YOUNG LEARNERS IN THE DIGITAL AGE

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Introduction

This chapter is about the experiences of young learners as they grow up in home and learning environments where engaging with digital and connected technologies is an established feature of everyday life. Its purpose is to challenge notions of technological determinism and argue for the value of a cultural and critical perspective on children’s encounters with digital technologies. The chapter is written from the perspective of an educational researcher, drawing on empirical and theoretical research literature, and adopting a cultural and critical position that sees contemporary experience as the result of historical technological innovation and knowledge evolution (Stephen & Edwards, 2018). The focus is on the early years, typically considered to be from birth to eight years old. While the research considered will reflect the concentration in the educational literature on the lives of children in western societies, the global and situated reach of the digital age is acknowledged. Attending to the specific historical-cultural processes and contemporary situations experienced in other societies would be illuminating but is beyond the space constraints imposed here.

Central to this chapter is the understanding that 21st-century cultural knowledge (conceptual and practical) and cultural tools (including digital tools) have developed in a historic, social, cultural, and value context and that they in turn create the environment in which children currently grow and learn. This cultural-historical perspective prompts attention to children’s everyday experiences in their particular cultural setting and to understanding the factors that interact to create the specific environment in which each child grows up.

This chapter begins with a brief consideration of ways of thinking about encounters with digital technologies, followed by a review of the nature of young children’s contemporary experience of the digital age. The next section offers an account of the ways in which home experiences shape digital encounters. However, understanding the experience of being a young learner in the digital age also necessitates the account of the impact of individual children’s desires, interests, preferences, and social relationships which follows. The chapter concludes with a discussion of the ways in which a situated, critical position can inform the decisions about children’s encounters with digital technology that confront parents and educators.

Conceptualising Engagement with Digital Technologies

Digital technologies are frequently conceptualised in a binary way as either beneficial or harmful for young children’s development. However, the debate about the potential and perils of children’s
engagement with tablet computers, digital media, mobile phones, apps, and digital games is increasingly sterile and polarised. On the one hand, digital resources are conceptualised as inappropriate for young children, interfering with ‘normal’ developmental patterns and challenging traditional values and expectations about play and learning in the early years. Others extol the amplification of mental labour and ease of access to knowledge resources afforded by digital tools, while organisations concerned with health and wellbeing such as the American Academy of Pediatrics (AAP, 2016) offer guidance on ways of safely managing children’s encounters with new technologies. Nevertheless, while debates rage in the press and parenting literature about the benefits and dangers of young children spending time viewing screens, playing computer games, participating in social media, and accessing the internet, youngsters are growing up in households where the use of digital resources for managing domestic tasks, communication, and leisure has become an established part of family practices and local culture.

Understanding the digital age as a socio-cultural phenomenon, historically shaped and currently experienced in everyday family life and education, moves the debate away from ‘pro’ and ‘anti’ stances to a situated exploration of lived experiences and opens opportunities to consider culturally appropriate and valued forms of response. Selwyn (2010) argues that if understanding is to develop beyond value-laden assertions and generalisations about benefits and harm it is necessary to recognise that encounters with digital technologies are culturally mediated and to focus on the ‘state of the actual’ in everyday life. Stephen and Edwards (2018) suggest that the attention in research and in the media to the extent to which children, particularly young children, make use of digital technologies and to accounts of negative outcomes is similar to the historical reactions, sometimes characterised as moral panic, following the introduction of other innovative technologies, such as radio and television, into home and educational settings. They argue instead for a perspective on change that sees the contemporary experiences of children, their parents, and educators “as a function of the relationship between individuals and their historically derived social, economic, political and cultural circumstances” (Stephen & Edwards, 2018, p. 93). It is this relationship between children and the circumstances that frame their digital experiences that is the focus of this chapter.

Contemporary Digital Experiences in the Early Years

Digital resources are a ubiquitous feature of the everyday lives of young children (including babies) as they experience the centrality of digital technologies to the working and leisure activities of parents and siblings and make ever more use of these resources themselves. National and multinational surveys (e.g., Chaudron, 2015; Common Sense Media, 2017; Ofcom, 2018), sales figures for digital toys and resources for children (e.g., Euromonitor International, 2015; Juniper Research, 2015) and international press coverage (e.g., Prigg, 2014; Cowan, 2016) repeatedly attest to the growth in young children’s ownership of and engagement with digital technologies at home and in educational settings. This trend, often described as a ‘proliferation’ or ‘explosion’ was first noticeable in the late 1990s and accelerated with the advent of smart phones and mobile tablet computing in the 21st century. Furthermore, the evidence suggests that as digital technologies have become “embedded in the day to day” (Caldwell, 2000) new cultural norms are evolving in the ways in which children play, learn, communicate, and socialise in the digital age, particularly since mobile digital technology has become widely accessible. Children of all ages now expect to view television and videos on demand and make extensive use of mobile technologies. While waiting or travelling young children commonly watch videos or play games on a smart phone owned by a parent (Nevski & Siibak, 2016). They maintain contact with physically distant family via Skype or Facetime and the Internet of Things means that children are growing up in homes where domestic appliances and playthings may be connected to the internet.
Despite the concerns raised by some writers on parenting and family life (e.g., Palmer, 2006; Teng, 2013; Huffington Post, 2014), and the growth in access to and engagement with digital technologies suggested by the kind of surveys and sales figures referenced above, the literature suggests that spending time interacting with digital technologies is not simply replacing play and learning with traditional playthings. For example, a detailed qualitative study of the place of digital technologies at home found that while digital technologies were part of family life they did not dominate the everyday experiences of young children at home (Stephen, 2011). Digital technologies such as tablet or laptop computers, smart phones, and interactive educational toys were a feature of children’s home life, but so too were traditional playthings and toys such as toy train sets, dolls, construction sets, board games, climbing frames, dressing up clothes, craft resources, pencils, and paints. This finding was endorsed more recently by Chaudron (2015), reporting on the digital technology experiences of six- to seven-year-olds in seven countries. Drawing on evidence from parents and children this research concluded that “Even though children loved playing digital games and watching videos … Digital technology use is balanced with many other activities, including outdoor play and non-digital toys” (Chaudron, 2015, p. 7). In the USA, although use of mobile technologies has increased, the amount of time each day that 0 to 8-year-olds read or were read to remained steady over five years and overwhelmingly it was printed texts rather than e-readers that were being used (Common Sense Media, 2017).

Young children’s interactions with digital technology are often described as digital play, without addressing the complexities of defining play, the relationship between the typically taken-for-granted features of play (e.g., natural, normal, a right, fun), and the nature of digital activities or the perspectives held on play and playfulness by the children involved (see Grieshaber & McArdle, 2010). Attention to the “state of the actual” (Selwyn, 2010) of children’s everyday play through systematic exploration of naturally occurring play behaviours suggests that it is increasingly difficult to distinguish between traditional play and digital play. Edwards (2014) described young children’s play in the digital age as ranging over a continuum from digital to non-digital, illustrating how a popular culture character (Peppa Pig) could be encountered in mediums from the material (soft toys and clothing), through printed text and scheduled television, to apps and YouTube content. As digital activities have sunk into everyday life so too do children’s play activities blend together traditional and digital resources and activities. On-line viewing prompts physical pretend play, traditional games are enacted in virtual worlds, and figures for small world play or storytelling are downloaded from internet sites. Further research is needed to understand everyday play, social, and creative experiences in the digital age from the perspective of young children, rather than the technological affordances of the resources.

Digital technologies for young children are marketed as supporting learning as well as play and there is a considerable history of claims about the educational potential of digital games and activities (e.g., Haugland, 1999; Plowman & Stephen, 2003; Daugherty et al., 2014). However, good-quality research about the learning outcomes (particularly long-term outcomes) of digital encounters is more scarce (Bolstad, 2004; Turvey & Pachler, 2016). Digital games and activities may indeed extend the range of play and learning opportunities, but exploration of their content suggests that many offer little that is different from traditional learning tools (Stephen, 2015). Digital games, like traditional activities, typically involve familiar cognitive operations such as matching, categorising, counting, and using phonics skills. Fewer foster exploration, problem-solving, and creative expression. Furthermore, much of the research currently available suggests that learning outcomes from digital activities are conditional on a range of factors, such as the ways in which educators employ digital tools (Couse & Chen, 2010) and the inclusion of specific design features which prompt higher order thinking (Verenikina et al., 2010). A study by Stephen and Plowman (2008) points to differentiated outcomes, conditional on the pedagogic practices that surround children’s encounters with digital activities in their educational settings. They
found that children acquired a range of operational skills and curriculum or subject knowledge but the outcome most frequently noted by their educators was the development of positive learning dispositions such as growing confidence and willingness to persist. Similar outcomes from three- to five-year-olds’ encounters with digital technologies at home were noted, along with their growing capacity to participate in family practices such as reviewing photographs, shared video viewing, and on-line shopping and communication (Plowman et al., 2010). However, the researchers went on to point out that these outcomes were conditional on sensitive and responsive adult support with digital activities if children’s experiences were to be positive at home or in their educational setting.

That young children growing up in contemporary times experience digital technologies as a familiar feature of their environment is not in doubt, although these resources have not replaced traditional toys and playthings. However, consideration of the state of the actual suggests that technology-led notions of digital play and claims about digital learning fail to acknowledge the complexities of children’s everyday activities and the role of others in their lives.

**Home as a Digital Niche: The Influence of Parents and Siblings**

The cultural-historical perspective which underpins this chapter draws attention to the ways in which the social and cultural practices, values, and expectations of families create distinct contexts for learning and development (Tudge et al., 2009). Dominant social structural factors such as gender, socio-economic status, and ethnicity make a difference to children’s everyday experience with digital technologies, just as they do in other aspects of their lives (Common Sense Media, 2017). More directly, as illustrated by the studies reviewed below, families mediate digital as well as traditional activities through values and expectations and socially mediated behaviours, creating a particular niche for growing up in the digital age.

For young children especially, parents are the gatekeepers to technology use. It is parents who make purchasing decisions, decide where and when technologies can be used at home, and establish family practices with digital technologies, just as they make decisions about other aspects of family life. Parents can decide if digital technologies are to be used for watching educational or entertainment videos, communicating with distant family, or learning science (Kaufman, 2013). Each family has its own definition of suitable content for books or television programmes and this extends to the digital games and apps to which their children are given access. Marsh et al. (2015) found that parents began with a preference for free apps when choosing digital activities for their young children, then decided between the free resources according to what they expected their child to enjoy, ease of use, and the presence of what they considered to be educational outcomes and topics.

Families develop their own distinct boundaries for access to digital technologies. Parents do report being aware of the concerns, raised in the media and by commentators on contemporary society and family life, about digital activities being associated with negative outcomes, such as physical inactivity and social isolation. However, Plowman et al. (2010) report that despite this awareness, families did not consider digital engagement as a threat to contemporary childhood. Rather, parents argue that they make decisions about their children’s engagement with digital resources in ways which minimise the risks and maximise what they perceive to be the advantages, and that they typically express fewer concerns for their younger children (Plowman et al., 2010; Holloway et al., 2013). In the UK and across Europe parents talk confidently about the efficacy of the ways in which their household has responded by developing rules for access to digital resources, restrictions on time spent with them and on the nature of the content (Chaudron, 2015; Nevski & Siibak, 2016). However, evidence gathered by Marsh et al. (2015) challenges parental claims that they engage with technologies and apps along with their child, suggesting that
parents were typically involved mainly during the initial familiarisation stage with a new app and that thereafter children sought out solo use, albeit with some parental supervision.

Stephen et al. (2013) found that while parents employed a common repertoire of practices to directly support their children’s encounters with digital technologies, each child experienced a distinctive domestic niche which was influenced by three factors: parents’ views on the educative value of engaging with digital technologies; each parent’s typical way of supporting their child’s learning; and the nature of family relationships and ways of interacting. For example, in a household which welcomed commercial digital devices marketed as supporting early learning, a digital reading device was incorporated into the parents’ practices undertaken to support their son’s literacy development before he began primary school. In other homes where explicit preparation for reading was left to the expertise of school teachers, or where parents remained unconvinced of the value of ‘reading devices’, these resources were little used, even when supplied by the research team. In some households children were encouraged to explore independently the content of computer games, only receiving help when frustrated or annoyed by their digital encounters. Others received careful parental tuition about the function and appropriate use of digital games and devices before commencing their play.

Family schedules influence access to digital technologies too. When there are younger siblings at home access to what are considered expensive or fragile resources may be restricted to times when only the oldest child is present (Stephen et al., 2013). Marsh et al. (2015) discovered that children up to eight years of age were most likely to engage with digital resources at home between 4 p.m. and 6 p.m., a time when there are likely to be other domestic demands on parents and children enjoy leisure time after the preschool or school day. Livingstone et al. (2015) found that even families which made little use of new technologies made exceptions when the children were unable to play outside. Family practices in shared leisure time make a difference to opportunities for digital encounters and the value attached to alternative activities. In some homes engaging with digital games is seen as providing an outlet for a child’s competitive behaviours while in other households supportive, collaborative family activities with interactive devices are a regular feature of everyday life (Stephen et al., 2013). Elsewhere children are growing up in households where participating in physical activities such as swimming or cycling at weekends, visiting relatives or participating in creative activities are prioritised by parents, regardless of their access to digital resources. The amount of time that parents spend with digital and print media has been found to be closely associated with the time that their children also spend on various forms of media (Nikken, 2017), suggesting again the influence of family practices and attitudes on children’s everyday experiences and expectations.

Siblings are a further influence on younger children’s everyday experience of home life in the digital age. Evidence from Verenikina and Kervin (2011), Livingstone et al. (2015), Chaudron (2015), and Stephen et al. (2013) points to the ways in which having older siblings influences both the resources in the household, the kinds of digital activities to which young children are introduced, and the technologies and activities to which young learners ascribe high status. Older siblings pass on digital devices which they no longer want, demonstrate how to engage with Facebook, introduce games and apps which are perceived as both desirable and scary by younger children, set appropriate levels of difficulty, give advice and correct mistakes.

Everyday family digital experiences are sites of positive and negative encounters with siblings; times when brothers and sisters offer help and encouragement or when competition in games and ownership disputes occur. The nature of these experiences is not determined by the technology but rather they are the outcome of family dynamics and practices which are present whether children are engaging with sophisticated new technologies or traditional games or playthings. Ten-pin bowling can cause frustration for younger siblings when played with physical or virtual bowls.
It is clear that families make a difference to children’s digital experiences through the distinct developmental niche that evolves, meaning that there can be no assumptions about the experience which each child brings to his or her educational setting or about the determining power of the technologies. But it is not a one-way process; children are active participants in creating the family experiences.

**Young Children: Active Agents in the Digital Age**

Children themselves are active agents in their home and educational environments (James et al., 1998), making choices and pursuing interests. Children may introduce new technologies into their home through their experiences with friends and in their educational settings. Katz (2010) refers to children as media brokers and points to ways in which parents and children can draw on their comparative skills and understandings to make use of new media sources. While that specific study is concerned with the activities of much older children, the research evidence suggests that the agency of young children is an active factor in developing each family’s distinctive niche.

Prensky’s (2001) categorisation of children as digital natives has been taken to mean that an interest in and competency with digital technologies is a universal feature of children growing up in the digital age. However, adopting Selwyn’s (2010) focus on the state of the actual suggests a more nuanced situation. Although digital resources are important cultural tools in their household, there can be no assumption that any particular child will be attracted to them. Some children growing up in technology-rich households are not attracted to digital play or learning activities while others choose to pursue enduring interests (e.g., vehicles, dinosaurs, pets) across digital and traditional modes (Stephen et al., 2008; Livingstone et al., 2015). Young children refer to digital resources at home as features of their growing up which they engage with, become competent with, and then move on from, just as they expect to do with traditional play-things. They are discriminating users of digital resources, making use of them when they are a source of fun, ignoring them when more tempting activities or social encounters are available, and identifying features that work well or frustrate or bore them (Stephen et al., 2008; Marsh et al., 2015).

Beyond their immediate family children’s relationships with their peers, particularly in nursery and school settings, make a difference too, opening up or inhibiting opportunities for play and learning with digital technologies. Positive or negative social relationships between clusters of children engaged with digital or traditional resources can result in excited shared exploration or competitive and excluding behaviour (Kutnick et al., 2016). Despite assertions that play with computer games and other digital technologies fosters collaborative play, the evidence suggests a more mixed outcome. For instance, Brooker and Siraj-Blatchford (2002) found evidence of a range of constructive and collaborative interactions between three- and four-year-olds and that specific aspects of the software were associated with different forms of mutual engagement such as debating a problem or taking turns. On the other hand, no distinct evidence of collaborative behaviour across technological resources was identified by Plowman and Stephen (2003), who observed peers taking control of a game when a child hesitated or asked for help. Ljung-Djärf (2008) demonstrated that three- to six-year-olds adopted three distinct roles as they engaged with games on desk-top computers in their educational setting. Some took the role of owner of the resource (manipulating the hardware and making decisions), some were engaged as active participants contributing to the play, while others were included as spectators only. A study by Arnott (2016) found a further factor influenced the nature of interactions in the playroom and hence the nature of children’s engagement with the digital resources provided there. She noted that the social context of the playroom (its rules and expectations) influenced whether peer group relationships when engaged with digital technologies were pro-social, anti-social, or task-driven.
Such evidence reinforces the social and cultural embeddedness of digital technologies and makes evident the need to go beyond technological considerations in order to make sense of the experiences of young children in the digital age.

Parents and Educators Responding to the Digital Age

The technologies which parents purchase for their home, the apps they download, the family practices they endorse, and the rules they set about digital activities are shaped by their relationship with the technologies of the digital age. So too in educational settings, local policy objectives, formal practice guidance, and hardware and software resources all make a difference to children’s experience of digital resources. Everyday playroom practices are further influenced by: the educators’ own relationship with digital resources; their attitudes towards having digital resources in their playroom or classroom and the play value of digital resources; their understanding of the critical contribution of sensitive pedagogical interactions to ensuring that encounters with digital technologies foster learning; and their experience of professional development opportunities about play and learning with digital technologies (Stephen & Plowman, 2008; Nuttall et al., 2015; Palaiologou, 2016).

Stephen and Edwards (2018) draw attention to three ways of characterising the relationship between people and technological innovations in the digital age. The first is technological determinism which construes the human actor as unable to resist technological developments, the second is a substantive or functional view that focusses on novel technologies as cultural tools which ease domestic or educational life, and the third is a critical position that poses questions about the purposes and values associated with technological innovation and choice-making. Technological determinism is evident in the responses of parents or educators who suggest that children should engage with digital resources because they are necessary for future education and employment (McPake & Plowman, 2010). Furthermore, a technological determinist perspective is likely to result in a focus on mastery of the operational features of the digital resource, rather than on the access to knowledge facilitated or the amplification of mental activity supported. In the context of early years education, Stephen and Edwards (2018) go on to suggest that educators who adopt a technological determinist understanding are likely to experience the demands of the digital age on their provision and practice as challenging, and they feel obliged by the expectations of parents and policymakers to include digital technologies in their settings. Some will accept assertions about the potential of digital resources to support learning but others will have had to overcome their feeling that early years education has little or no place for new technologies.

Parents and educators who hold a substantive perspective are likely to take a more pragmatic approach, driven by the affordances of the resources and focussing on what the technologies allow adults, educators, and children to readily achieve. This outcomes-focussed response is illustrated by the common practice of making extensive use of digital photography to facilitate children and adults to document play and learning in early years settings, sometimes at the expense of time to reflect and respond to the documentation (Bath, 2012).

Stephen and Edwards (2018) argue that, in contrast to a technological determinist or a substantive approach, developing a culturally and socially situated and critical relationship with digital technologies facilitates proactive response-making, allowing for recognition of local contexts, space for value judgements and, in the case of educators, the application of professional knowledge. They contend that while the contemporary digital age creates new conditions for learning and new ways of amplifying mental labour, responding to these opportunities and challenges through a cultural and critical lens can reflect the values and aspirations of families and societies and the cultural niches they develop. These three characteristic approaches to
technologies are not intended to be impermeable ‘response types’ and parents, educators, and policymakers may well move in and out of these characteristic relationships with technology over time, depending on the nature of the digital activity and the centrality of the activity to their perspective on parenting. A qualitative study by van Kruistum and van Steensel (2017) exploring parents’ reasons for mediating their children’s use of digital technologies revealed a range of core values and emotions underpinning their practices. But within this variability van Kruistum and van Steensel stress the centrality of flexibility, a critical approach which parents employ to make decisions for particular children in particular circumstances – allowing them to do “the right thing at the right time”.

Educators and policymakers concerned with educational provision and practices for young children are called upon to make decisions about the alignment of digital activities and the kind of knowledge that matters in the digital age, with views about a ‘good childhood’, and responsive educational provision. They will seek to foster the curiosity that drives learning, to prompt questioning and problem-solving, develop literacy skills, and skills to interpret digitally available information. However, these challenges are not unfamiliar; educators are already engaged in making decisions about the kinds of materials and ideas that are appropriate for young learners and about how to support children to acquire cultural tools such as reading, number, and quantity concepts. For parents, educators, and policymakers, avoiding technological determinism and adopting a cultural-historical perspective which acknowledges digital technologies as cultural tools to foster knowledge and behaviour that is currently valued and oriented towards expectations of the future leads to decisions that reflect the cultural situation in which young children are growing up at home and in their educational setting.

Conclusion

This chapter has argued for a situated understanding of young children’s encounters with digital technologies which recognises these tools as part of the historically evolving and socially and culturally mediated everyday life in which they are growing up at home and in their educational settings. Empirical evidence has been drawn on to challenge commonly cited anxieties about digital resources dominating the lives of young children, suggesting instead a more nuanced approach which acknowledges that children have personalised experiences influenced by their families, peers, and educators, and their own interests and preferences. A cultural and critical perspective on development and education in the digital age recognises the influence of the cultural and social niche in which children are growing up and facilitates proactive decision-making about children’s engagement with technological innovations in ways that acknowledge both the opportunities for new ways of knowing and the social and cultural expectations of contemporary societies.

References


