/education-19870199> [Accessed: 19th February 2019].

Robertson, J. (2014) *Dirty Teaching: A Beginner's Guide to Learning Outdoors*. Wales: Independent Thinking Press.

Rodger, R. (2016) *Planning an appropriate curriculum in the early years: A guide for early years practitioners and leaders, students and parents*. (4th ed). Oxon. Routledge.

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

Smidt, S. (2015) *Observing Young Children: The role of observation and assessment in early childhood settings*. Oxon: Routledge.

Spencer, P. (2013) 'I-pads- improving numeracy and literacy in the early years' <http://eric.ed.gov/?id=ED573058> [Accessed: 14th February 2019].

Sullivan, J. (2019) 'Assistive Technology: Rethinking Assistive Technology'. <https://www.edutopia.org/article/rethinking-assistive-technology> [Accessed: 21st February 2019].

Turvey, K., Potter, J., Burton, J., Allen, J. and Sharp, J. (2016) *Primary computing and digital technologies knowledge, understanding and practice*. London: Sage publications.

United Nations Convention on the Rights of the Child (1989)
https://downloads.unicef.org.uk/wp-content/uploads/2010/05/UNCRC_PRESS200910web.pdf?_ga=2.180896431.908239707.1551454065-1634854274.1551454065 [Accessed: 19th February 2019].

UK Safe internet centre (2019) 'Online Safety Policy' <https://www.saferinternet.org.uk/> [Accessed: 25th February 2019].

Wakefield, J. (2018) 'Interview' In: *Gaming addiction classified as disorder by WHO?* BBC News. [On-line]. Available at: <https://www.bbc.co.uk/news/technology-42541404> [Accessed: 12th February].

Waters, M. (2013) *Lighting the fire: Hands-on investigation, play and outdoor learning in primary education*. England: Community Playthings.

Washington, D. C. (2010) 'Learning Through Play', *US Fed News Service, Including US State News*, 11th November: pp.1. [on-line]. Available at: https://search-proquest-com.ezproxy.uwtsd.ac.uk/docview/763344892?accountid=130472&rfr_id=info%3Axi%2Fsi%3Aprim%3Aprim [Accessed: 29th September, 2018].

Welsh Assembly Government (2004) *Children and young people rights to action*. Cardiff. Text Processing Service. Available at: <https://gov.wales/docs/caecd/publications/090415rightstoactionen.pdf> [Accessed: 19th February 2019].

Welsh Government (2018) 'Digital Competence Framework Guide' <https://learning.gov.wales/docs/learningwales/publications/180620-dcf-guidance-2018-en.pdf> [Accessed: 15th February 2019].

White, J. (2013) *A good place to be Two: Developing quality environments indoors and out*. England: Community Playthings.

White, J. (2014) *Playing and Learning Outdoors: making provision for high quality experiences in the outdoor environment with children 3-7*. (2nd ed). Oxon: Routledge.

Wood, E. A. (2013) 'Free choice and free play in early childhood education: troubling the discourse', *School of Education, University of Sheffield, Sheffield, UK*, Volume 22, No. 1, 4, 29th July, pp. 18.