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NEW LITERACIES
AND NEW MEDIA

The changing face of early literacy

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This chapter addresses the possibility of connecting children’s print-based literacy experiences with technology-mediated interactions. The concept of new literacies is introduced in light of the implications for young children’s consumption and creation of digital texts. Four key features brought to the fore with new media – personalization, creativity, haptic feedback and interactivity – are discussed in detail, to prompt a broader outlook on the enduring key issues in early years literacy education.

Unlike generations before them, today’s children can engage with texts in various forms and formats and can become part of a story experience in various multimodal, hybridized ways. In addition to physical books, children’s texts and narratives are available on several devices (e.g. iPads, Kindles, Wiis, Xboxes), with each platform affording a different experience of stories, text and narrative.

The emergence of new reading platforms (such as Kindles and iPads) on the market in the early 2000s has been accompanied by an emergence of new terms to describe their affordances and accompanying practices. The so-called ‘new media’ encompass a variety of functions and possibilities with new technologies, including those for reading and writing, and the term ‘new literacies’ is used to describe the range of digital, multimodal ways of meaning-making with texts in the twenty-first century. I begin this chapter by specifying what new media and new literacies mean in the context of early literacy and discuss the old dichotomized view of positive and negative influences of new media on children’s early language and literacy development. This brings to the fore four issues accentuated through new media and emergent research on their benefits: personalization, creativity, haptic feedback and interactivity. I discuss each feature in detail, with emphasis placed on the extent to which they constitute new objects of study and practical concern. I outline how the focus on specific affordances of new media for specific kinds of literacy can cultivate a broader outlook on the overall merit of technologies for children’s reading and writing. The chapter concludes with an outline of the additional work necessary to come to a better understanding of the affordances of new and old media for children’s literacy now, and in the future.
New media

Since the early 2000s, children’s books have begun to emerge on iPads as storybook apps or ibooks and on various Android tablets and smartphones as digital or enhanced e-books. National surveys in Western countries indicate that increasingly young children are accessing texts and narratives in digital in addition to printed format. In the UK, data from Ofcom (2013) suggest that 39 per cent of three- and four-year-old children now use a tablet computer at home. In the USA, the percentage of children who have read an e-book increased across all age groups between 2010 and 2014 (25 per cent vs. 61 per cent; Scholastic, 2014). In Australia, 45 per cent of eight-year-olds use screen-based media for longer than two hours a day (Houghton et al., 2015). These numbers increase year on year and over the globe. Some large-scale initiatives (e.g. One Laptop per Child; see Negroponte et al., 2006) have brought digital books to the developing world, contributing to the rise in availability and increased use of new technologies among young children outside the USA or UK. In addition, the price of mobile phones and simple tablets has gone down significantly, allowing for a widespread use of mobile technologies on a global scale. Availability and accessibility ought not to be confused with quality of interaction. There is evidence that even in developed countries such as the USA, there are the so-called access and participation gaps in low-income families (Rideout and Katz, 2016), which constrain the quality of interaction and educational benefits derived from children’s engagement with technologies. In developing countries, the complexity of merging the knowledge of the West with the physical infrastructure of the developing world often means that the benefits are often not evident or sustained (Kraemer et al., 2009). What remains a fact is that increasingly young children are engaging with texts and narratives in a digital format, that this is a trend across the world and that it has implications for their early literacy.

What is also clear is that the technology development is advancing at a rate faster than at any time in history. Researchers cannot leapfrog over old infrastructure models in schools and research institutions. Consequently, there is a growing gap between practice and research in relation to new technologies in all areas, including early literacy (Robb et al., 2011). Teachers and caregivers are regularly ‘bombarded’ with conflicting advice concerning whether and how to use new media with young children and often, in the absence of empirically based guidelines, they tend to follow advice from technology journalists rather than researchers. Inadvertently, this may lead to the introduction of inconsistencies into practice and the neglect of important functions of technology for young children’s development (Brooker and Siraj-Blatchford, 2002). It has also led to several myths developed around the benefits and limitations of new media, including the popular notion that new media bring unprecedented opportunities which can revolutionize education (see Selwyn, 2007 for a discussion on this topic). While it is true that the devices and forms of education delivery are new (for example, iPads have been on the market since 2010), what is often not new are the ways in which these new tools are used in school settings. Several reports document that in many school settings, teachers use new media in the same way as they used their old media, a challenge all too familiar to technology researchers and educators (Crook, 1998, 2001).

This leads us to the question of what new media actually mean and the importance of specifying what is new about them: is it the new way of representing content or is it the actual usage? In the case of early literacy, are new media ‘new’ because, for example, they represent stories as interactive short films specifically designed for iPads? Or are they new because the way we read these stories is fundamentally different from our previous way of engaging with stories? In these reflections, it is important to specify whether we focus...
on the specific technology underlying the media or its actual usage or its context of use. As for the technology underlying or generating new media, the following platforms have become available since the early 2000s: smartphones and tablets, wearable technologies (e.g. activity trackers) and augmented reality technologies. When thinking about the usage of these new technologies, the many media supported by the technology include ‘computer and video games (both casual and serious types), virtual reality environments, social networks, web sites, mobile devices, blogs, and podcasts’ (Kron et al., 2010: 2). In terms of context of use, new media can be used for various purposes in various environments, including home and school or formal and informal learning contexts (see Falloon and Khoo, 2014).

In this chapter, the focus is on the purpose of nurturing children’s early literacy skills (in their traditional as well as contemporary sense), and on media use in children’s homes and schools. Given this focus, I selectively focus on literature that is built around children’s digital books, available on a range of platforms, supporting various usage patterns in various contexts.

### Children’s digital books

Children’s digital books range from multimodal digital displays of traditional stories to highly interactive new story experiences. Often called e-books and apps, digital books can be accessed on portable touch-screen technologies (tablets, smartphones, mini tablet computers) or simple e-readers (Kindles, Nooks or Leapsters). These devices can display a given text or story in sound, pictures and text, with a varying degree of customization and personalization options. Depending on the interactivity embedded in a specific digital book, there are varying degrees of nurturing a child’s creativity, imagination, hands-on experiences and intrinsic motivation to read. This chapter focuses specifically on the digital books that display the narrative in a multimodal way (i.e. pictures, text and sound) and with which children can interact via touch, in addition to sound and visual mode of interaction.

Before I delve into the potential of such digital books for supporting children’s literacies, it is important to acknowledge the current debate about their appropriateness for young children. Digital books are part of the new frontier of technologies which are often scrutinized for their value and developmentally appropriate content. The current research and policy consensus is that for children under the age of two, there is little additional benefit of using digital books instead of physical books (see Brown, 2015). For children aged two years above, there is no officially agreed minimal age of use, with very contrasting views in terms of whether technology helps (e.g. Wolfe and Flewitt, 2010), damages (e.g. Greenfield, 2004) or enriches (Plowman et al., 2010) children’s early learning. The stance taken in this chapter is that given the ubiquity and frequent use of technology among children of preschool age, the question of whether children’s digital books are good or bad is essentially beside the point. Digital books should not replace but enrich children’s literacy experiences. The age at which digital books are introduced to an individual child depends on the child’s abilities and family preferences. The real question then is how we can effectively integrate digital with traditional reading resources. Before attempting to answer this question, it is important to agree on a definition of new literacy or new literacies.

### New literacies

As other chapters in the book have indicated, the definition of literacy is in the process of flux, with concepts such as multiliteracies (Cazden et al., 1996), digital literacy
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(Merchant, 2007), information literacy (Eisenberg et al., 2004) and new literacies (Street, 1998) extending the traditional definition of literacy (see Clare Wood’s chapter in this volume). The key issue that draws these various concepts together is the attempt to understand the multitude of ways in which today’s children engage with text presented on digital platforms. To engage with text and narrative represented in multiple forms and formats requires a wider set of skills than to engage with text in the print format. Therefore, ‘literacies’ in the plural rather than ‘literacy’ in the singular helps keep the focus on the multiple ways in which children make meaning of texts represented on various platforms available to them. These literacies encompass a range of competencies, including touch-typing and navigating through a complex landscape of textual, visual and audio meanings, as well as interfaces activated through various kinds of finger swipes, clicks and taps. Thanks to advanced logographic and haptic navigation options in some of the devices (e.g. the latest iPad version), increasingly young children can lead complex literacy lives without the ability to spell or decode. In addition, the digital medium allows manipulation through drawing (aka visual texts) and/or recording (aka spoken texts), which makes it easier for young children to manage specific book functions and access content from within, as well as outside, their favourite titles. Moreover, considering the recent trends in the app development for adult users, it is likely that gesture and simple sounds will become important engagement mechanisms for young children who might not be able to, or who choose not to, manipulate digital books through speech or tapping.

Despite the wider recognition of multiple literacies, when it comes to digital books and new technologies more generally, there is often a tendency to plummet into black-and-white thinking about the role of print versus digital books rather than their synergistic potential for innovation. As mentioned, the danger of such an approach is that it creates a conflict between research and practice and confusion for parents/educators. Children’s digital books are a hybrid of previous and new media (Kucirkova, 2014b) and separating them might create disjoint experiences for the children. In contrast, keeping the digital and print books, with their benefits and limitations, together can create a spectrum of possibilities for innovation. In particular, if researchers approach new literacies from the point of view of new as well as old media, they could catalyse innovative research which contributes to a synergistic and more holistic curriculum of early literacy. Thus, if we wish to foster children’s current and future literacy skills, we need to be ‘mindful of issues related to the evaluation of new and traditional literacy practices’ (Kucirkova, 2013).

Thus far, the potential of digital books to support children’s early literacy has been divided into investigations preserving traditional theoretical frameworks of literacy and those following the newer definition of new literacies. Similarly in school contexts, the focus has been on traditional literacy skills while in children’s homes book engagement often takes place with new literacies. Traditional literacy practices include writing development, phonological abilities, independent reading (Labbo, 2006) and traditional outcome measures related to shared reading include story comprehension or vocabulary development (see Chapter 22). There is a growing body of evidence concerned with the benefits of digital book reading measured according to traditional literacy practices and outcome measures (see, e.g., Korat and Shamir, 2012; Parish-Morris et al., 2013). Also, there seems to be ample official guidance concerning how teachers or caregivers can support children’s development for traditional (e.g. Dickinson and De Temple, 1998) or new literacies (e.g. Revelle et al., 2007). What is currently missing in the literature is advice on how to use digital and print books to nurture children’s traditional as well as new literacy skills. Also, how can digital and print books jointly support children’s traditional literacy skills as well as their new literacies?
If we wish to understand how print and digital books support traditional (e.g. reading and writing in print media) as well as new literacies (e.g. navigating digital interactive books), we need to become more nuanced in the way we think about the main features of digital books and about the ways in which they might enrich rather than disrupt or replace previous formats. Given that literacies are multifaceted, we need to explore multiple forms of engagement and identify the common features that cut across the boundaries between new and old media and new and old literacies. The current thinking is to direct practice and research more towards a synergistic understanding of digital books and, in the remainder of the chapter, I outline how it can be further developed. I begin with a short overview of how such an understanding came about in my own work.

**Key features of children’s digital books**

In 2014, I became involved in a project between Book Trust (the UK’s largest literacy charity) and The Open University (my home institution at that time), which aimed to identify the key facets of children’s engagement with digital books and offer a ‘partnership’ approach for digital and print books (Kucirkova, 2014a). As part of the project, we ran several workshops and focus groups with teachers and children under the age of eight across the UK, with the aim of identifying the key influences of digital books on the child–caregiver shared reading experience and children’s budding literacy. We were keen to crowdsource ideas and keep the dialogue open to practitioners and parents worldwide. The project was therefore accompanied by a series of research blogs freely accessible on the Booktrust website with the possibility to comment on content (www.booktrust.org.uk/).

In these research blogs, I documented the teachers’ and children’s perspectives which we collected throughout the project, and summarized literature and current thinking around some key issues in relation to the use of digital books with preschoolers. I share here some of the main points from these blogs, which revolved around the key defining features of digital books and their influences on early and new literacy. There were four main features that were highlighted in these discussions and that are particularly relevant for early literacy development: personalization, creativity, haptic feedback and interactivity.

**Personalization**

A comparison of key features of print books, simple electronic books available for desktop computers and highly interactive digital books available for tablets reveals that they share many similarities. However, their key difference is personalization, or the possibility to personalize a narrative to a child’s needs, preferences and interests. For digital interactive books personalization is available via multimedia and increasingly also connected to augmented and virtual reality.

Although in practice, customization and personalization are often used interchangeably, there is an important conceptual difference between the two. Children’s digital books can be customized in terms of their display. For example, an image can be made bigger or the font can be enlarged. Children’s digital books available for tablets and iPads can be personalized in terms of their multimodal content. For instance, children can insert their own voice-overs to accompany a given text, or they can add their ‘selfies’ to the illustrations of a favourite story. Clearly, children are likely to be more motivated to engage with books that feature content they have created themselves or others have created specifically for them. For instance, a child is more likely to engage with a digital book that features a recording of their parent than a
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pre-recorded automated voice. It is also clear, however, that adding the user's own contents may exert a motivational influence that is not related to literacy but to other aspects of a child's early development, such as self-esteem or self-awareness (Demoulin, 1999, 2001). In addition, the sensitive nature of children's marketization and the growing commercial interest in personalizable products (Arora et al., 2008) make it important for adults to support and carefully navigate the personalization options together with the children. Considering the wider context of personalized books, it is no secret that personalization is also a powerful marketing tactic, with many products and services tailored to appeal to young children. Adults therefore need to help children strike a judicious balance between personalized and non-personalized stories, given that children need both for holistic education.

It is also important that teachers, parents and other caregivers and educators reflect on the extent to which children create their own stories or merely select pre-established story elements. Apps with pre-established story templates, story characters or customizable voice-overs may be engaging or entertaining but, in terms of honouring children's voices, they are merely guiding children's story-making in accordance with the publisher/app producer. What is important to bear in mind is the difference between genuine and superficial personalization options. Open-ended story apps, such as tablet book-making applications (e.g. My Story™, Our Story™, Book Creator™), enable children to create stories based on their own texts, pictures or sounds. The more children add their own story extensions, the more they can become empowered (Harrison, 2003) and engaged in the story (Kucirkova et al., 2012). However, the more a book is personalized, the more it means that children can become self-centred in their speech when they talk about the books' contents with an adult (Kucirkova et al., 2014a). Sénéchal in this volume outlines how children acquire new vocabulary from books, which underlies the importance of rich text and new vocabulary in children's books.

Creativity

Creativity has become one of the key considerations when trying to ascertain whether a digital book is of value to young children (see, e.g., Children's Technology Review http://childrenstech.com/blog/archives/tag/creativity). Creativity is a complex and somehow elusive phenomenon, often used to describe the ability to think about new ways of solving a problem or finding an alternative route to reach an end goal (Goleman et al., 1992). As Young (1985) points out, some believe that creativity is a gift, while others consider it a skill that can be nurtured and developed with the right amount of support and guidance from others. A key component of Craft's (2005) definition of creativity is the capacity to envision solutions that move from 'what is' to 'what might be'. Craft (2001) coined the term 'possibility thinking' which covers the various kinds of dispositions related to creativity, including
children’s capacity to ask questions, play, immerse themselves in an activity, imagine alternative solutions, make connections, take risks and generate innovative ideas. To facilitate children’s possibility thinking at home and in schools, educators and caregivers need to provide children with opportunities for exploratory and combinatory play and facilitate environments that foreground ‘the combination of relevance, ownership and control’ (Jeffrey and Craft, 2004).

In a study with 40 preschoolers, Kucirkova and colleagues (Kucirkova et al., 2014b) compared children’s use of exploratory talk (which includes asking questions and providing reasons; see Mercer and Wegerif, 1999) with open-ended versus closed digital books. Quantitative and qualitative indices of children’s engagement suggested that with open-ended digital books where children could add their own texts, sounds and pictures, children used more exploratory talk. Joint problem-solving and collaborative engagement was also apparent when children were given the opportunity to add their own captions to digital photographs. It thus seems to be the case that digital books which do not limit children’s story-expression through template-based approaches are more likely to support children’s collaboration with others and their discussion of ideas and possibilities.

This is not dissimilar from research with print books and hand-written texts, where numerous studies showed that learning contexts that are open to building upon the expertise of children and that incorporate different forms of text and different kinds of knowledge are more likely to develop and capitalize upon creative and productive educational curricula (Chappell et al., 2012; Cremin et al., 2013).

**Haptic representation**

When thinking about new literacies facilitated with new media, we need to reflect on the role of touch and the extent to which haptic engagement with digital books is different from children’s experiences with a print book and what this difference might mean for children’s early literacy. Research conducted with traditional books found that when it comes to book reading and young children, touch is extremely important to enrich the reading experience. The so-called touchy-feely books with animals’ fur, ribbons or small mirrors, or the little holes in peekaboo books, have been designed to support young children’s physical exploration of various textures and sizes and help develop their fine motor skills (Henderson and Peholski, 2006). The touch-interactive elements in the book are crucial to enable children to develop general as well as book-specific fine motor skills, including page-turning and positioning the book at a good angle for viewing/reading (Harms et al., 1998). As such, children who are given the opportunity to manipulate objects and experience their textures can often demonstrate implicit knowledge that they may not yet be able to verbalize.

As I discussed with teachers and on the Book Trust blogs, with digital books a gentle touch initiates a very different response than one could expect from a non-digital object. Although the surface and texture is the same for all digital books (i.e. that of a tablet or e-reader), it generates a different response when tapped or touched. For instance, touching the right corner of one digital book may link children to the next page. In another digital book, a circular movement with a finger may activate a pre-recorded voice-over for their favourite book character. In another e-book, sliding a button may activate the ‘buy more’ button for purchasing new clothes for their book avatars. Parents, educators and other caregivers can help children to distinguish the complex consequences resulting from touching or tapping a ‘hot spot’ in a digital book, and point them towards resources where touching a specific item is also educationally rewarding. Haptic manipulation of digital skills is thus becoming a new kind
of ‘digital literacy skill’, which gets more complex as children encounter different touch-manipulatable digital texts and interact with different touch-screen technologies.

For children with special educational needs, the possibility to interact with a digital book through touch is a particularly valuable way of communicating their feelings around a story and self-managing the experience. Flewitt et al. (2014) examined how the gestural and sensory experience of touch can enable young learners with moderate to complex physical and/or cognitive disability to engage in independent engagement with digital books. In a case study with a diverse group of students aged 3 to 19 years with a range of complex learning difficulties, we found that the sensory and kinaesthetic experience of human touch enhanced the students’ motivation, control and independence when engaged in literacy endeavours with digital books, notably if these allowed them to freely communicate their feelings. For instance, when children in the class created book covers for their self-made digital stories, they used various advanced features provided by the tablet (e.g. checking for potential grammatical errors with the spell checker, experimenting with font and colour options), using their fingertips to drag each element around the screen. This would not be possible with traditional literacy resources which do not afford this level of aesthetic appraisal of a piece of text and the corresponding literacy engagement options through touch.

Thus, although the role of haptic engagement in children’s typical early literacy engagement has been by and large under-theorized, its role in new literacies and new media is becoming more important (see Mackey, 2016).

**Interactivity**

Another feature brought to the fore with the digital medium is interactivity. Interactivity refers to the child’s interactivity with the text, and the potential interactivity between a child and adult as they read the text together. While with print books, interactivity was mainly of a physical nature, the way digital books interact with the emerging reader is different. As others have pointed out (Cordero et al., 2015), interactivity or physical engagement with a book are not novel features belonging to digital books only – they have been embedded in different forms in print books before. What is new is their representation in the digital book and the potential impact they could have on the child and their literacy development. With print books, children have long been able to interact with pop-up books such as *Pretty Polly* (Bingham and Nesbit, 1897), or in question-and-answer books (e.g. *Don’t Let the Pigeon Drive the Bus*, Willems, 2003). Digital books offer educational interactivity features, for instance scaffolding for the emerging reader (e.g. highlighting the text when each word is read aloud) or let the child choose independently how to advance the story (e.g. by choosing alternative story endings). This could be facilitated by the adult when reading a book, so the child is more independent with an interactive digital book. In addition, augmented reality apps, which overlay digital elements on to real objects as viewed (through the device’s camera) on the screen, allow children to interact with the story in a three-dimensional multimodal and multi-media way.

Emergent research with digital books shows that there is a fine line between interactive features engaging children and distracting them from the book. Kim (2014) compared parent–child interaction when reading print, digital and handheld electronic storybooks. Systemic functional linguistics (SFL) showed that the talk of 20 parent–child dyads was different across the contexts, with some digital features of the electronic and digital books supporting more technology-oriented talk rather than talk concerned with the meaning of the stories. With too much interactivity, children spend the reading time playing the game...
or engaging with the interactive features and miss many of the educational elements embedded in high-quality children’s books. These findings are not dissimilar from findings yielded by research concerned with print books. An important study by Ganea et al. (2008) indicates that learning (as measured by how well 15- and 18-month-olds can extend newly learned labels both from pictures to objects and from objects to pictures) from print picture books is facilitated if the books are simple and non-manipulable and contain realistic illustrations.

Bus et al. (2015) and Takacs et al. (2015) reviewed the effects of interactivity in enhanced digital books as well as simpler e-books for desktop PCs and found that, overall, interactive features like games, hotspots and dictionaries embedded in books, impede children’s performance on tests of vocabulary and story comprehension. However, some interactive features, such as animated pictures, music and sound effects, which are compatible with the story, were found to be beneficial for children’s story comprehension and expressive vocabulary. Thus, interactivity can be beneficial to children’s learning from digital books (when evaluated from the perspective of traditional reading skills), but it is important to differentiate the various kinds of interactivity available and their alignment with the storyline.

This research also highlights that interactivity is a two-way variable; that it affects the child in terms of independent as well as shared book reading. While there are interactivity options embedded in the book, research also needs to be mindful of the child’s interactive engagement with the adult reading the book with him or her. As we know from research with print books, the social aspect of reading books with adults or with an older child is vitally important to children’s language development (Snow, 1976, 1993). When children are learning to read from digital books with embedded feedback, the parent–child dynamic is affected which may have important learning implications. In 2013, Parish-Morris et al. explored the differences between reading styles when parents and children read a print book as compared to a story presented on a children’s touch-sensitive electronic console book. The more electronic features there were in the book, the less parents engaged in supportive reading styles and the lower the children’s overall story comprehension. When thinking about interactivity, it is therefore crucial to consider not only its influence on a child’s independent engagement but also its effects on parent–child joint interaction.

Future directions

Digital books foreground several features of early literacy engagement which are becoming the focus of research concerned with new as well as traditional forms of book reading with young children. If researchers and practitioners engage in questions around how the new features of digital books can complement learning from the printed page, they can move closer to a considered dialogue around potential benefits and limitations of digital books on children’s emergent literacy in the novel as well as traditional sense. One should also bear in mind that there is some overlap between old and new practices and therefore scope to combine some of the educational outcomes and children’s skills, for example engagement with the material or critical thinking (Grisham et al., 2014).

Given the newness of the medium, the benefits/limitations analysis remains by and large hypothetical. However, given the urgency of the need to inform practitioners and children’s parents about the usefulness of these tools for young children, I provide some practical points below that could be considered by practitioners and policy-makers. These are based on several consensus statements and recommendations in the literature as well as on theoretical and expert opinion.
Practical implications

On a daily basis, practitioners and caregivers are faced with the question of which digital book to offer to their child, which digital reading platform to invest in and how to align it with specific curricular objectives or their child’s specific needs. What are the key considerations for book and reading platform use with young children in light of their developing literacy skills?

The potential benefits of digital books on young children’s early literacy are several: interactive digital books can provide an impetus for parents to interact with children in ways that could be mutually enjoyable and beneficial. The technology means that storybook apps offer a means to decrease the asymmetry of adults reading and children listening, instead providing opportunities for both parent and child to jointly discover meaning embedded in an app or e-book. On a wider level, the global market for digital books offers the potential for a much easier production of international variants of the same book. Digital storybooks can more effectively connect remote communities and bring local stories to global audiences. With easy personalization options embedded in many digital books, children can become book authors but also book heroes with a few taps. Parents can create stories together with their children, incorporating photos of family members or audio-recordings. Some basic customization features (such as enlarging the text or changing the background colour) make engagement easier for those who are not confident readers. Similarly, for children with attention difficulties, feedback embedded in the digital books may help capture their attention and thus motivate them to engage with a piece of text.

However, at the time of writing this chapter, we are far from realizing this potential of digital books. Research is predominantly concerned with traditional outcome measures of book reading and there is a very limited range of quality texts designed for the digital multimedia format. In research, we need to be asking more ambitious questions around children’s individual and shared reading engagement with digital books, how this dovetails with their engagement with physical books and impacts their development of reading, writing, language, story comprehension as well as their haptic engagement, awareness of personalization options, ability to navigate interactive features and be creative. When supporting children’s reading for pleasure or reading for enjoyment, we need to be mindful of the six key facets of engagement brought to fore with digital books: affective, creative, interactive, shared, sustained and personalized reading engagements (Kucirkova et al., 2015b). These facets do not only support children’s reading for pleasure but are also aligned with the ‘4Ps of digital childhood’ – plurality of identities (people, places, activities, literacies), possibility-awareness (of what might be invented, of access options, of learning by doing and of active engagement), playfulness of engagement (the exploratory drive) and participation, which Craft (2011: 33) theorized as the key features of changing childhood and youth in the digital revolution.

Currently, and disappointingly, too many children’s e-books seem to compromise well-established book principles for the sake of novelty. There are children’s book apps that are very ‘game-like’ (full of entertainment features) but supplemented with only formulaic text. At the other end of the spectrum, we have digital books that are very text-heavy, with only a few engaging features. In addition, far too many decisions in the children’s digital book market are dictated by cost rather than the affordances of the various media currently available, and the creative potential for children’s learning and enjoyment. Therefore, practitioners and parents need to be aware of some important limitations of new media. While in some instances augmented reality apps can enhance a story experience, in others they may take away the impetus for a child’s own imagination. Personalized digital books
can be both motivating and great fun—but too much personalization may become self-absorbing. Similarly, while digital books with several interactive features can involve and empower children, too many bells and whistles may simply overwhelm them. There is also a real concern among educators that innovative digital experiences with text at home are radically different from children’s experiences with texts at school, which might divide instead of connect their home–school lives.

Practitioners play a vital role in ensuring that the benefits and limitations of digital books are adequately understood and shared with children. They also play a crucial role in helping children to balance their interactions with print and digital media. Currently, the guidance on how to merge digital with print books to support old as well as new literacies is very limited. It is important that children’s ‘reading diet’ includes both and merges practices and skills necessary for children’s meaningful engagement. Many teachers develop their own strategies to achieve a healthy balance. For instance, in our project (Kucirkova et al., 2015a), the teachers employed digital books to support children’s hand-writing skills: teachers used digital pictures and digital recordings as stimuli for the writing activity. To teach children different genres, they used the digital books with editable text. For instance, children inserted a caption below a photograph in the digital book or added a typed label to their own digital drawings. As such, they became aware of the various affordances of the different media and how they can be used in different contexts, fulfilling different purposes.

**Future research directions**

In an increasingly globalized world and in the context of fluid notions of literacy, one of the most important future research directions is community literacy which brings together cross-generational and cross-cultural perspectives (see the seminal work of Gonzales et al., 2013). A community approach can ensure that new literacies become a shared concern among old and young. All too often, elderly members of the community, including children’s grandparents and senior teachers, hesitate to become part of technology-mediated activities. Part of their hesitation follows naturally from some of the rhetoric that has surrounded the discussion of ‘digital natives’. Prensky (2001) and followers speak of younger generations in terms of digital natives as if they come naturally to new technologies. While this might be helpful to highlight young children’s natural disposition to confidently approach and easily manipulate touch-screen devices, the language of ‘digital natives’ and ‘digital immigrants’ implies a divide and a homogeneous group of children. This shifts the focus to what separates the older and younger generation rather than looking for points of conjunction and often leads to the perception that all children are digitally savvy and skilled. If we focus on specific features of digital and print books, such as personalization, creativity, haptic feedback and interactivity, that is features that are relevant to children’s current and past literacies, we are more likely to recognize commonalities across practices and populations.

A community approach to the study of digital books implies synergy between old and new forms of engagement with texts and, in addition, a collaborative stance among all stakeholders. It is only through collaboration and high-quality public scholarship that we can strengthen the ties between academia and book producers (or software designers) and between teachers and policy-makers. To fast forward the gap between available research evidence and the range of digital books advertised as educational and marketed for young children (Shuler, 2009), the principal stakeholders need to closely collaborate with each other. In this collaboration, we need to ensure that media released on the market fulfil criteria...
of effective interaction, support effective learning practices and, crucially, that the child’s voice is foregrounded.

If we position the reader, that is the child, at the centre of all discussions and decisions, the potential for innovation is enormous: there could be greater democratization of literacy ownership, with more children authoring the story contents and the potential for more printed stories to originate and propagate in multilingual and multicultural communities (Kucirkova, 2016). This would also imply a greater variety of formats and forms, given that children, just as adults (Zhang and Kudva, 2014), can use digital and paper-based books for different purposes (O’Donnell and Hallam, 2014). For digital books in particular, children’s contribution would be critical, given that children understand and use technology differently than adults. The tradition of involving children in research and product development is not new (see Kellett, 2005), but digital books and comparable technologies highlight its need and offer several novel possibilities for its realization.

In conclusion, new media is a broad concept which, in relation to supporting children’s early literacy, includes digital books and their use in home and school context. Digital books can be deployed to support children’s new literacies, such as meaning making with multimedia representation of texts and narratives. Although the term ‘new’ implies novelty, it would be more accurate to think of these tools and practices as foregrounding certain new features. A community-oriented, collaborative stance towards the role of new features in children’s development of traditional and new literacies can illuminate the conditions in which individual children benefit most.

References


New literacies and new media


