

# Chapter 10

## Digital Play: The Use of Creative Technologies in the Early Years

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### ABSTRACT

*This chapter showcases a new framework (Technology and Play Framework) for teachers to consider when planning the use of digital technologies in the Early Years of formal schooling. It also presents the findings from a pilot study conducted with an F-1 (Foundation year and year 1) class in an Australian primary school that demonstrated how this framework could direct the effective use of a specific digital technology in terms of student learning outcomes with particular focus on literacy and numeracy. While play is recognised as an essential component of good practice in early childhood settings, it needs to be reconsidered and aligned to incorporate emerging digital technologies and complementary pedagogical practices in order to support authentic learning.*

### DIGITAL TECHNOLOGIES AND THE EARLY YEARS

The use of digital technology in the Early Years of formal schooling has a developing body of research supporting its use (Brooker, 2003; Chantel, 2005; McDonald & Howell, 2012; Sheridan &

Pramling Samuelsson, 2003). These studies have shown that learners in the Early Years have few difficulties operating digital hardware and are able to follow simple tailor-made software programs. Digital technologies are a pervasive influence in this era and many children have experienced a vast array of engagement with these technologies before they commence formal schooling. This exposure to technology at a young age facilitates

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a familiarity and confidence in these young learners, thus normalising its place in their developing identities. Interactions with family and technology combine to affect the physical, mental, and emotional development of these children. Computers and mobile devices such as iPads and tablets enable Early Years learners to develop fine motor skills, alphabet recognition, pre-mathematical skills, concept learning, cognitive development, self-esteem, social skills, and school-readiness skills. It would be logical to conclude that Early Years learners who engage with digital technology achieve better learning outcomes, in particular, literacy and numeracy skills, than their peers who do not. This is a persuasive argument for its inclusion in teaching and learning episodes at the start of formal schooling.

## **Types of Play**

In order to articulate digital play it is important to revisit what constitutes “play” in the Early Years of schooling. Each teacher’s epistemological belief of what defines play has direct bearing upon their willingness and ability to embrace digital technologies and play. A teacher’s beliefs about play also directly impacts upon the role they enact in their classroom: participant, spectator or absentee. As a participant in play teachers would engage in the same activities as the children, scaffold or prompt participation in activities, model activities, and probe children’s learning by questioning. As a spectator, teachers would be present yet not intrusive or participative. As absentee, the teacher may or may not set up potential play environments, and whichever the case, has no involvement with the activities undertaken by the children, including observation. The learning derived from play situations may be thought of as incidental, accidental or intentional particularly in terms of the degree of teacher forethought involved.

Morgan and Kennewell (2006) characterised play as underpinned by four key features. First, play is led by the child and is voluntary, although

adults may design environments to inspire and encourage children to play. Second, the process undertaken during play is more important than the result of the play. The third feature is in respect to the low risk of play activities in which children can partake without fear of failure. Finally play has the capacity to contribute to knowledge, both procedural and conceptual. Digital play as represented by framework described in this chapter challenges the characteristics described by Morgan and Kennewell (2006). In the first instance, digital play is led by the teacher or software, and is intentional rather than voluntary. Second, whilst the process is certainly important, so too is the result of the play, that is the product derived from interaction with materials, hardware, and software. Thirdly, there is an element of risk associated with digital play which is generated by the nature of the software interface; incorrect or incomplete programming will lead to “failure”. The fourth characteristic, the contribution to procedural and conceptual knowledge, is the prime characteristic of digital play.

## **Technology and Play**

As previously discussed, an important aspect associated with the use of digital technologies in the Early Years of schooling is the concept of play. In this context play refers to creative, experimental, and purposeful activity which effective Early Years teachers can mediate to ensure genuine learning occurs. Software programs and hardware have been designed to be engaging and motivating for children to use, promoting learning within the context of play (Brooker, 2003; Chantel, 2005). Technology researchers have been interested in the idea of combining play with technology, for example, consider the early work of Seymour Papert who created Logo as a tool to improve the way that children think about and solve the problems. A small robot called the “Logo Turtle” was developed and children used it to solve problems which were mathematically-based. This is an example of

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