

Self-authored e-books: Expanding young children's literacy experiences and skills

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THIS PAPER EXPLORES THE ROLE of self-authored e-books as a vehicle for helping early childhood professionals to engage young children in new literacy and language experiences. The rationale for using information and communication technology (ICT) in the early years is examined along with the changes that have occurred in written texts and textual practices. It is our opinion, as New Zealand early childhood teacher educators working in the area of multi-literacies, that self-authored books present an opportunity for early childhood professionals to develop a partnership between ICT and reading. The common software application PowerPoint is ideal for helping young children to make basic self-authored e-books. By helping children self-author and produce e-books, early childhood professionals can make the use of computers more interactive and personal. The potential ethical issues, cautions and constraints that need to be taken into consideration when developing self-authored e-books are examined.

Introduction

The provision of language and literacy experiences is essential in all early childhood education learning environments. Increasingly, information and communication technology (ICT) is being viewed as another tool for early childhood professionals and children to use in this domain of learning in a way that can complement the more traditional provision of literacy experiences (Hills, 2010; Paret, Quesenberry & Blum, 2010; Marks, 2007; Siraj-Blatchford & Siraj-Blatchford, 2003). Young children are more and more exposed to multiple information modalities (Luke, 1999). ICT can play a vital role in developing children's oral language and literacy and has the potential to provide new and exciting possibilities for teaching and learning in this domain (Makin, Jones Diaz & McLachlan, 2007; Zevenbergen, 2007).

ICT and the early years

In New Zealand the government is committed to digital literacy. The Ministry of Economic Development (2008) asserts that connecting New Zealanders to each other and the wider world, and making available new and emerging digital technologies, is vital to our ability to be successful in this transformative future. New Zealand,

like Australia, is investing funds in computer literacy, and connecting schools to the internet as the government perceives the advantages in positioning itself favorably within an increasingly global economy (Hill, 2007; Jewitt, 2006; Lloyd, 2005; Ward, Robinson & Parr, 2005).

There is a strong social and economic rationale for nations to use ICT in the compulsory education system. As Brown and Murray (2006) put it, children need to be able to use ICT so that they are adequately prepared for the future, and the prospective wealth of New Zealand's economy is dependent on embedding digital technologies in our education system. This trend has permeated down to the non-compulsory early childhood sector. In a government-sponsored literature review on the role and potential of ICT in early childhood settings, Bolstad (2004) argues that ICT use should foster a view of ICT as a tool for enriching the teaching and learning environment for young children. To support the improved use of ICT in early childhood education, the New Zealand Ministry of Education consequently launched the strategic plan *Foundations for Discovery* (Ministry of Education, 2005), with the implementation of targeted professional development. In a recent report on the impact of a three-year professional development project aimed at increasing early childhood professionals' capability using ICT to support children's learning, Hatherly, Ham and Evans (2010) maintain that an added

value of ICT was the multiplicity it offered in terms of learning opportunities. For a number of children it presented a voice or an opening to becoming more connected in the early childhood service for the first time, whereas for others it allowed them to transform their existing interests in a new way.

Literacy and ICT

Western society has invested print-based media with significant authority, but notions about literacy are changing. As society and technology evolve, there is a shift to an acceptance of digital forms of literacy (Jewitt & Kress, 2003). Increasingly, young children are exposed to communication tools and circumstances that are multimodal instead of solely linguistic (Hill, 2007). These multi-media forms of literacy include traditional forms of print and numbers, but also hypertext, symbols, photographs, animations, movies, DVDs, video, CD-ROMs and website environments (Luke, 1999; Walsh, 2008). Jewitt and Kress (2003) argue that it is important for early childhood professionals to attend to the variety of different ways, described as 'modes', in which information and knowledge are communicated. They explain a mode as a 'regularised organised set of resources for meaning-making, including image, gaze, gesture, movement, music, speech and sound effect' (p. 2). This has meant that changes have occurred in texts and textual practices, leading to a blurring of the previous demarcation between reading and visual literacy. As Healy (2000) points out:

Terms such as 'screening' and 'visual acuity' are accepted as aspects of reading the media and texts on digital screen. Text now refers to multiple forms of communication including information on a digital screen, video, film and other media, oral speech, television, and works of art as well as print materials. Electronic texts in particular have become part of children's everyday lives to the extent that before they commence school, a growing number of children have more experience with electronic texts than they do with books. It is important to recognise that print is now only one of several media which transmit messages in our culture (p. 156).

The reading of texts has traditionally focused on decoding–encoding print's alphabetic codes. Texts children read today, however, might be a mixture of images and print, and the delivery might be interactive with mobile forms rather than just print fixed on a page (Walsh, 2008). Healy (2000) argues such textual conditions do make a noteworthy difference to reading at the level of text decoding.

An Australian research project, *Children of the New Millennium* (Hill, 2004), which explored the development of young children's expertise with ICT, concluded that the

long-established content of reading and writing needs to be expanded to incorporate the use of numerous sign systems that symbolise meaning. According to Hill (2010) the impetus for this research was due to the disparity between the texts used in schools and the multimodal texts used by children in their homes, a finding from the longitudinal research undertaken of children's literacy development by Hill, Comber, and colleagues in 2002. In another small-scale study carried out by Marsh (2003) that explored the home literacy practices of three- and four-year-old children in the north of England, she also found that the literacy practices that occurred in the home were not reflected in the early years curriculum. As vital as effective reading and writing are, it is no longer appropriate to talk about reading and writing as distinct skills when children can now access texts in a range of modes (Walsh, 2008). This is reflected in Australia's first national curriculum for the early childhood sector, *Belonging, Being and Becoming: The Early Years Learning Framework*. In particular, Outcome 5: Children are effective communicators, has a section on how they can use ICTs to access information, explore ideas and represent their thinking (Australian Government Department of Education, Employment and Workplace Relations [DEEWR] for the Council of Australian Governments, 2009).

Studies of children's interactions with digital texts in out-of-school settings have drawn attention to the playfulness, agency, and creativity with which they may engage with them (Burnett, 2010). For example, Marsh's (2004) study of the literacy practices of 44 children in Britain aged two-and-a-half to four years of age at home found that children's engagement with television, computer games and mobile phones provided them with a means of pleasure and self-expression. As Marsh puts it:

Literacy as skills development was embedded within children's techno-literacy practices, whether that related to learning grapheme/phoneme relationships from watching television or reading texts on the screens of computer games. In short, children's home literacy events within this study could be mapped on to existing literature in the field, differing only in the extent to which techno-literacy practices were involved (p. 63).

Research undertaken with individual children also gives us specific examples of how children make sense and experiment with digital texts. By way of illustration, Smith (2005) examined how her daughter over a period of a year, from two-and-a-half to three-and-a-half years of age, developed and expressed her comprehension of hypertext by means of role play about computer games. More recently, O'Hara (2011) carried out a small-scale study of young children's ICT experiences in the home and the role of their parents in presenting opportunities, acknowledgment, encouragement and models of ICT

practice for their four- to five-year-olds. O'Hara found differences in the occurrence and accessibility of ICT in the homes could be subtle at times and depended on a number of factors. Young children may have access to certain technologies as they were already present in their homes but this did not always mean that they were allowed and/or able to use these. O'Hara's findings support the arguments made by Marsh (2004), Smith (2005) and others that young children already have an understanding of ICT knowledge and competences when they enter formal schooling as a consequence of differing levels of parental intervention and modelling along with being able to acquire their own new information, abilities and attitudes.

An important factor in comprehending how young children learn to conceive texts, particularly during the period before they enter formal schooling, is to acknowledge that where traditionally print has been the accepted means for delivering the message, multiple texts now convey their messages equally through image or through a mixture of print and image (Healy, 2000). While sitting at a computer, some children learn to read by animating text and by following audio cues, using iconic and directional references, and ordering their reading in a personalised way. Healy (2000) contends that children's reading in this manner and their responses to the linear constructions of a two-dimensional page are considerably different. The media that children use and the construction of the text shows that different reading processes are needed.

Healy (2000) asserts the focus is now on the central role of the visual in various types of reading. The following terms, for instance, screening, visualisation, visual skill, and visual acuity are prevalent in the research regarding text and reading. Of interest, recently published CD-ROMs and narrative picture books are made so that the targeted audience cannot transform the text into meaning without substantial deliberation. In many cases, 'left-to-right and top-to-bottom, or even rules of centrality do not apply' (Healy, 2000, p. 157). On the other hand, an image may be the best way for children to receive the text's message. In most cases, texts for children are structured so that they involve a complex set of processes, and the image may be as necessary to the message as print, with codes and symbols randomly placed on the text's surface. The written language codes, at times, are given a secondary role. These types of texts were rare not too long ago and reading such texts is very different from reading pages of printed books. Healy (2000, p. 157) suggests that the 'linear reading a printed text in a left-to-right and top-to-bottom organisation has little to do with reading a flexible digital text constructed of multimedia, or with viewing a moving film'.

Walsh (2008) points out, too, that to read and create multimodal texts, children do need to be able to combine

traditional literacy practices with the comprehension, design and manipulation of various 'modes of image, graphics, sound and movement with text' (p. 108). In agreement with Walsh (2008) and Healy (2000), we are not suggesting abandoning practices centred on the traditions of print literacy but instead propose early childhood professionals include a range of texts for young children that expand beyond the current print traditions. Self-authored e-books are one way to accomplish this, as they can create a partnership between ICT and reading.

Creating self-authored e-books using the common software program PowerPoint™

PowerPoint is part of the ever-present Microsoft® Office suite. It is an easy application for early childhood professionals to master, and lends itself to the production of self-authored e-books that can feature a range of things in addition to text, such as photos, images, audio, animations, video, interactive buttons and links to the internet. The combination of these elements to support narrative or factual information represents significant creative potential in the creation of new literacy objects. Parette, Hourcade, Boeckmann and Blum (2008), who undertook a study examining the use of PowerPoint to foster literacy in ten American early childhood education settings, observed that this type of presentation software has features (for instance, animation, colour and sound), which can be used effectively to encourage and enhance young children's literacy learning.

We assert that many early childhood professionals know how to use this software but that they do not necessarily exploit the program to its fullest creative potential or show children how to use it for creating their own self-authored e-books. However, professional development and/or independent self-tutoring (see, for instance, <http://office.microsoft.com/en-us/powerpoint-help/getting-started-with-powerpoint-2010-HA010359435.aspx>) can significantly enhance early childhood professionals' confidence and competence with this simple software. An example of using PowerPoint to create successful self-authored e-books has been described by early childhood professionals working at The Pagoda, an early childhood setting in Cambridge, New Zealand. The early childhood professionals undertook professional development opportunities to broaden their knowledge and skills with a range of software so that they could assist children's digital literacy. Through the use of PowerPoint and other programs, the early childhood professionals are now tapping into children's understanding and familiarity as readers of digital texts and providing them with the opportunity to tell stories in ways that they have not been able to do previously (Ministry of Education, 2010).

As part of our early childhood education initial training course, we consider it important that our

students know how to use this program creatively to promote young children's literacy. It has been our experience of working with student teachers that many of them find making and using self-authored e-books in PowerPoint and then using them with children on their teaching practicum is empowering and exciting. One early childhood student, Alex, for instance, wrote that she set her self-authored e-book within the context of her kindergarten community so that the children could make personal connections to the text. When creating her self-authored e-book Alex consciously focused on using the literacy devices of repeating rhythmic rhyme as she recognised these literacy techniques aid children's early phonological awareness (see, for example, Goswami, 1999). While viewing the self-authored e-book for the first time with the children, which was about Alex taking her dog for a walk on the beach near the kindergarten, she reported that the children related what they saw to what they had seen at the beach. One child commented that he had seen a 'crab shell like that with my Nana'. Another child told Alex 'I make footprints in the beach', while someone else said 'my dog likes the beach'. The children were able to identify features and objects from the local beaches. (Stevens, personal correspondence, 29 March 2011).

Alex explained how she had shown her self-authored e-book three times with a small group of children. The first time the children were very excited and interested in the pictures and text but the simple words moved too quickly. Next time the children viewed the self-authored e-book they joined in reading the simple text and asked for it to be repeated. The third time the self-authored e-book was shared with the children, Alex led a discussion of how, why, where and when she had created it. One child, Cam, was very interested so they created a self-authored e-book, *Cam the Bug Expert*. Cam staged the photos he wanted Alex to take. As Cam was fascinated with the transition process for slides in PowerPoint, they created his self-authored e-book with a number of different transitions for each slide (Stevens, personal communication, 29 March 2011).

Next, Alex outlined how she watched *Cam the Bug Expert* with a group of children, which led to two more children, Emma and Louise, being interested in creating their own self-authored e-books. This provided the opportunity for collective work and problem solving as both children wanted to make their e-book first. After much negotiation and discussion, Emma took photos of Louise dancing. Then Louise and Emma chose the photos and suggested captions to include in their e-books, using principles of collaborative learning to produce their first self-authored e-book. This is highly motivating as the children were both the subjects and producers of the images used (see, for example, Hourcade, Parette Jr., Boeckmann & Blum, 2010). Later on that day, another child, Ben, told Alex

that 'there is an invisible lion in the sandpit. This is his print. That is his poo'. Ben took photos of the evidence then painted what the lion felt like, the paw print and its smile. He took photos of the different parts of his painting and they worked together to produce a self-authored e-book. Alex reported that she noticed and recognised the children's interest in and the developing of storytelling and the use of ICT (Stevens, personal communication, 29 March 2011).

Research undertaken by Colbert (2006b) in a New Zealand kindergarten setting indicates that using ICT added sophistication, correlation and continuity to young children's storytelling. When early childhood professionals in her research introduced digital microphones, digital video as well as digital cameras, they helped children to capture the ideas and images they needed to make their stories interesting and relevant. Colbert found that digital technology could be used to complement and capture children's drawings that they had created for their stories. She observed that having these different mediums available for the children to use to develop their stories enabled them to tell more complex stories. Colbert (2006b) stated children's desire to tell their stories, to communicate their thoughts separately from text conventions, led them into a greater experimentation and investigation in their storytelling, and also inspired a keenness for experimenting with a variety of other ICTs. The example of *Cam the Bug Expert* as discussed above illustrates aspects of Colbert's observations.

We believe self-authored e-books made in PowerPoint can supplement traditional print-based books but offer extra affordances. One of the significant advantages of this type of e-book is that early childhood professionals can help put this authoring tool into the hands of children even though they are pre-literate in regard to written text. As Colbert (2006a, 2006b) suggests, young children are increasingly using digital technology by themselves, such as digital cameras, and they now have more choices about what images can go in their own stories, and can make their own decisions about which images to use in their books. PowerPoint provides a multimodal digital platform from which young children can successfully develop self-authored e-books to tell their stories successfully and with complexity.

Te Whāriki, the New Zealand early childhood curriculum, also emphasises the need for early childhood professionals to build on children's strengths and interests, and allow them to make choices that encourage them to take responsibility for their own learning (Ministry of Education, 1996). This is where the development of self-authored e-books can create opportunities for children to work with each other and early childhood professionals to produce exciting literacy objects that build on their interests. This not only

enhances the literacy dimension of the early childhood setting but also provides another vehicle for making children's ideas and learning visible. An example of this can be seen in a small self-authored e-book developed by Solway Kindergarten in Masterton, New Zealand, that the children and their early childhood professionals created together, which very simply captures the essence of a vegetable garden development project. To view *Vegetable Gardens* e-book see Shuker and Terreni's (2010) web-based article written for the New Zealand Ministry of Education's Early Childhood ECE Educate site, www.educate.ece.govt.nz/learning/exploringPractice/Literacy/EBooksPromotingYoungChildrensLiteracy.aspx.

E-books as interactive texts

Siraj-Blatchford and Siraj-Blatchford (2003) contend that there are several important aspects for computer use with young children. They argue that computer programs or activities should include: flexibility, the ability to change arrangements or representations, linking the concrete and the symbolic, providing feedback, and dynamic linking of multiple representations. This, they suggest, can focus the children's attention and increase motivation.

We argue self-authored e-books made in PowerPoint support these contentions because they can be made to be dynamic and interactive. For instance, early childhood professionals can set up interactive buttons so that children can do elementary things such as turn the pages of the e-book themselves. The ability to set up more complex options such as inserting video clips, sound files, and animations that children can activate also add to the interactivity of an e-book. Another useful feature of this type of electronic book is that, unlike traditional books, they can be modified and expanded over time, capturing new ideas and activities that emerge.

Whilst the PowerPoint program is not particularly difficult for adults to negotiate, young children are likely to need assistance to be able to use some of the tools to create their e-books (for example, inserting images or videos), or to create text or symbols on a page if required. Early childhood professionals therefore need to work alongside children to assist them with the technical aspects, but still allow children to self-author by letting them determine content. Max's Tool Box (see www.maxstoolbox.com/En-Au/Pages/ProductCatalog.aspx) is a child-friendly version of PowerPoint that can make navigating this software easier, and regular use and familiarity can lead to mastery of the program.

Korat and Shamir (2008) point out that educators and researchers consider that the lively and attractive features of electronic books may provide a useful means for promoting young children's literacy and language development. Such an assumption is based on the idea

that the type of software used can provide children with a more authentic reading experience instead of the more traditional drill or exercise way of promoting literacy. Research carried out thus far on the effectiveness and value of commercial e-books for literacy development has provided some positive results in different domains (Shamir, Korat & Barbi, 2008). For instance, substantive gains have been identified in the area of word recognition and children's use of e-books (Blum, Parette & Watts, 2009). E-books have also been found to be a factor in fostering children's phonological awareness (Korat & Shamir, 2008).

However, limitations of some e-books for fostering children's literacy development have been identified (de Jong & Bus, 2003; Korat & Shamir, 2008). The researchers highlighted that most e-books targeted at children aged three to eight years are not entirely satisfactory as a tool to support their emergent literacy. Korat and Shamir (2008) assert that more needs to be done in creating appropriate e-books for young children. They consider that educational e-books need to take into consideration the attractive features of the available electronic and interactive media but concurrently they should provide support for children's story comprehension and their investigation of the written text. We agree, and believe that self-authored e-books using PowerPoint are one way to accomplish this.

Self-authored e-books have bilingual and multilingual potential

The diversity evident amongst children and families enrolled in New Zealand early childhood settings has grown dramatically in recent years. In terms of ethnicity, the New Zealand Ministry of Education statistics for 2011 show increases in enrolments of 21 per cent for Māori children, seven per cent for Pasifika and Asian children, and three per cent for other ethnic groups. During the period from 2007 to 2011 the largest increase in enrolments occurred in the Asian group (www.educationcounts.govt.nz/statistics/ece2/annual-ece-summary-reports). Linguistic diversity is also evident, with 71 different languages spoken by children and adults in early childhood education settings (Rosewarne & Shuker, 2010). Early childhood professionals who are not able to speak additional languages can draw on the expertise of those who can, such as parents and older siblings.

Families are very useful resources for developing self-authored e-books that can be used with children with additional languages (Barratt-Pugh, 1997). By giving attention to a child's additional language this elevates it to a position of dignity and respect as well as allowing parents to demonstrate their reading and writing skills in the language they are most comfortable using (Ordoñez-Jasis & Oritz, 2006). Along with assisting with the making

of self-authored e-books, this may also generate interest in this type of text and may encourage participation in the early childhood setting by parents and other members of the family (Shuker & Terreni, 2010). The importance of parents being involved in their children's education has been well documented (see, for instance, Ordoñez-Jasis & Oritiz, 2006). In regards to their participation in early literacy development, studies have shown early reading experiences supported by parents help benefit children's formal literacy instruction and build a base for later reading successes (Burns, Griffin & Snow, 1999).

We have found that our student teachers soon realise they are able to tailor digital texts in self-authored e-books to meet the needs of children from diverse backgrounds. For example, print-based resources from different countries and cultures may not be readily available to early childhood professionals but these can be accessed through the internet and used to produce self-authored e-books that are relevant for the diverse cultural and linguistic needs of children. According to Ordoñez-Jasis and Oritiz (2006) it is important to have appropriate authentic multicultural material in early childhood settings, which reflect the rich, diverse realities of families who attend to promote a culturally sensitive literacy program. (See, for example, *Leonardo's Story*, Shuker & Terreni, 2010 www.educate.ece.govt.nz/learning/exploringPractice/Literacy/EBooksPromotingYoungChildrensLiteracy.aspx.)

Drawing is an important activity for children who speak additional languages as it offers them another way to tell their stories, avoiding the deficit position that they may be put in due to their differences such as language and culture (McArdle & Spina, 2007). Many children use drawing as a means for expressing their thoughts, emotions and comprehensions of their world. Through drawing early childhood professionals can often acquire insight into children's thinking processes (Hall, 2010). Self-authored e-books can be an effective way of capturing children's drawings and a valuable resource for documenting their stories or thoughts about what they have drawn. A good example to illustrate this is *Penelope's Story* (see Shuker & Terreni, 2010, www.educate.ece.govt.nz/learning/exploringPractice/Literacy/EBooksPromotingYoungChildrensLiteracy.aspx).

Sharing and distribution

Self-authored e-books can be created, stored and distributed easily. An e-book can also be printed out to make a traditional type of book (but using only text and images) that can be incorporated into the early childhood education setting's book collection or sent home with children. We have noticed that sometimes early childhood professionals laminate these printed-out versions to add to their durability.

A key advantage is that self-authored e-books can be stored on a computer, storage media or a network hard drive. E-books stored on media such as CD-ROMs, DVDs or memory sticks can be shared with children's families to be viewed at home (Hourcade et al., 2010). Additionally, there is potential for e-books to be stored on the internet, and with broadband larger files can be downloaded quite quickly. Providing the user has PowerPoint or the free PowerPoint player, the downloaded e-book can be played.

Ethical issues, cautions and constraints

While copyright law in other countries is generally similar to New Zealand there may be major differences, especially in the duration of copyright and in regards to exceptions (www.copyright.org.nz). Copyright laws legitimately protect intellectual property so it is not possible to use material that is not your own. For instance, it would breach copyright to photograph a traditional book and use the images in an e-book. If you reproduced music you would also need to obtain the relevant license from the copyright owners. Under international law (the Berne Convention) copyright is automatically given to the person who created the work. In the United States it is possible to register the copyright of your work so if you would like permission to use another person's music you will need to approach, for example, the American Society of Composers, Authors and Publishers (ASCAP). For a list of copyright collection societies, including ASCAP, use the following link: http://en.wikipedia.org/wiki/List_of_copyright_collection_societies.

This would seem to limit what can be used but there is a considerable amount of copyright-free material available on the internet. There are sites which state that images are for free use. (See, for example, www.pics4learning.com/index.php and www.findsounds.com/.) However, the material still may be subject to conditions (such as acknowledgment) and to limits (for example, the image or sound can be used in a teaching environment but not for commercial use). It is important to read the terms and conditions so that your use is within the scope of the license. If a broader license is required you will need to contact the copyright owner (www.copyright.org.au).

There is also good potential for the use of Clip-Art libraries. Clip-Art images can also be used freely. Though free images and Clip-Art might be a starting point we feel that the e-book medium is best used when early childhood education settings make their own original material using the learning contexts of the children. With the support of early childhood professionals children can take photographs of their own artwork, take their own photographs of things that interest them, record their own songs and music, or make their own videos. All these can be used for making self-authored e-books.

Conclusion

We argue that early childhood professionals and children can actively take ownership of authoring digital texts by creating e-books and that this adds a number of new literacy possibilities, while retaining many desirable features of traditional books. E-books have great potential to make computer use more interactive through the creation of these interactive texts. They can provide opportunities for the development of bilingual and multilingual stories. One of the most useful features of e-books is the ability for children to share and distribute their work widely and easily with their friends and families. As the children of the 21st century move into an increasingly digital world they are likely to encounter more literacy objects in digital form than they encounter as traditional book forms. The development of e-books allows children important creative learning opportunities with digital technologies.

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