Digital Readers: The Next Chapter in E-Book Reading and Response

Lotta C. Larson

E-books have the potential to unveil an array of new teaching and learning possibilities as traditional and new literacy skills are integrated in meaningful ways.

A visit to a local bookstore or online book vendor will undoubtedly confirm the recent bombardment of digital readers, also known as digital reading devices or e-book readers. A digital reading device stores hundreds of books, newspapers, magazines, and blogs; allows for quick look-up of information through its built-in dictionary, Wikipedia, or internal search capabilities; and offers customizable settings to suit each unique reader. Although the Amazon Kindle, Sony Reader, and Barnes & Noble Nook are common, other, lesser-known products are also available, each offering varying features and capabilities (see Table 1).

As an avid Kindle reader and teacher educator, I am intrigued by the potential of using digital readers in classroom settings. Recent studies of e-book reading and response behaviors suggested that e-book reading may support comprehension and strengthen both aesthetic and efferent reader response (Larson, 2008, 2009). This article recognizes the continued evolution of e-book technologies by taking a closer look at children’s involvement with and response to digital readers. In particular, I will explain the basic features of digital reading devices and discuss how they can advance e-book readership among primary students by offering new avenues for accessing and interacting with a wide array of texts.

Digital Reading and Responding

In today’s classrooms, reading instruction, along with the broader notion of literacy instruction, is undergoing tremendous transformations as new technologies demand new literacy skills (Leu, Kinzer, Coiro, & Cammack, 2004). The International Reading Association (IRA; 2009) emphasized the importance of integrating information and communication technologies (ICTs) into current literacy programs. A first step toward integrating new literacies into existing reading programs often involves redefining the notion of what constitutes text, as teachers seek alternative text sources including digital texts and electronic books (Booth, 2006; Kucer, 2005).

Traditionally, text was seen as “a passage of print or a slice of speech, or an image” (Lankshear, 1997, p. 45). Thus, texts were perceived as written-down messages and symbols in the forms of books, magazines, and newspapers. Today, texts are professed as much more than written words or images.

Bearne (2005) argued that most children are immersed in multimodal experiences and, therefore, have a keen awareness of the possibility of combining modes and media to create a message. This

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Digital Readers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Device/brand</strong></td>
<td><strong>Manufacturer</strong></td>
</tr>
<tr>
<td>Kindle</td>
<td>Amazon</td>
</tr>
<tr>
<td>Nook</td>
<td>Barnes &amp; Noble</td>
</tr>
<tr>
<td>Sony Reader</td>
<td>Sony</td>
</tr>
<tr>
<td>Cybook OPUS</td>
<td>Bookeen</td>
</tr>
<tr>
<td>iLiad</td>
<td>IREX</td>
</tr>
<tr>
<td>iPad</td>
<td>Apple</td>
</tr>
</tbody>
</table>
be discussed later in this article, a plethora of tools and features allow the reader to physically interact with and manipulate the text, making the reading experience interactive and engaging.

Rooted in cognitive constructivist theory, the New Literacies perspective (Leu et al., 2004) acknowledges that new literacies are persistently evolving and challenges teachers to transform reading instruction in response to emerging ICTs. Traditional definitions of reading and writing are insufficient in today’s world as today’s students encounter and interact with new digital literacies, including digital texts such as e-books (IRA, 2009). This study builds upon past research of transactional reader response theory, while recognizing the need for future studies as textual transformations continually occur with the arrival of new literacies and emerging ICTs.

Methodology, Participants, and Data Collection

The site of this study is located in the Midwestern United States in a K–12 district serving approximately 6,000 students. Mrs. Miles, the classroom teacher, is an avid proponent of technology integration who encouraged her 17 second graders to read online texts, blog about their reading experiences, and engage in online literature discussions.

With only one classroom computer, Mrs. Miles relied heavily on a ceiling-mounted LCD projector to display the computer screen during whole-class instruction. Through shared literacy experiences, her students frequently read and responded to digital texts. During weekly visits to the school’s computer lab, the second graders practiced independent computer skills or engaged in Internet explorations. In addition, Mrs. Miles encouraged her students to use the class blog to share their opinions about books that they read in class.

Prior to this study, Mrs. Miles had heard about digital readers but had no personal experience with this technology. After briefly exploring an Amazon

**PAUSE AND PONDER**

- How do digital readers support reader response, vocabulary development, and reading comprehension?
- How can teachers use the insights gained from students’ response notes to plan for future reading instruction?
- Picture your own classroom. How could digital readers meet the unique needs of each of your students? Which student(s) would benefit the most from using e-book readers?
kindle, Mrs. Miles visited Amazon.com to select and download books that were of interest to and at appropriate reading levels for her second graders.

With access to only twoKindles, Mrs. Miles explained to her students that they would take turns using the digital readers. With the help of a visual presenter and LCD projector, she read aloud and modeled the basic functions of the Kindle. She explained how to turn it on and off, insert notes, change the font size, and use the dictionary. Students were told that they were welcome to use any of these functions but not required to do so. She also identified the following two girls, Amy and Winnie (pseudonyms), of diverse reading levels and ethnic/linguistic backgrounds, on which this small case study would focus:

- Amy was a 7-year-old Caucasian girl who, in October, read at a beginning second-grade level and expressed strong verbal and written communication skills. She viewed herself as a “good, but not very fast reader.” She explained that she loves books about animals. Her teacher described her as outgoing, funny, and social.

- Winnie was an 8-year-old Asian girl who is fluent in Chinese and speaks English as a second language. At the beginning of second grade, Winnie read independently at a fifth-grade level and was described by her teacher as quiet, calm, and very serious. Winnie considered herself a “very good reader” and her favorite books included the Harry Potter series.

Mrs. Miles suggested that both girls would read *Friendship According to Humphrey* by Betty G. Birney (2006). Recommended for grades 2–4, this book is written from the perspective of a classroom pet hamster who resides in Mrs. Brisbane’s classroom. For three weeks, I observed Amy and Winnie read and respond to the Kindle edition of *Friendship According to Humphrey* for 40 minutes daily. While reading, Amy and Winnie physically interacted with the text by using tools and features unique to the Kindle. For example, the girls adjusted the font size, listened to parts of the story by activating the text-to-speech feature, highlighted key passages or vocabulary, used the built-in dictionary, and searched for keywords or phrases within the book.

Using the keyboard included with the Kindle, the girls also added annotations, or notes, to the text (much like writing notes in the margin of a book) in response to what they were reading. Both participants had access to their own Kindle on which their notes and markups were saved each day.

Questions guiding this study included the following:

- How can wireless digital reading devices support primary readers in their reading processes as they read and respond to digital texts?
- How do wireless digital reading devices advance e-book readership as they offer new avenues for accessing and manipulating texts?

Data collection and analysis were ongoing and simultaneous. This study used qualitative case study techniques (Stake, 2000). Using categorical aggregation, multiple sources of data were examined in search of emerging categories of information and meanings. Data sources include my field notes and interviews with participating students, their classroom teacher, and their respective parents. Students’ digital notes, or markups, were also collected for careful examination and analysis for emerging reader response themes and patterns.

**Findings**

Findings suggested that using digital reading devices with second-grade students promotes new literacies practices and extends connections between readers and text as engagement with and manipulation of text is made possible through electronic tools and features. The Kindle tools invited Amy and Winnie to engage with the text and put the reader in greater control than when reading printed text.

**Literature Response**

The digital note tool offered insights into the reader’s meaning-making process as the text unfolded and served as a conduit to ongoing response writing. While using the note tool, the second graders seemed unconcerned with proper writing conventions and mechanics. Rather, they focused on transferring their thoughts into written annotations as quickly and effectively as possible, resulting in extensive use of invented spelling. Overall, the notes reflected a sense of spontaneity and impulsiveness as they expressed the voice and mood of the individual reader while revealing an understanding of the story or expressing a desire for additional information or clarification of...
of these response categories, including authentic examples produced by Amy and Winnie.

Response Category 1: Understanding of the Story. These responses indicate the reader’s current understanding of the characters and plot through personal commentary or retelling of parts of the story (Hancock, 1993). Ten out of Winnie’s 33 notes (30%) fit into this category. As a character in the book waved goodbye to his classroom pet, Og the Frog, and shouted, “Catch you later, Oggy,” Winnie inserted a note, “see you later oggy poggy.” When another character, Gail, affectionately grabbed a classmate, Heidi, by the hand, Winnie inserted a note stating, “i think heidi and gail are friends now.”

The interpretation of the budding friendship among characters was correct and confirmed by Winnie’s note. Eighteen of Amy’s 43 notes (42%) expressed understanding of the story primarily by retelling, or restating, facts and events as the plot unfolds. Examples included, “she has a stepsister,” “yay a field trip,” “she has a baby,” and “he has a notebook.” Amy’s understanding of the story was also confirmed by her response to what Humphrey, the hamster, calls “giant circles of lace.” In a note, Amy candidly explained, “it’s called snow.”

Response Category 2: Personal Meaning Making. In these reader-centered responses the readers expressed thoughts and feelings about the reading experience as they relate to plot and characters (Wollman-Bonilla & Werchadlo, 1995). As indicated in Table 2, Winnie responded to the story through personal meaning making 55% of the time. Comments such as “i don’t like crickets either,” “i want to be a layer [lawyer] when in [I] grow up,” and

Figure 1
Amy Inserting a Digital Note

Table 2
Types of Response Notes

<table>
<thead>
<tr>
<th>Student</th>
<th>1. Understanding of story (retelling; personal commentary)</th>
<th>2. Personal meaning making (text-to-self connection; character identification)</th>
<th>3. Questioning (desire for more information; lack of understanding)</th>
<th>4. Answering (response to questions in the text)</th>
<th>5. Text features/literary evaluation</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amy</td>
<td>18 (42%)</td>
<td>6 (14%)</td>
<td>11 (25%)</td>
<td>0 (0%)</td>
<td>8 (19%)</td>
<td>43 (100%)</td>
</tr>
<tr>
<td>Winnie</td>
<td>10 (30%)</td>
<td>18 (55%)</td>
<td>1 (3%)</td>
<td>3 (9%)</td>
<td>1 (3%)</td>
<td>33 (100%)</td>
</tr>
</tbody>
</table>
“I would like to go outside too” illustrated Winnie’s ability to relate to the story and its characters.

Winnie felt empathetic toward Humphrey, the hamster, as he fought with Og the frog: “don’t worry Humphrey, i have a terrible life with my sister.” She also recognized the advantages of being a classroom pet: “i would like someone to clean my room for me. Humphrey is so lucky.” Only 14% of Amy’s notes expressed personal meaning-making. Like Winnie, she related to events and characters in the book: “i ac-shayli [actually] like bugs a lot,” “i would be scared too,” and “i would like to be a teacher.” In one note, she also showed empathy toward the hamster: “i am sad that Humphrey is ignored.”

Response Category 3: Questioning. Twenty-five percent (11) of Amy’s notes consisted of questions relating to the book: “what does that mean,” and “why do they keep doing that,” suggesting some confusion about the unfolding plot. Other questions, such as, “i wonder what garth’s house looked like,” and “i wonder what she thinks about Humphrey,” revealed a longing for deeper understanding beyond what was offered through literal interpretation of the text.

On the other hand, Winnie’s notes contained only one question indicating confusion about the text. As Principal Morales chuckles, “Muy inteligente,” Winnie wrote, “is that Spanish.” Interestingly, while Winnie does not have personal experience with Spanish, she is a fluent speaker of both Chinese and English and clearly recognized the presence of a foreign language.

Response Category 4: Answering. Although Amy asked multiple questions during her reading experience, Winnie provided answers to questions asked in the book by various characters. For example, when Mrs. Brisbane asked her class, “What do you think, class? Do some people think frogs are odd?” Winnie inserted a note answering, “i do.” In response to, “Tell me your friends and I’ll tell you who you are, (Assyrian proverb),” Winnie listed her friends “Jazmyn Ashton Lola Xander Brady.” Such literal conversations with the author indicated a strong involvement with the text.

Response Category 5: Text Features/Literary Evaluation. Hancock (1993) explained that even young readers may indicate praise or criticism of the author, writing style, and literary genre. At the end of the book, Winnie inserted a note stating, “that was a great book. i thought it was fantastic and bumbastic.” Amy commented on the author’s writing style through comments like, “that is a lot of names.” In response to the sentence “According to Mandy, my beautiful golden fur was actually brown,...” Amy wrote, “that’s how the book starts,” clearly relating to the book’s title Friendship According to Humphrey.

On numerous occasions, Amy also wondered about the author’s use of conventions or specific text features. She noticed a dash used as a sentence break (“what does that mean”), lines used for emphasis (“i wonder why they put those lines there”), parentheses (“what are those lines for”) and the use of an apostrophe in “Yes, ma’am” (“that is weird [weird]”). She also paid close attention to the division of chapters, commenting as she entered each new chapter (“i’m on chapter seven; i’m on the last chapter”).

Previous studies in which primary students used literature response journals suggested that individual readers respond distinctively to the literature, often favoring a personal response style (Dekker, 1991; Wollman-Bonilla & Werchadlo, 1995). In this study, the digital notes provided a unique glimpse into the minds of individual readers. For Amy, the challenging text sparked her to ask questions, retell her understanding of plot and characters, and wonder about the author’s use of conventions and writing style. Winnie, on the other hand, transacted with the text at a deeper level by conversing with the author and engaging in personal meaning-making as the plot unfolded.

New Literacies at Work
Analysis of all data sources indicated that the participants used new literacy skills and strategies to envision and access the potential of the digital reading device. To support their comprehension processes, the second graders consistently did the following:

- Adjusted the font size
- Accessed the built-in dictionary to look up meanings of words and to review the phonetic spelling of words to help “sound out” text
- Activated the text-to-speech feature to listen to words that they found difficult or to reread text passages

Font Size. The Kindle provides a choice of six different font sizes. During this study, Amy generally kept her font at a larger size than Winnie. In an interview,
she explained that it helped her “read faster when the
text was large.” The varying text size did create some
challenges on days when the girls decided to partner
read, as the visual layout of their Kindle “pages” dif-
fered. The girls quickly learned to synchronize their
settings when reading together.

**Built-In Dictionary.** The Kindle features a readily ac-
cessible built-in dictionary (*The New Oxford American
Dictionary*) which was accessed during this study for
two purposes: 1) to look up the meaning of words,
and 2) to help decode words. Winnie accessed the
dictionary periodically while reading independently
to look up the meaning of words. When encounter-
ing “Muy inteligente,” she turned to Amy and stated, “I
tried the dictionary and it didn’t work.” (Subsequently,
she inserted a note asking, “is that spanish.”)

Amy primarily used the dictionary to help her
decode words. For example, when reading out loud,
she struggled with the word *accomplishment*. After
accessing the dictionary, she read the word out loud,
even pointing out that the dictionary “chunks the words for
you so you can read them.” For Amy, the dictionary
seemed particularly helpful with multisyllabic words
such as *audience*, *magician*, *prosperity*, *produced*, and *cabinet*. The dictionary did not appear as helpful when
she encountered short, unfamiliar words such as *eerie*.
In this instance, after attempting to use the dictionary,
she simple stated, “I still can’t tell what that word is.”

**Text-to-Speech Feature.** The Kindle’s text-to-
speech feature allows readers to listen to the text in a
somewhat robotic male or female voice. In this study,
Winnie and Amy were both aware of this feature and
were allowed to use it at any time. When initially
introduced to the text-to-speech function, the girls
listened to the story for approximately 10 minutes be-
fore removing their headphones, requesting to read
on their own.

In an ensuing interview, the girls explained that
they did not like to listen to the “Kindle’s voice.”
Winnie elaborated, “he just didn’t sound the way the
story reads in my head.” During subsequent sessions,
Amy occasionally accessed text-to-speech to help
her decode individual words or navigate through dif-
ficult text passages.

**Sociophysical Settings**

Rosenblatt (1978) considered nonlinguistic factors to
be of great influence on the reading experience. This
includes the sociophysical settings, or the conditions
or environment in which the actual reading takes
place. During previous studies involving e-book read-
ing on laptop or desktop computers, I have found that
the reading venue, or physical environment, context,
and even reading position, largely affects the overall
reading experience (Larson, 2007).

For example, when reading on laptops or desktop
computers, readers often express physical discom-
fort or say they miss the feel of “snuggling up” with
a real book. In this study, no similar sentiments were
expressed, as the second graders used digital read-
ing devices similar in size and shape to traditional
books. Like most readers, the girls simply positioned
themselves on the floor in a quiet corner of the li-
brary (see Figure 2). In the opinions of Winnie and
Amy, the convenience and “coolness factor” gained
from reading on a Kindle outweighed any lost senti-
ments of reading a traditional text.

Interviews with Amy and Winnie, their parents,
and the classroom teacher revealed notable changes
in reading dispositions and personas. For example,
prior to participation in this study, Amy expressed
that she did not like to read, especially chapter books.
According to her mother, reading on the Kindle made
Amy excited about reading and the experience “gave
her confidence in herself.”

Similarly, Winnie, an avid reader, explained that
she preferred reading on the Kindle “because you can
take notes in it, but you can’t take notes in a regular
book.” After reviewing Winnie’s notes and markups,
Mrs. Miles reported that the notes disclosed “a whole
new side of Winnie.” Winnie’s notes often expressed humor and a sense of whimsy, which seemed to contradict her otherwise serious and shy personality.

Implications for the Classroom

Hancock (2008) explained that technology offers “a new vision and dimension of reader response” as teachers think of ways to merge new literacies and traditional literature in the classroom (p. 108). In the cases of Winnie and Amy, the digital readers clearly provided new opportunities and extended possibilities for individual engagement with and interpretation of the text. The girls’ voices blended with the voice of the author as they engaged in an active, constructive experience where personal meaning became the collaborative product of reader and text during the act of reading.

By carefully examining the children’s responses and their use of Kindle tools, Mrs. Miles gained valuable insights into each child’s reading behaviors and comprehension skills. When the response notes indicated that Amy struggled to understand the emerging plot or specific text features, Mrs. Miles was able to answer her lingering questions and support her individual needs as a reader. Amy’s use of Kindle tools supported her ability to independently decode unfamiliar or multisyllabic words with the help of the built-in dictionary, along with a larger font size.

Winnie’s response notes indicated deep transactions with the text, while unveiling a previously disguised sense of humor and outgoing personality. Thus, Mrs. Miles broadened Winnie’s selection of future reading materials and encouraged her to express her sense of humor and socially interact with her peers. The digital readers proved to be a valuable tool that will be useful as Mrs. Miles continues her quest to differentiate reading instruction and provide her students with the individual support they deserve.

E-books in general, and digital readers in particular, have the potential to unveil an array of new teaching and learning possibilities as traditional and new literacy skills are integrated in meaningful ways. In today’s world of increased accountability and strong focus on individualized student support systems, digital reading devices may provide much needed support to both students and teachers. The lack of research published on this topic hinders the efforts made by educators and administrators who wish to integrate digital texts into their current curricula or school libraries.

Although a small case study, this study advances past research on e-book reading and response and clearly shows that there is more to digital readers than just their portability and incredible storage capacity. Digital readers show promise in supporting struggling readers through multiple tools and features, including manipulation of font size, text-to-speech options, expandable dictionary, and note capabilities.

Take ACTION!

1. To get started, you should communicate closely with school administrators and technology staff to develop common literacy and technology goals. Discuss funding options for acquiring digital readers and subsequent e-books (i.e., grants, PTA/PTO support, or fundraisers). You must also decide how to effectively use the digital readers during whole-class instruction, literature circles, and individual reading experiences. If the access to digital readers is limited, download multiple book titles on each device, which can be shared by several students. Use a visual presenter and projector to initially introduce the e-book reader’s many tools and features. During ensuing lessons, students may further use this technology to share digital notes or favorite text passages with their classmates.

2. Craft a schedule that allows each student frequent blocks of uninterrupted reading time. Establish class expectations for note taking and markings in the e-books, particularly if multiple students share a digital reader. Decide if students have the right to access one another’s books and if they can read one another’s notes. Also, consider if multiple students may add notes in the same book—possibly responding to one another’s notes and comments.

3. As students read and respond to e-books, it is important that teachers carefully observe their reading behaviors. Note how students access and use e-book tools and features (e.g., font size, dictionary, text-to-speech). Review students’ notes and markups on a regular basis. Carefully consider types of notes written, as well as strategies for nudging students toward a broader repertoire of response options. Encourage students to share how the digital readers support their individual reading processes.
The rapidly changing nature of e-books and digital reading devices demands a progressive research agenda that examines the use of new technologies in authentic school settings. Teachers must explore the potential of digital readers, as one device can potentially take the place of hundreds of printed books and allow for unique transactions between the reader and the text. Although print books are the world’s oldest means of communication and the Internet one of the newest, digital readers merge the two media in innovative and interesting ways as they integrate “the portability of books with the search and storage capabilities of personal computers” (Goldsburgh, 2009, p. 11).

Although research on the use of this medium is in its infancy, the results from this study appear promising in using digital reading devices as a means to foster literacy development and offering a glimpse into the unique minds of individual readers.

References


Literature Cited

Larson teaches at Kansas State University, Manhattan, USA; e-mail ell4444@ksu.edu.