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Multimodal and Digital Literacies in the Early Years

Young children are born immersed in a digital world and in practices relating to popular culture and media. As they are growing up they develop a wide range of skills, knowledge and understanding of this world. Parents and other family members scaffold this learning, either implicitly or explicitly. Children engage in family social and cultural practices which develop their understanding of the role of media and technology in society. Digital technologies have introduced an extensive range of multimodal dimensions into young children's learning of literacy. Young children are active users of digital technologies and engage in a wide range of multimodal experiences (Marsh et al 2005). This has implications for policy and practice affecting the early years. The professional development programmes of early childhood educators need to consider these dimensions.

**Digital Technologies
in the Home and at School**
In the first instance, young children engage with digital technologies at home. The family context makes a difference to young children's engagement with these technologies. There seems to be the same repertoire of direct pedagogical actions across families when they support their children's use of

digital technologies. However, the children's experiences are different because of the distinct family contexts in which they engage with the resources.

Young children are already in possession of digital knowledge and competences when they arrive in nursery classes, to some extent as a result of varying levels of parental intervention and modelling. They are also in the process of acquiring new knowledge, skills and attitudes. Parents' involvement with digital technologies is often characterized by conscious but sometimes uncertain efforts to limit opportunities and access to digital technologies in the perceived best interests of the children (Clarke 2006). The passive use of technology and screen media should not be a replacement for active play, play with concrete materials, engagement with other children, and meaningful interactions with adults.

There exists a discordance between technology use in the home and at school as digital technologies are used usually in a limited manner in classrooms in early years (Aubrey and Dahl 2008). The possibilities afforded by these early digital experiences are to be more fully exploited and accommodated within the classroom. Digital technologies

are to be implemented to support the development of essential early literacy skills, increase motivation and support children's engagement with literacy and learning.

The Role of Digital Technologies in the Development of Early Literacy

Literacy cannot be perceived solely as a print-based activity when children access text in a range of modes, e.g., on computers, television, tablets, smart phones, etc. Traditional notions of literacy have been challenged (Cope and Kalantzis 2000; Kress 1998; Kress 2003; Pahl 1999). "Emergent literacy" goes beyond print literacy and encompasses a range of multimodal practices (Makin et al 1999; Marsh 2003; Marsh and Thompson 2001; Pahl 1999). They are complete acts of literacy practices involving a complex range of skills, knowledge and understanding. We need to define emergent literacy practices in relation to wider definitions of literacy which incorporate digital technologies and multimodal ways of making meaning (Kress 1998).

Cairney and Ruge (1998) identified four distinct purposes for the use of literacy in the home: for establishing or maintaining relationships; for accessing or relaying information; for pleasure and/or self-expression; and for skills development. In their study, digital literacy practices were firmly embedded within each of these four areas. Some children watched as their parents read and responded to text-messages and were being sensitised to digital print mediated through mobile phones. Literacy as a means of pleasure and self-expression was strongly evident throughout children's engagement with digital technologies. This pleasure was recognized and celebrated by their parents. Literacy as skills development was embedded within children's digital literacy practices,

like reading text on the screens of computer games.

Digital technologies and multimodal texts offer the potential to support the development of early literacy skills and present multiple means of representation. They should complement oral/aural activities in the classroom. Children can listen to or re-read favourite classroom stories and other texts through online programmes or applications. They can also engage in more dynamic and interactive literacy activities.

The lack of focus on children's emergent digital literacy skills in classrooms is due to limited teacher knowledge as these are usually addressed in a limited manner in initial education courses for early childhood educators (Hart 2000). These educators generally express positive attitudes towards the role of popular culture, media and new technologies in children's lives, including demonstrating positive attitudes towards their use of digital games. However, they do have concerns about the perceived amount of time children spend on these activities. Some early childhood educators may hold negative views towards the role of media in young children's lives. Seiter (1999) suggests that there are two very different paradigms in which children are viewed either as active meaning-makers of a range of media or as passive victims who need to be protected from the influences of the media.

Understanding the role of digital technologies in the process of young children's literacy development is crucial to ensure that all children have equal access to opportunities to learn in schools. Some young children are already capable of navigating effectively around screens, connecting and taking

meanings from words, sounds and inter-related images. Others have more limited access to computers and use of the internet. Children need to become proficient in the uses of the new media in order to become full members of a society in which know-ledge and communication are highly prized. It is essential for early childhood educators to be provided with the curriculum guidance and training they need to help them un-derstand how this might be achieved most effectively. The observation of children's uses of computers at home might help to con-vince some early childhood educators of the pedagogical benefits for the development of young children's literacy in diverse modes and media.

Young children should engage with digital literacies in ways that encourage "playful-ness, agency and creativity" (Burnett 2010). Digital technologies should build on the crea-tivity of children and provide opportunities for engagement and response. They should encourage children to become authors and allow activities which involve the generati-on and construction of a story or message. Some applications allow children to create stories and comics and to share these with an audience outside the classroom walls. Such technologies should provide robust supports to meet the diverse needs of pupils in the classroom and through embedded supports they should reduce the barriers to text.

A close analysis of literacy practices and events allows us to explore the potential differences between the modalities of inter-action and the affordances of traditional and new media. This should allow us to identify what early childhood educators need to know and do in order to support the develo-ping literacy practices of all children across a

range of media. Au and Raphael (2000, 170) argue that "ensuring educational equity involves helping students become literate in all artefacts of literacy, not only those his-torically used and present in today's society, but those likely to become prominent in the future".

The nature of the learning environment, the persons around the child, the material re-sources available and the kinds of pedagogic interactions mediating those experiences are all crucial to young children's success in liter-acy learning. This applies also to multimodal means of communication. The availability of resources and a sustained focus on the nature and quality of relationships mediating children's experiences around different me-dia and texts are crucial to the effectiveness and depth of learning for all children (Green and Hannon 2007; Neuman and Celano 2006; Yelland and Masters 2007).

The Educational Potential of Digital Games

There is increasingly widespread evidence of the positive effects of digital games on learning (Coller and Scott 2009; Echeverria et al 2011; Green and Bavelier 2003; Ke and Grabowski 2007; Klopfer and Squire 2008; Papastergiou 2009; Peterson 2010; Prensky 2006). Gamers are able to explore different identities and "inhabit" roles, which would normally be inaccessible to them (Akkerman et al 2009; Shaffer et al 2005; Winn 2002). They are able to alter various situations and environments, which in real life would be unalterable, view various phenomena which may be impossible to witness for real and observe the behaviour of particular environ-ments in different periods of time and chan-ging over time (Rickard and Oblinger 2004; Squire 2003; Squire 2008). For learning to be

successful, learners need to feel engaged, be aware of the value of their role within the whole process and feel that their investment in the task will bring about progress and goal achievement (Robertson and Howells 2008). Motivational features which contribute to effective learning are present in digital games (Barab et al 2005; Garris et al 2002). When carrying out tasks, immediate feedback, whether positive or negative, is given, which motivates the player to proceed or to keep trying. Explanations for incorrect responses are rarely given, therefore players need to reason and deduce a way forward. Players become familiar with and practise the game so as to improve and to be able to move on to higher levels. Digital games require high response rates and therefore increased levels of concentration and little distractibility for the player to be able to advance. The unlimited ceiling on performance in games provides gamers with new challenges and different ways to reinforce and practise their current skills and introduce new skills.

Digital Games and Literacy

There exists a "symbiotic" relationship between digital technologies and literacy (Andrews 2007). During game play, the learning of and exposure to words and symbols takes place while experiencing the actual reality of these words (Burnett 2010). Media-rich early literacy programmes, which include online games, have significant effects on children's literacy development (Penuel et al 2009). Children who participate in these literacy programmes have significantly better letter-naming and letter-sounding skills, demonstrate significant story and print concepts, and knowledge of letters in their names. Digital games, particularly those involving role-play, can have a similar func-

tion to books, in that they provide students with ideas for their creative writing (Harushimana 2008). Students may exhibit writing skills in plot development and description of main characters, which have been attained through the digital games. Children who use digital games show improvement in writing skills, higher level sentence and question construction, and basic literacy skills (Owston et al 2009). In some situations statistically significant gains in spelling and slight gains in reading comprehension were registered after the students played digital games (Rosas et al 2003). Parents and teachers can support what children are learning by having conversations about games they are interested in.

Collaborative Multimodal Dialogue

The quality of the relationships and interactions mediating children's activities is crucial for their literacy development. Neuman and Celano (2006) studied attempts to raise the achievement levels of children from low-income families by increasing the provision of print and technological resources in branch libraries (2006, 181). They found that despite transforming the provision of material resources, differences in "literacy habits" around print and electronic media appeared to widen between middle and low-income families. They suggest that for all children to gain maximum benefit from resources, librarians require training that focuses on "affect and attachment, informal instruction, guidance and informal monitoring very early on" (2006, 199).

The level of education of the child's main care-giver and home/school beliefs and practices around new technologies influence the kind of home and school interactions that children have. Some children in the

nursery engage with a range of human and material resources in more strategic ways than others. These either reflect or contrast with characteristics of their learning experiences at home. Children's levels of awareness are heightened through interactions with adults who explain and model processes through multiple modes in response to the children's goal-orientated actions and questions (French 2007).

Wegerif (2008) suggests that the quality of human relationships is an important precondition for effective learning and argues that: "As with infants' learning to point, a dialogic perspective argues that education more generally takes place within dialogic relationships in which students see things from at least two perspectives at once, their own point of view and that of their teacher" (Wegerif 2008, 352-353). These activities serve to heighten the children's awareness of the nature of the practices and discourses in which they participate and their ability to act strategically in the future. Children's learning with both new and traditional literacy-related technologies are supported through collaborative multimodal dialogue. However, there are profound differences in the ways that children draw on different verbal and embodied modes when interacting with different technologies.

Benefits of Digital Technologies for Dual Language Learners

In bilingual situations where children have a home language and English, digital technologies may facilitate active practice in the four language skills (speaking, listening, reading and writing) in both languages. However, this should not serve as a substitute for personal interactions with significant others. There are many online resources availa-

ble for English. Home languages may be supported also by using digital technologies to create stories and other resources when these are not readily available online.

Conclusion

It is essential that those who work with young children have the required digital literacy skills as digital technologies become increasingly pervasive throughout the lives of young children. They need to make informed decisions about how to make best use of technology to promote early learning. Digital literacy for early childhood educators involves thinking critically about how to select, analyse and use technology and making professional judgements about its impact on the development and learning of young children (NAEYC, 2012). Early childhood educators are to be provided with guidance through continuing professional development opportunities and the sharing of good practices. Parents and others who may have the care of young children in the home require guidance too. Digital literacy skills for children involve having a critical outlook on technology in order to be able to make wise choices in their use of technology.

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