

Picturebooks 2.0: Transmedial Features Across Narrative Platforms

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This article focuses on the varying levels of interactivity associated with reading and viewing four instantiations of a fictional narrative across analog and digital media.

LIKE OTHER MULTIMODAL texts, the design, publication, and delivery of contemporary picturebooks have been impacted by the digital revolution and the affordances of digital reading devices. Print-based picturebooks are being published alongside digital narratives, and new digital picturebooks are being created that no longer begin as print-based books. These digitally produced texts may resemble in some basic ways their print-based predecessors, but these digital texts provide access to Web-based resources, navigational features, and types of interactivity that print-based texts do not support (Schwebs, 2014).

The nature of the transaction between children and contemporary picturebooks has been theorized, debated, and researched from a diverse array of theoretical and pedagogical perspectives (Arizpe & Styles, 2003; Lewis, 2001; Nikolajeva & Scott, 2006; Nodelman, 1988; Sipe, 1998). Scholarship focusing on the interactions among written language, visual images, and graphic design features in children's literature and how these elements work in concert to present a complex narrative has extended these theoreti-

cal and pedagogical perspectives in significant ways (Bang, 2000; Salisbury & Styles, 2012). This extensive history of research has largely focused on print-based picturebooks and only recently begun to consider the ramifications of digital technologies on the picturebook itself and the affordances of these digitally rendered narratives (Al-Yaqout & Nikolajeva, 2015; Schons, 2011; Stichnothe, 2014).

Although picturebooks continue to be published in print-based formats, many are now offered in digital formats for reading and viewing on computers, tablets (e.g., iPad), and smartphones (Yokota & Teale, 2014). How picturebooks are digitized varies from simply scanning print-based picturebooks to make them available on digital reading devices to the creation of sophisticated software applications, or apps, that offer interactive features that alter the original format of the picturebook, provide new options and content for the reader, and move these digital narratives closer to the gaming or entertainment industry (Juul, 2001).

Digital technologies and software platforms provide new affordances and capabilities that change the transactions

between readers and multimodal texts in significant ways (Serafini, 2014, 2015). These changes challenge literacy theorists and researchers to reconsider how picturebook narratives are experienced; the relationship among the textual, navigational, design, and visual elements of digitized picturebooks; and the expanding possibilities afforded the picturebook format across digital platforms. As narratives for children in digital formats evolve and appear in greater numbers of classrooms, picturebook scholars and educators will need new lenses or frameworks for analyzing these texts and developing pedagogical approaches that support classroom instruction and readers' transactions with the texts.

In this article, we focus on six transmedial features (Jenkins, Ford, & Green, 2013) associated with reading and viewing four instantiations of a fictional narrative across analog and digital media. We constructed an analytical framework that focuses on visual, aural, textual, paratextual, navigational, and transitional features that cut across analog and digital variants of particular multimodal texts. In closing, we suggest potential avenues for research focusing on the ways transmedial features affect the experiences of reading fictional narratives in digital formats.

Using *The Fantastic Flying Books of Mr. Morris Lessmore* (hereafter referred to as *ML*) by William Joyce (2012) as an example, we set forth a framework for analyzing the similarities and differences among print-based and digital instantiations of this narrative by considering the picturebook, film (Enochs, Farnworth-Smith, Kantrow, Joyce, & Oldenburg, 2011), app (Moonbot Studios LA, 2011), and augmented reality (AR) app (Moonbot Studios LA, 2012) instantiations of this narrative. *ML* is a story about a man who loses his home during a hurricane and is guided to another world, where he becomes the curator of books in a magical library. He takes care of the books in the library and shares them with other people in order to make their lives more fulfilling. Morris writes the story of his life in a journal and passes this book along to future curators as his life draws to a close.

Other researchers have analyzed this narrative across platforms focusing on how it "defines, represents, or shapes the meaning of reading itself" (Hateley, 2013, p. 2); the differences in readers' experiences in transacting with narratives in picturebook, app, and film formats (Schwebs, 2014); and how picturebook theories need to be reconceptualized in light of the affordances and limitations of digital platforms (Al-Yaqout & Nikolajeva, 2015). The focus of this

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article is not on the content of the fictional narrative per se; rather, we use the four instantiations of *ML* to illustrate and analyze the transmedial features that cut across print-based and digital platforms.

Four instantiations of the story *ML* were considered in our analysis: the animated film, the digital app created for the iPad and Android operating systems, the print-based picturebook, and the AR app. The AR app is not a stand-alone instantiation; rather, this software application requires a digital reading device with a built-in camera and the picturebook to function. These four instantiations were offered to the public as commercial products beginning in 2011 through the Moonbot Studios website (<http://moonbotstudios.com>) and were released in the order listed above. However, this is not necessarily the order that these instantiations were created. A note attached to the picturebook discusses the creation of these different instantiations and the order in which they were released, suggesting that Joyce worked on the picturebook first but was redirected due to health issues to collaborate on the film before returning to the creation of the picturebook. In our view, the order of creation is not as important as the affordances and limitations associated with the four instantiations of the fictional narrative across analog and digital platforms.

Interactivity and Participation With Transmedial Narratives

To some degree, every act of reading is interactive (Rosenblatt, 1978; Scholes, 1982). Readers must work through the presentation of a fictional narrative using physical, cognitive, visual, emotional, and embodied capabilities. However, the types of interactions that readers have with print-based and digital variants of fictional narratives vary in their types of interactivity, the physical and cognitive manner of readers' participation, and the affordances and limitations associated with the various technologies used to navigate these fictional narratives. In order to explicate the differences among the types of interactions possible, we first describe what constitutes the distinctions among these narrative instantiations (Ryan & Thon, 2014) and how these differences affect the ways fictional narratives are rendered across analog and digital platforms. In talking about the four versions of *ML*, we have chosen to use the term *narrative instantiations* and

not the more commonly used term *adaptations* (Hutcheon, 2006) because the order of release may not indicate the order of creation, and the three instantiations should be conceived as individual renderings of the fictional narrative across modes of re-presentation rather than adaptations from a single original version.

The digital picturebooks available today range across types of interactivity and complexity (Turrión, 2014). At a minimal level of interactivity, scanned versions of the original print-based picturebooks are simply digitized renderings of the original printed book and feature the same layout as the original, only viewed on a screen rather than in print-based or analog formats. These digital immigrant (Stichnothe, 2014) texts are simply analog texts that have been digitally scanned and closely resemble the original analog version, while offering no additional features from the original content aside from the navigational features (e.g., swipes, icons, Home buttons) that are used to access the text on a digital platform.

Digital picturebook apps may be conceptualized as enhanced renderings of the original print-based picturebook in that they offer additional content, features, and navigational options not associated with the print-based texts. Animations, sound effects, narrator voice-overs, and icons leading to hyperlinked resources are just some of the features offered in these digital versions. In contrast to digital immigrant texts, narratives that were initially designed on digital platforms and do not have an associated print-based book have been described as digital native texts (Stichnothe, 2014). Many of these digital native texts connect the reader to external platforms, such as social media, author and publisher websites, and multiplayer gaming scenarios that go beyond the self-contained, enhanced features of early digital narratives.

Turrión (2014) distinguished among three types of reader participation that vary across levels of interactivity: conventional, active, and interactive. Conventional participation is closely associated with the transactions of readers and traditional print-based texts. Active participation is associated with the transactions of readers and the interpretive demands related to postmodern picturebooks (Sipe & Pantaleo, 2008). Interactive participation is also associated with physical cooperation with digital texts, such as touching and swiping the glass surface of a tablet, and the co-construction of the narrative rendering.

A further distinction needs to be made between readers' participation with enhanced texts that have predetermined paths and outcomes included in the digital file that limit readers' interactivity, and ergodic literature or

cybertexts (Aarseth, 1997) that require readers to actively co-construct the narrative based on their choices and responses to hyperlinked and open-ended selections and options. The distinction between what Aarseth labeled trivial versus nontrivial efforts to navigate a narrative is an important consideration as we investigate the different types of interactivity and levels of participation between readers and texts. Simply turning the page in a print-based picturebook would be considered a trivial effort, whereas a nontrivial effort would include selecting and adding various elements to the narrative, acting as a character or avatar in the story, and deciding the outcome of the narrative by choosing or creating additional narrative content.

If readers of digital narratives are simply choosing between predetermined reading paths and hitting navigation buttons that take them to aspects of the narrative already embedded in the digital file, the type of participation is different than if they are co-constructing the narrative and adding content to what is to be read and experienced. This distinction may be described as the difference between asking, What happens next? and, What happens next if I ____? (Atkins, 2006).

Six Transmedial Features

The basic element or unit of analysis that we used during our investigations was the opening. Openings are the double-page spreads one sees when opening a picturebook. The two pages are separated by a gutter and presented simultaneously to the reader. In the app instantiation of *ML*, the openings were considered a form of tableau or the presentation on a single screen. In the film, openings can be associated with a single scene from the story experienced at one moment in the narrative sequence. In addition to the size and shape of these presentations, the materiality of these analog and digital platforms affects the way these openings are experienced by readers and how they transition between pages, tableaux, and scenes.

In our analysis, we considered both transmedial features that occur within a single opening, such as visual images, animations, narrative voice-overs, and textual elements, and transmedial features associated with the transition from one opening to another, such as the physical turning of a page in picturebooks, a finger-swipe across the screen of a tablet to move to the next opening, and the transition from one scene to another in the film instantiation. Both types of features will be discussed.

Features Within a Single Opening

Some transmedial features work to re-present the narrative within individual openings and are experi-

enced simultaneously in one spatial composition, whether viewed across pages, screens, or scenes that make up the narrative sequence.

VISUAL IMAGES

In the picturebook instantiation of *ML*, the credits page describes the visual images as having been rendered in multimedia. The 24 page openings in the picturebook sequence contain an array of static images rendered through paintings, ink drawings, letterforms, and sepia-toned sketches. The picturebook has a landscape or horizontal orientation, meaning the picturebook is wider than it is tall. The static nature of the images come to life in the mind of the reader during the reading event, and any semblance of animation occurs as the reader imagines the changes that take place between the sequential presentations of the various openings.

In the app, the narrative sequence is rendered across 27 separate tableaux. The visual images and animations in the app are associated with both static visual elements presented in the picturebook and animated scenes from the film. For example, in the opening tableaux of the app, the display transitions from a static image reminiscent of the style in the picturebook to a still frame of the same scene as it appears in the film. However, a critical point that distinguishes the app from other instantiations is the opportunity for interactivity built into the various tableaux that serves the purposes of navigation within the app, as well as the transitions between the various elements of the narrative sequence. The user is invited through visual cues that appear on-screen to drag a finger across the tableau several times, with each swipe transforming the visual scenery and alluding to subsequent events in the story.

Films are distinguished from picturebooks and apps through the sustained movement of visual images. The frame—the visual field bounded by the borders of the camera or the screen—may contain movement within itself, or the entire frame can move. Camera positions may pan from left to right or up and down, moving the entire frame of the scene. In *ML*, the opening shot zooms onto a static image on the first page of a book before it swoops over the city and zooms in on Morris as he engages in the act of writing. In this single shot, three movements pull the viewer into the story, giving the reader an overall view of the narrative setting, and introduces the reader to the character, all without the assistance of written text. Character actions and reactions can be made explicit to the viewer in a way that cannot be done in the static images associated with picturebooks.

The AR app works in concert with the print-based picturebook to offer the reader additional experiences. For example, holding the AR app opened on a digital tablet above the picturebook allows the app to recognize elements in the visual field and signal the app to reveal additional visual elements. On the cover page, the static illustrations are animated as the books start flying around the page. The AR app changes the illustrations into a more 3-D rendering, offering depth to the images. In addition, once begun, many of the illustrations included in the AR app can be repositioned to seem like the character and events in the story have left the book and are happening in the world of the reader. In a sense, the AR app serves as a bridge between the static illustrations of the picturebook instantiation and the dynamic animations of the app and film.

SOUND EFFECTS, MUSIC, AND VOICE

The only sound in the picturebook is the sound of the pages being turned by the reader, and the only voices present would be the one in the reader's head or the voice of a person reading the story aloud. The picturebook by itself is silent without physical intervention. Readers themselves, or other readers serving as the storyteller, give voice to the written narrative. The sounds and voices associated with a picturebook must be added from an external source.

Music and other sound effects contained within the app draw primarily from aural elements included in the film, although the app's built-in voice narration option represents another element unique to this instantiation of *ML*. The narrator's voice, which can be toggled on or off by the user, is the voice of an adult male and maintains a steady pace and even tonality throughout the reading of the story. In addition, aural elements are featured within each individual tableau that elicit sound effects when touched or activated. Some of these sound effects are associated with the film, whereas others are native to the app. For example, in a scene involving Morris's first encounter with a magical library, icons invite the user to tap on various book covers to elicit voiced narration of the first line of classic texts such as Charles Dickens's *A Tale of Two Cities*. These elements, although optional components of the app, serve as an invitation to the reader to extend his or her experience of the text. In addition, by referencing artifacts of the Western literary canon, the elements of the app add the possibility of intertextual referencing to the experience of reading the app (Schwebs, 2014).

Both the film and app instantiations of *ML* utilize diegetic and nondiegetic sounds, or sounds that originate within the story world and those that do not (Spadoni, 2014). Diegetic sounds help the viewer relate to film characters, and bring

the viewer into the story by allowing him or her to hear what the characters hear. In the film, Morris looks up from the book he is reading when he hears a warning about an approaching storm coming from the television. The reader hears this sound as well and is positioned to understand the character's reaction. In contrast, nondiegetic sound, such as the musical soundtrack, is not part of the character's lived world or experience. For instance, fast-paced, jarring music plays as Morris is swept away by a storm, but the character himself does not hear this music. Rather, the musical soundtrack is heard by the reader-viewer and may offer some emotional impact. Although the sound can be muted in the film, this would be an unexpected choice on the part of the reader because sound and image in film are so closely integrated.

In the AR app, the same music provided in the film is used in the app. In addition, sound effects, such as wind blowing, thunder, and the mayhem of the storm, are offered on selected pages. The AR app also offers a Read to Me function, and the same voice used in the app narrates the story.

TEXTUAL ELEMENTS

The title on the cover of the picturebook is rendered in gold, embossed letters and has a traditional, turn-of-the-century feel to it. The font of the book's 735 words is rendered in the font Grit Primer. The textual elements are presented on separate pages throughout the book on both recto and verso displays and incorporated into the illustrations. In several instances, the graphic design of the text alludes to movement and aligns with particular events in the story. For example, when the text reads, "the winds blew and blew," the final word *blew* is elevated, enlarged, and altered to depict the movement of the wind. In several openings, letters are scattered across the page as visual elements depicting Morris's wanderings inside the world of the books in his care.

The graphical display of the story's text in the app shares similarities with the print-based picturebook, with some key differences that have implications for the reader's experiences. The typeface used in both the app and the print instantiations is the same (Grit Primer) and resembles a font used in 19th-century American textbooks, perhaps alluding to a time when learning to read was widely considered an art form (Schwebs, 2014). The presentation of the written narrative differs from the picturebook to the app. Unlike the graphic design of the picturebook, where words and images are often blended together, the app contains a framed space at the bottom of the screen where the written text is separated from the illustrations. Although utilizing many of the affordances of the digital platform, the app is limited by

its single-screen size, format, and dimensions and does not integrate textual and graphical elements with the same level of cohesion as the picturebook.

Written text is often included within films, such as silent-movie narrations, or intra-iconic text—namely, text that authentically occurs inside particular illustrations or scenes (Beckett, 2014). However, the textual elements in the film are not displayed in the same manner as in the picturebook or app. Because of the absence of dialogue in the film, the viewer has to rely primarily on visual images and animation to construct the narrative events. Although auditory features certainly contribute to readers' understanding of the narrative, the music and sound effects cannot convey the story on their own. In the film, the viewer has the option to add closed-captioning to the viewing experience. However, because *ML* does not feature dialogue, the text in the closed-captioning would be limited to written descriptions of sound effects.

PARATEXTUAL ELEMENTS

Paratext (Genette, 1997) is an umbrella term that refers to elements contained within the book itself, called peritextual elements, and outside of the book, or epitextual elements. These elements are primarily supplied by the publisher and affect the reader's interpretations and experience of reading the text in various ways. Genette asserted that the paratextual features serve as a threshold between the narrative and the world of the reader. For example, the endpapers of a picturebook have been described as the curtains through which a story is revealed and closed (Sipe & McGuire, 2006).

In the *ML* picturebook, the peritextual features consist of the traditional front and back covers, the title page, additional frontmatter and backmatter such as Library of Congress information, dedications, jacket blurbs, and endpapers. Epitextual elements are featured on the Moonbot Studios website and include trailers and advertisements for the different instantiations of the *ML* narrative. Accessing many of these epitextual elements requires a digital device with a connection to the Internet.

In examining the paratextual features of the app, it may be more useful to expand the discussion past the more widely accepted constructs of epitext and peritext and utilize the framework of centrifugal and centripetal vectors put forth by McCracken (2013) in her examination of various Kindle and iPad digital texts. Centrifugal vectors "draw readers outside the text proper" (p. 105). In the case of the app, paratextual elements include hyperlinks to advertisements for the film, the Moonbot Studios website, and additional

ML-themed products, all of which are accessible via the app's home screen. Centripetal vectors, in contrast, "modify readers' experience on inward vectors" (p. 106), including users' ability to modify the displayed language of the text by toggling on or off the visual display of the printed text, and the voiced narration and background music provided in the app. In comparison with the printed book and film, the app affords readers a level of customization through the peritext that operates differently from the printed and film instantiations.

When purchasing a DVD or Blu-ray production of the film, the reader often has access to peritextual elements on the DVD case that imitate a book cover, endpapers, and title pages of a picturebook. However, when the film is not available in hard copy and is only available as a download, the peritext is limited to the opening and closing credits and the production company's introductory sequences included in the film.

Often, peritextual features contribute to the overall feel and aesthetic coherence of a film. For instance, during the opening credits, the title of the film is presented on a book cover that resembles the *ML* picturebook. This book opens, and the reader is drawn into the story as previously discussed. In the closing credits, text is presented on simulated book pages rather than in the scrolling format traditionally used in film. This presentation maintains the storybook aesthetic established during the first scene of the film.

The AR app offers similar peritextual elements to the picturebook. On the digital app interface, access to instructions on how to use the app, a link for purchasing the book, and an advertisement for the IMAG-N-O-TRON—trademarked software application is added.

Transmedial Features Across Openings

Transmedial features also work across individual openings and connect one element of the narrative sequence with another. Although narrative is presented in a temporal sequence, affordances of digital technologies allow the reader to disrupt this sequence and select particular scenes from the narrative in different orders, much like jumping around through the pages of a picturebook. Readers need to learn how to navigate digitally rendered narratives in order to take advantage of the affordances of these different platforms in much the same way young readers need to learn to turn the pages of a picturebook to access the story.

NAVIGATIONAL ELEMENTS

Navigating picturebooks and apps requires readers to utilize different strategies and resources across these platforms. The page turn associated with picturebooks and the swipe

used on tablets may be similar physical motions, but the results are different. A swipe may set animated features in motion or move the reader forward in the narrative, whereas a page turn always simply turns the page. Moving across double-page spreads in a picturebook, watching as a scene changes in a film, and swiping the tablet to present a new tableau engages readers in different ways.

Navigational elements of the app are offered as visual elements and built into each tableau display. Primarily, these include the dog-eared hotspots that have become ubiquitous among digital book apps. These visual features invite the reader to drag a finger across the screen, eliciting the movement and sound reminiscent of the turning of a physical page in a printed book. In addition, each tableau can be advanced with a simple tap on the right side of the screen at the conclusion of the voiced narration. A slide-out menu option brings up a thumbnail display of all 27 tableaux for instant navigation to a particular scene in the story. This navigational element allows readers to scan the digital narrative much like a reader flipping through a picturebook.

Navigational elements are not built into the film instantiation of *ML* in the same way as the app. With the exception of control devices, such as a television remote or the pop-up menus on a DVD or Blu-ray recording, navigational elements are not a characteristic of film; instead, they are an aspect of the technology or digital device. In most instances, viewers initiate a film by pressing Play and watch the narrative unfold.

In addition to having to physically hold the tablet over the printed picturebook, the AR app includes translucent icons that appear at times to indicate how to navigate a particular page or access the features in the app. In order to navigate to a new page, the reader has to turn the page of the picturebook and hold the AR app over the book again. There is an icon for returning to the home page and another for turning the narration on and off.

TRANSITIONS

The transition from one double-page spread to another in a picturebook helps develop tension and suspense as the reader works through the sequential presentation of the narrative events. Turning the page may be considered a trivial effort (Aarseth, 1997) but one that is essential to the presentation and interpretation of a narrative rendered as a picturebook. The page turn creates a sense of drama or tension as elements of the narrative unfold and readers are delighted as new openings are revealed.

Transitions between tableaux in the *ML* app take various forms, ranging from entire scene changes to zooming and

panning effects within a particular scene. Transitions are typically accompanied not only by page-turn animations and associated sounds but also animations particular to each tableau, which serves to set the scene before becoming static images in the app. At the end of each transitional animation, visual cues such as flashing objects in a scene draw the users to tap on interactive hotspots interspersed throughout each tableau to further explore the hidden offerings and content of the app.

Unlike picturebooks and apps, viewers of film have little control over the transitions of the narrative sequence. Scenes flow from one to the next through a series of transitions or film edits. The most common edit in a film is the cut, when one frame disappears and is immediately followed by another. This type of transition is so embedded in film as a medium that viewers are virtually unaware that it is happening, and it allows editors to use other edits to punctuate important aspects of the narrative. A fade to black, for instance, is often used to signal the passage of time or to indicate the end of an important portion of the film. This edit is used in *ML* to indicate the completion of the rising action in the narrative (Morris's arrival at the magical library) and to show that hours have passed between his arrival and the following morning. The choice of edit imposes varying levels of tension and suspense on the reader that the picturebook and picturebook app do not, given the affordances of those platforms.

Discussion

Although Schwebs (2014) stated that the app and picturebook instantiations are adaptations of the film, and the release of the film predates the release of the app and picturebook, we need to problematize the notion that these instantiations are adaptations taken from a single original rendering, in this case, the film. In fact, a sticker provided on the picturebook states, "the story that inspired the Academy Award®-winning short film." The order of publication is not as relevant as considering the affordances and limitations of the various instantiations.

We agree with Hutcheon's (2006) theories and description of adaptation as transpositions of a single work. The four instantiations discussed here should be seen as re-creations rather than reproductions, and each instantiation brings the story to life in different ways. The technological dimensions of the four instantiations add to the narrative dimensions in significant ways, serving as both platform and host for content and narrative structures.

Each instantiation of the *ML* narrative draws on available modes and designs that offer different affordances and limita-

tions affecting the way readers experience the story. However, the differences are more closely associated with how the narrative is presented, or its fabula, than with the actual events portrayed in the narrative, or its *syuzhet* (Pantaleo, 2004). The underlying narrative remains somewhat stable, while the re-presentations and interactive dimensions of the telling differ across modalities, technologies, and platforms. This begs the question, How many narratives are there across these instantiations? We have to question whether there is one narrative with four different experiences, or are there four separate, independent narratives? If a narrative is not an entity until it has been told, then there are four different stories here. However, if these are conceptualized as instantiations of a single narrative that exists separately from its telling, there is only one.

If we consider the possibility of a single narrative (i.e., the story of Morris Lessmore) as being re-presented across multiple media instantiations, we might conceptualize the story as only being fully revealed through a reader's experience across all platforms. This way of making meaning across media, which Jenkins et al. (2006) referred to as transmedia navigation, can result in expanded understandings of a story's content that might not be possible through the experience of a single platform or instantiation. Alternative meanings might even emerge based on the order in which readers experience the different instantiations. Thus, the question of whether we consider these instantiations as autonomous works or a unified narrative across multiple platforms leads to different implications for the reader's experience.

Based on our preliminary examination of these transmedial features, we suggest several areas for consideration for those interested in literacy development in both formal and informal learning contexts. First, as children's picturebook apps and associated digital media become increasingly available, we propose that new frameworks for analysis and evaluation of quality be developed that reflect the affordances and limitations of the emerging digital media platforms on which these stories are being presented. Our current work involves the development and refinement of one such framework based on a broad analysis of a range of narrative instantiations.

Second, as the content of children's narratives becomes increasingly spread across media platforms, we suggest that parents, librarians, and educators should shift from examining the qualities of individual texts to examining how content might be experienced across multiple instantiations and platforms. Examining readers' experiences of the multiple instantiations of a single narrative across different platforms might reveal new avenues for making meaning.

Teachers need to familiarize themselves with various technologies and platforms for re-presenting children's narratives if they are going to support students' transactions with these complex texts.

Finally, as emerging digital platforms are changing the ways users interact with children's narratives, we recommend that educators and researchers begin to consider not only the intended use of these published products but also the emerging uses of such technologies as readers take them up as a part of their own literacy practices and everyday experiences. Such understandings can be developed only through examinations of actual readers as they interact with these forms of new media, and research in this area can inform the ways these technologies are utilized in formal and informal literacy experiences.

In developing understandings about how readers make meaning from and across different platforms, the question becomes, How can teachers leverage this knowledge in

their classroom instruction? Teachers need to familiarize themselves with various technologies and platforms for re-presenting children's narratives if they are going to support students' transactions with these complex texts. We can only teach that which we know well ourselves, and this is an important consideration for teachers in the digital age. ■

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