

Connected Reading: A Framework for Understanding How Adolescents Encounter, Evaluate, and Engage With Texts in the Digital Age

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ABSTRACT

Since the emergence of the World Wide Web and e-reading devices in the late 1990s and early 2000s, reading research has focused on issues of website credibility, search and navigation strategies, and the ability to comprehend text on-screen as compared with in print. What has been missing, however, are data about the specific texts that adolescents are reading in these digital spaces, what devices they prefer, and the strategies that they employ. Drawing from survey data ($N = 804$) and interviews ($n = 23$) with participants in grades 7-12 from 12 suburban, urban, and rural schools across the United States, the authors sought to explore what, where, and how adolescents read digitally. The authors propose a new framework of connected reading, a model of print and digital reading comprehension that conceptualizes readers' interactions with digital texts through encountering (the ways in which readers seek or receive digital texts), evaluating (the ways in which readers make judgments about the usefulness of digital texts), and engaging (the ways in which readers interact with and share digital texts). In light of the findings, the authors argue that it is imperative to reframe discussions about how adolescents are taught to comprehend and interact with a variety of digital texts (e.g., webpages, e-books, multimedia, social media).

Statement of the Problem

By definition, the internet is a network, and as such, it affords textual features that print does not. The development of hypertext, or screen-based texts that contain hyperlinks to other digital texts, has impacted both authors and readers. Authors can link content across time and space. At the same time, hyperlinks demand readers' participation in the creation of a text as they choose to click on specific words, images, videos, or other media. Texts, then, are multimodal, and according to the International Literacy Association (n.d.), multimodal text "incorporates various modes (language, images, sounds) and media to communicate or teach information" (M section, para. 16). Readers can make choices about which links to follow, and they can also gain competence in reading multimodal texts. Technologies, such as computers, tablets, and mobile handheld devices, have changed the landscape of reading, raising questions about the nature of texts, on what devices readers access those texts, and how readers engage with them.

According to studies conducted by the Pew Internet and American Life Project, reading occurs in a variety of ways. Pew Research Center (2019) reported that in 2014, 97% of youths ages 18–29 used the internet on a regular basis, and as of 2018, 28% of users in that same demographic relied on smartphones exclusively for internet access at home. Additionally,

over the last five years, the Pew Research Center documented that most people still read in print, but 50% of adults in 2014 owned a tablet or dedicated e-reader (Zickuhr & Rainie, 2014), and access to devices has only increased over time. Reading habits for all ages of readers are undoubtedly mediated by digital technology in today's world, yet it is clear that reading is both a print and digital phenomenon.

A long tradition of reading research into print-based practices has demonstrated what readers do and how novices are taught to become experts (e.g., Beers & Probst, 2012; Fisher & Frey, 2013; Harvey & Goudvis, 2017; Keene & Zimmermann, 2007). Less is known about reading digital texts. Although the Pew Research Center (2019) provided insight into the rapid rise in device ownership among adults, little is known about how readers engage with digital texts. Research conducted into the new literacies required to read online has documented numerous challenges associated with reading on the internet:

- The need to verify website credibility and usefulness by engaging more fully in comprehensive search practices (Coiro, Coscarelli, Maykel, & Forzani, 2015; Leu et al., 2015)
- Readers' ability to manage distractions in online environments (Fox, Rosen, & Crawford, 2009; Hollis & Was, 2016; Sung & Mayer, 2013)
- The importance of overcoming shallow practices to engage in deep, sustained reading (Wolf, 2018; Wolf & Barzillai, 2009)

However, most of these researchers took narrow views of reading online that do not explore the contextualized practices of readers. Furthermore, few studies have focused specifically on teen readers, a population that admittedly uses devices at an early age and for many purposes. Because today's readers encounter all types of digital texts and devices on a daily basis (e.g., mobile devices, e-readers, websites), educators should bear in mind the role of digital texts in adolescents' lives to better instruct them to become more strategic readers.

In the present study, we sought to build on the work of new literacies researchers by talking to teens about their reading practices both inside and outside of school. Three research questions guided this exploration:

1. What kinds of texts do adolescents read?
2. Where (on what devices) do adolescents read those texts?
3. How do adolescents engage with those texts?

Although initially these questions assumed that participants would share their digital reading practices as the study unfolded, it became clear that adolescents live in a

both/and world. They read print and digital texts, and these texts vary in form: They might be linear, hyperlinked, multimodal, and/or conversational (for a discussion of text types, see Dalton & Proctor, 2008). Therefore, in this study, we sought to fill a gap in the literature by naming practices that cross the print/digital divide.

Theoretical Frame

Reading in the digital age is both print and digital, and the framing for this study supports this stance. Overlaying the long-standing reader-response theory with the contemporary connected learning framework allowed for a view of readers as active participants in their reading lives.

In her foundational work, Rosenblatt (1978) argued that a reader's interaction with a text produces a poem. This resulting poem is context dependent rather than text dependent. As Rosenblatt stated, "a specific reader and a specific text at a specific time and place: change any of these, and there occurs a different circuit, a different event—a different poem" (p. 14). This perspective does not, however, suggest that every response is an accurate one. Rosenblatt believed that "the reader's creation of a poem out of a text must be an active, self-ordering and self-corrected process" (p. 11). Reader-response theory positions readers as active participants with the power to shape the reading transaction, not simply to be controlled by the text.

Rosenblatt's (1978) theory continues to have import in a world where readers, quite literally, craft unique transactions through the links they choose to follow in digital spaces. No two reading transactions are the same, and in fact, no two texts are the same. It is important, then, to consider the practice of readers in digital spaces. The connected learning framework (Ito et al., 2013) informed our stance in this study on the production and distribution of knowledge and ideas, especially those related to what adolescents read in this digital world. According to Ito et al. (2013), connected learning involves the pursuit of interests or passions within a network of supportive mentors, most often peers. As stated by Ito et al.,

connected learning looks to digital media and communications to: 1) offer engaging formats for interactivity and self-expression, 2) lower barriers to access for knowledge and information, 3) provide social supports for learning through social media and online affinity groups, and 4) link a broader and more diverse range of culture, knowledge, and expertise to educational opportunity. (p. 6)

Connected learners are able to link their interests and learning to academic achievement, career possibilities, or civic engagement.

Given that reading is a necessary component of learning on the internet, connected learners could, and

perhaps should, also be readers who engage in a network of other readers. In essence, connected learners would be well served to become connected readers. Adolescents have access to an enormous amount of information via devices; all of this information could be consumed, although discernment is necessary, and therefore readers must be active, following a “self-ordering and self-corrected process” (Rosenblatt, 1978, p. 11) as they engage with digital media and communicate with others. Like reader-response theory does for the reader, connected learning places the learner at the center. Taken together, these theories suggest that any model of reading in the digital age should consider the reader an important part of the reading transaction. Just as important, readers are part of a broader community—or, more accurately, communities—of readers. They identify communities based on interests, they receive information from their peers, and they share texts with others. Their reading is connected.

Current public discourse tends to focus agency within the technology itself and its ability to distract readers (see, e.g., Carr, 2008). Ultimately, the conversation about how hypertexts and digital devices mediate any one reader’s experience with a website or e-book may be (and likely are) more nuanced than the popular discourse that focuses on how technology acts upon readers. The theoretical frame of the present study—connected learning and Rosenblatt’s (1978) transactional theory of reading—places the reader at the center of a reading process. Inspired by these two theories of connected learning and reader response, and informed by our data, we chose to name the theory we developed in the present study connected reading. Although we acknowledge that there are arguments to be made about the effects of cultural, political, economic, and other sociological factors that influence the reading options with which we are presented, we contend that readers, especially those with unfiltered access to the Internet, largely have choice in the texts they consume, specifically the paths that they follow, and that they are active participants in the transaction of reading. Although devices mediate reading, and these devices are designed for distraction in many ways (Alter, 2018; Harris, 2017), digital technology alone does not control the poem that is created. Readers do.

Literature Review

Many researchers have focused on comparisons between print and digital reading (see, e.g., Fesel, Segers, & Verhoeven, 2018; Hahnel, Goldhammer, Naumann, & Kröhne, 2016; Naumann & Goldhammer, 2017; Naumann & Salmerón, 2016; Singer & Alexander, 2017). We appreciate the questions that these studies explored, yet we

question the either/or perspective that many seemed to take. Singer and Alexander (2017) explicitly called for future studies to investigate the potential benefits of reading in a combination of print and digital mediums. To move scholarship forward, it would behoove researchers to move away from thinking about reading practices as dichotomous, as either print or digital.

In the present study, we took the position that readers live in a both/and world and should be provided with opportunities to learn to navigate both print and digital texts. However, although there is a wealth of research on print reading, digital reading research is still in its infancy. Although we recognize that today’s reader is both a print and digital reader, for this literature review, we primarily narrow our focus to recent studies of digital reading to help contextualize the nuanced approach of our research questions.

Online Reading Comprehension

Readers use some of the same strategies online as they do when reading print, but they also utilize a distinct set of skills when reading online (Afflerbach & Cho, 2009; Leu et al., 2011, 2015; Leu, Kinzer, Coiro, Castek, & Henry, 2013). Leu et al.’s (2015) new literacies of online reading comprehension perspective frames digital reading as a problem-based inquiry process that requires new ways of defining important questions, locating information, evaluating information, synthesizing information, and communicating information online. Moreover, Lankshear and Knobel (2011) asserted that new literacies “provid[e] a range of new or more widely accessible resource possibilities (‘affordances’) for making meaning” (p. 56).

A significant body of research on digital reading has focused on online reading comprehension, most often by evaluating a reader’s comprehension of a researcher-selected digital text. In extensive work on digital reading and inquiry, Coiro and colleagues (e.g., Coiro, 2011; Coiro, Castek, & Guzniczak, 2011; Coiro & Dobler, 2007; Coiro, Sekeres, Castek, & Guzniczak, 2014) examined elementary and middle school students’ digital reading practices, focusing on online reading comprehension and strategy use. This work, collectively, taught us that digital reading requires complex practices that are often “unique to online reading and writing contexts” (Castek & Coiro, 2015, p. 546), including the challenges of evaluating the credibility of information located online. In summarizing her work and outlining significant findings, Coiro (2015) argued that to teach online reading comprehension in an age of ever-evolving technologies, educators should help students “think purposefully, critically, and flexibly” (p. 53). Castek and Coiro (2015) described the challenge for researchers to investigate “what [digital readers] are thinking as they click around and make decisions about what to read” (p. 546), a challenge that informed the design of the present study.

All of Coiro and colleagues' studies referenced here examined students' use of online reading comprehension strategies when completing a researcher-determined academic task. Three out of four of these studies limited students' online reading to a closed environment, restricting them to use only specific websites or pre-designed search engines (Coiro, 2011; Coiro & Dobler, 2007; Coiro et al., 2014), and all of these studies exclusively investigated academic reading. In a more naturalistic study, Coiro and colleagues (2011) allowed participants ($N = 2$) to freely navigate the open internet to answer two academic questions. Although the field has learned a great deal from Coiro et al.'s work, there is still uncharted territory. We need to learn more about how adolescents read online when they determine their own tasks, and perhaps even more important, we need to hear directly from the adolescents about the choices they make.

Contextualizing Digital Reading and Texts

Smith and Wilhelm (2002) pushed literacy research forward with their study of adolescent males that focused on both in-school and out-of-school literacies. Using fictional profiles of readers—descriptive paragraphs of fictional adolescent readers, designed to capture typical reader practices and elicit responses from participants—Smith and Wilhelm interviewed participants and found that engagement for these young male readers depended on (a) a sense of competence and control, (b) a challenge that requires an appropriate level of skill, (c) clear goals and feedback, (d) a focus on the immediate experience, and (e) social connections. Although not focused at the time on distinctly digital- or internet-based reading tasks, the inquiry examined reading in teens' own contexts, not just within the structures of school or the limited designs of a laboratory study.

The line of inquiry into students' out-of-school reading has helped the field more fully and authentically understand teens' reading lives. For example, Moje, Overby, Tysvaer, and Morris (2008) employed mixed methods, including ethnography, to explore what, how often, and why adolescents read. Focusing on urban youths from a single community, Moje et al. situated adolescents' reading within social networks, noting the importance of adolescents' reading to their social selves and identity development. Collectively, Smith and Wilhelm's (2002) and Moje et al.'s (2008) work revealed that in-depth, mixed-methods approaches, including talking to teens about their reading, can yield rich data about their authentic reading practices.

Recently, research in digital reading has embraced this tradition of investigating contextualized reading, yet published studies in this area are difficult to find, as

more attention has been paid to practitioner methods and theoretical musings. One study that began a conversation about the nature of digital reading came from Hutchison, Woodward, and Colwell (2016), who administered the Survey of Internet Use and Online Reading to fourth- and fifth-grade students ($N = 1,262$) to learn about their online activities, skills, preferences, and perceptions. This large-scale quantitative study yielded interesting results about participants' digital reading; for example, participants indicated that they would learn more from using the internet than from reading a book or watching television but that using the internet was perceived as the most difficult of the three activities. This research engaged preadolescents in reflective practice and asked for their perceptions, and the researchers called for further study on diverse populations with triangulated methods of data collection.

In short, the field has limited understanding of what, how, and where teens read in the digital era. Qualitative methods, especially, can complement quantitative findings and broaden our understandings of readers' attitudes, perceptions, and behaviors.

Method

As part of a larger study that investigated activities for teaching digital reading in adolescent classrooms (see Turner & Hicks, 2015b), we used multiple methods in this exploratory study to investigate the question, What, where, and how do adolescents read digitally? Although not initially conceptualized as a grounded theory study, the research team used tools of grounded theory (Charmaz, 2011), which ultimately allowed for the development of the theory of connected reading.

Participants

Adolescents (ages 13–18) in grades 7–12 participated in the study. Students from 12 classrooms in California, Michigan, New Jersey, and New York ($N = 804$) responded to a survey during their English language arts class. These classrooms were selected by convenience; through professional networks of the researchers, the teachers were invited to participate in the larger study that examined teaching practices. During the time the researchers were visiting the classrooms, they surveyed all students and selected 23 teens to interview from the pool of those who had provided parental consent and signed assent forms. These participants were selected purposefully based on their responses to the survey and conversations with the teachers. The researchers wanted a variety of readers, including males and females, honors and struggling students, and those who had a predilection for digital reading and those who did not.

We started by narrowing the pool to participants whose parents had consented to interviews. Based on their individual responses to the survey questions, specifically the reading that they chose to do out-of-school, we coded participants' responses into four groups: digital readers, digital nonreaders, print readers, and print nonreaders. We wanted representation from each of these buckets in the interview pool. We narrowed selection further to account for gender, racial/ethnic, and academic diversity. Ultimately, the group of interview participants comprised 14 females and nine males, including three identified Section 504 diagnoses and two identified English learner classifications; Hispanic, black, Asian, and white students were all represented in the sample.

Data Collection

To explore the digital reading practices of adolescents, we collected several types of data and triangulated analysis across these data sources. Data were collected in the spring and fall of 2013 and in the spring of 2014.

Survey

We adapted the Pew Internet and American Life Project's Teen/Parent Survey on Writing (Lenhart, Arafeh, Smith, & Rankin Macgill, 2008) to create a digital reading survey, which the teachers in our study adopted as part of their regular class instruction and deployed during class time. We piloted the survey with middle and high school students, conducting think-aloud interviews while they responded to questions. Based on the pilot, we modified questions for clarity and removed items that did not elicit relevant responses. The survey participants helped us learn about the ways in which teens used devices for reading, their attitudes toward digital reading, and their access to technology. We disaggregated the data by gender, geography, and grade range (middle and high school), but we did not find significant differences among those categories. For the purposes of the present study, the survey primarily served to guide participant selection for the interviews. Additionally, we used each individual's survey responses, in conjunction with the interview data, to develop a reader profile, or thick description.

Interviews

For our interview protocol, inspired by Smith and Wilhelm's (2002) work, we wrote five fictional profiles of readers—short, descriptive paragraphs capturing the practices and attitudes of fictional teen readers—to share with focal participants ($n = 23$) to spark conversation about their own reading habits and preferences. These profiles included avid readers, readers of multimodal texts (including games), and reluctant readers. They also included various tools for reading that are available in digital contexts. For example, Sally's profile

incorporates references to print and digital books and magazines, specific devices (Kindle and Kindle Fire), and apps (Goodreads):

Sally got her first Kindle two years ago, and she has borrowed a number of books from the public library and even more from Amazon's lending library. Periodically, she will use some of the money she earns babysitting to buy a particular book that she has enjoyed and knows she will want to read again later. As she reads her ebooks, she uses the dictionary feature to identify words that she doesn't understand. She also shares quotes from the books she reads on Goodreads.com so she and her friends can talk about the stories they enjoy. While she does do some reading on the Web, she regularly reads teen magazines that come in the mail. She is hoping to get the new Kindle Fire so she can subscribe to her magazines digitally. (Turner & Hicks, 2015b, p. 161)

The profiles offered a broad range of spaces and text types, including references to academic reading, to allow the participants to reflect on their own reading practices (for the complete text of the profiles, see Turner & Hicks, 2015b). After piloting the profiles with middle and high school students, we made minor revisions (e.g., World of Warcraft was changed to Minecraft) and clarified aspects of the profiles that confused the teens. The five final profiles were the linear digital reader, the social networker, the gamer, the print/academic reader, and the fan fiction enthusiast. Each character, however, engaged in a variety of practices to open pathways for response from the participants.

We read the profiles aloud to participants and asked them to consider three questions:

1. What, if anything, do you admire about the character in the profile?
2. What, if anything, do you not admire about the character in the profile?
3. Where do you see yourself in the characters?

We held interviews at the schools on days when we visited classrooms. Each participant responded to all five fictional profiles, with each interview lasting between 20 and 45 minutes, depending on the responses of the participant. In total, we collected and transcribed over 650 minutes of interview data that represented a variety of readers across grade levels and geographic regions.

Coding

As qualitative researchers, we approached the project with a mindset of flexibility. Although we initially intended to follow an a priori coding scheme and recast the work of Smith and Wilhelm (2002, 2006) a decade later, the data changed the plan of analysis. We began analysis with Smith and Wilhelm's codes from their work on adolescent boys' out-of-school literacies (e.g., goals/feedback, flow, competence, challenge, immediate

experience, social), but we found additional themes emerging from our data that required the development of codes specific to digital reading practices. We abandoned the a priori coding method in favor of a grounded theory approach (Charmaz, 2011) and followed an iterative process of passing through the data multiple times to develop and refine codes and categories. During a phase of open coding, we focused on the participants' words and phrases to generate labels. We then grouped these codes into larger concepts, or selective codes. For example, the initial codes reading strategies, skimming/scanning, scrolling, and annotation were consolidated under a selective code, reading the text.

At this point, we wondered about the practices that seemed to be emerging in the data, and we turned back to the literature on reading practices and processes, searching for models that fit our data. When we realized that no existing model accounted for what digital readers do, we engaged in self-study of our own reading practices, both print and digital, trying to uncover what expert digital readers do. We shared our reflections publicly through blog posts and social network interactions to put forth our biases as teachers and researchers and allow our colleagues and other readers to comment on our interpretations. For example, Hicks (second author) wrote a six-part series about his digital reading practices on his professional blog (<https://hickstro.org/>). The comments from blog readers, some of which were made on the actual site, others via social media, and still others in personal communications, inspired additional posts as he continued to reflect on his own practices. Through conversations with the research team about how others were interpreting and questioning his reading, we were able to clarify some of the coding definitions that are presented in the Findings section. In particular, we recognized that expert digital readers may take advantage of practices of curating in ways that the teens, as a whole, did not, and that the participants' comments of judgment about the quality of the text were distinct from references to the value of their reading. Nuanced looks at the code definitions, as inspired by the questions and comments from our public audience on our own reflections, helped us make the jump from selective to theoretical coding.

Once we developed the list of theoretical codes (presented in the Findings section), we applied them to a sampling of the 23 interview transcripts to see if they fit the data. With the exception of the encountering codes—receiving, searching, surfing, and stumbling—our full coding scheme mapped neatly onto the data. Using excerpts from the interviews, we further refined the definitions for all four encountering subcodes, testing them out on excerpts that we had identified in the first pass. After we reached a consensus on the revised encountering definitions, we first published the connected reading

model as a framework for the teaching practices that we had tested and revised over the course of the larger study (Turner & Hicks, 2015b). Although we did not initially seek to create theory from this larger study, the preliminary analysis of the interview data indicated that new theory may be warranted. After the first publication, a book for practitioners, we returned to the data and coded all of it with our finalized coding scheme. The results presented in this article represent this final round of analysis, a deeper dive into the data from which the connected reading practices had emerged.

We used Dedoose (version 4.12) to code and analyze the interview data, and this tool allowed us to look at code co-occurrence. Therefore, simultaneously to the process described earlier, we coded for length of text to describe how the various connected reading practices were, or were not, being used. Although our purpose in this study was not to explore or categorize every type of text that students described while they were reading online or in print, we adapted three types of textual forms described by Thompson (2010, 2013) to help us describe what the teens were reading. We categorized social network posts, snippets or summaries from news items and blogs, and other types of instant messaging and digitalk (Turner, Abrams, Katić, & Donovan, 2014) as short-form texts. These kinds of texts were often skimmed or scanned without deep engagement. Mid-form texts included brief reports from the news media, blog posts, discussion forum posts, and online fiction, especially fan fiction. These texts required a longer period of engagement, anywhere from three to 10 minutes, and were typically read in one session. Finally, long-form texts included such items as investigative journalism and academic articles, as well as e-books and other transmedia stories. These are works that, in Thompson's (2013) words, were "hard to absorb on the fly" (p. 136) and required more time and attention than either the short- or mid-form texts, demanding a longer reading session (or even multiple sessions).

Trustworthiness

We have attempted to state our perspectives clearly throughout the Theoretical Frame and Method sections, and we acknowledge that these perspectives have the potential to skew interpretations of the data. To mitigate these effects and increase trustworthiness, we collected data from multiple settings, allowing the teachers in the classrooms to serve as checks in data collection decisions. Our teacher partners also served as first round reviewers of our findings, offering insight and feedback that shaped our work and ultimately led to the model. The original model illustrated the theoretical frameworks in which it was situated; however, when we asked teachers for feedback on the model, they requested a

more practical and less theoretical illustration. Because this feedback process happened in tandem with coding the data from the student interviews, we were able to develop a model that identifies practices.

Throughout the coding process, we worked collaboratively, with at least two coders working through the data, regularly checking for intercoder agreement, and revising code definitions to increase agreement. Most important, we shared our work publicly throughout the process, receiving feedback from researchers and scholars, as well as teachers and other professionals who engage as digital readers.

Findings

We began this research by asking what, where (on what devices), and how adolescents read. Our survey of 804 teens provided quantifiable answers to the first two questions, including what kinds of texts they read digitally and where (on what devices) they read those texts. The interview data helped us explore adolescents' reading practices more fully.

A Snapshot of Teen Readers

The survey specifically asked teens to indicate whether they read short-form, mid-form, or long-form digital texts. Of the 804 respondents to our survey, 82% reported that they had a social network account, suggesting that they were engaged in short-form reading. Additionally, 84% indicated that they specifically read news stories or blog posts. Finally, 50% reported that they read digital books or magazines. In our interview data, participants talked about all three types of texts, elaborating more specifically about genres and specific titles for mid-form (e.g., news articles) and long-form texts (e.g., Harry Potter books) and specific apps where they engaged with short-form texts (e.g., Twitter). Although the survey questions skewed toward asking about specific digital habits, teens responded with examples of both print and digital texts.

With the growth in device ownership, it is not surprising that where teens read is less a question of geography and more a question of the devices that they use. The participants in this study had access to a variety of devices (see Table 1). Teens also reported a disconnect between where they primarily read in school and out of school (see Table 2).

Although the majority of respondents indicated that they read primarily on paper in school, that majority was split between paper and device reading outside of school. There seemed to be a large number of teens who chose to read on a device outside of school, despite the fact they were not reading digital texts for school-based assignments. In short, the survey revealed that these

TABLE 1
Participants' Device Ownership (N = 804)

Device	Percentage of respondents who owned the device
Mobile phone	84%
Smartphone	71%
Internet-enabled handheld device (e.g., iPod Touch)	71%
Laptop or desktop computer at home	77%
Dedicated e-reader	21%
Internet-enabled e-reader	45%

TABLE 2
Percentage of Participants Who Reported Reading on Paper or a Device for In-School and Out-of-School Reading (N = 804)

Reading location	Primarily on paper	Primarily on a device	On both, dependent on task
In school	53%	7%	36%
Out of school	25%	32%	39%

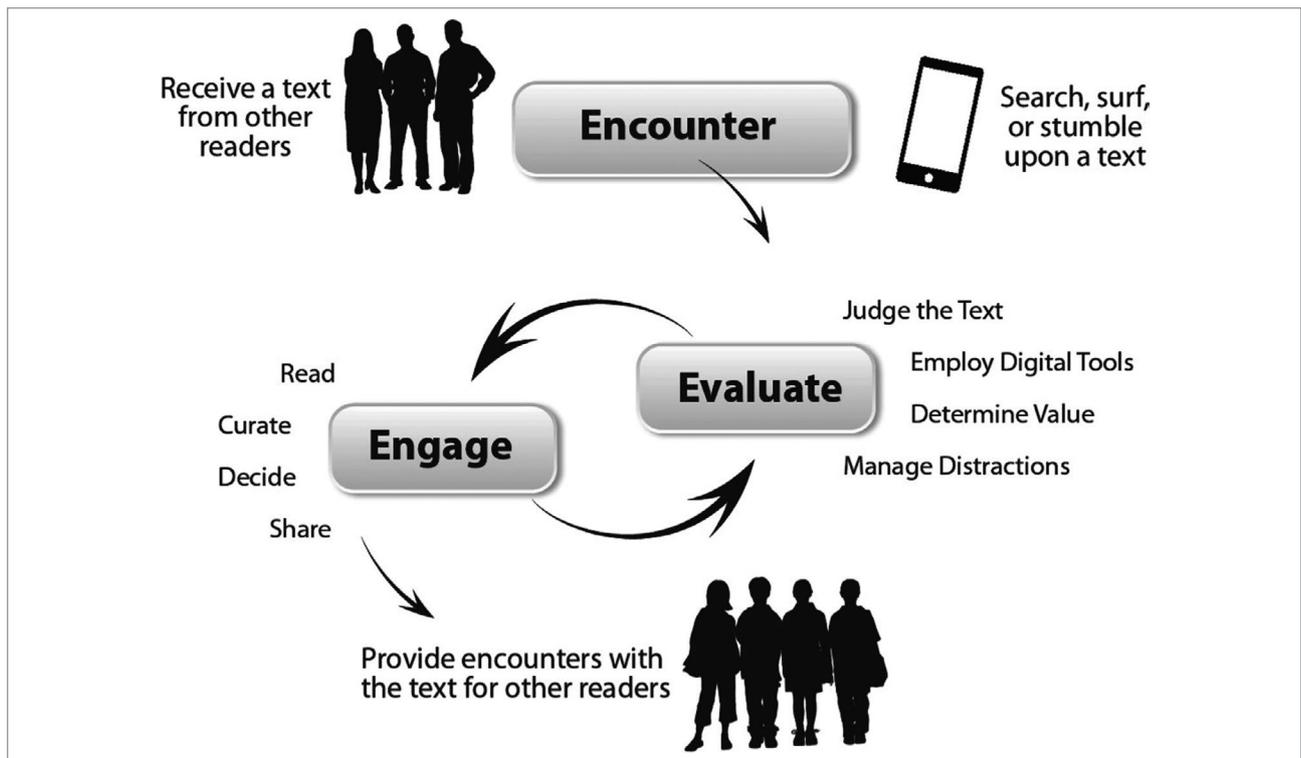
participants were engaged in both print and digital reading for a variety of purposes, both in and out of school.

Uncovering the Practices of Connected Reading

As with most questions about process, uncovering how teens read required deep analysis of interviews with adolescent readers. These data revealed several practices in which the participants engaged. Through self-study and a process of peer feedback, we were able to hone the practices into a model of reading in the digital age. Given the theoretical frame for this study, connected learning (Ito et al., 2013) and reader-response theory (Rosenblatt, 1978), we present a new theory informed by this theoretical frame and our data: a model of connected reading (see Figure 1), which speaks to the variety of texts types, both print and digital, that the teens in our study read. We named our theory connected reading, adopting the *connected* terminology, to acknowledge the similarities between our readers' behaviors and the principles of connected learners (Ito et al., 2013), while also referencing the complex, recursive reading processes that we uncovered in our data.

Within this frame, we identified key practices described by the participants in the study, each contributing to three main processes:

FIGURE 1
Model of Connected Reading



Note. From *Connected Reading: Teaching Adolescent Readers in a Digital World* (p. 21), by Kristen Hawley Turner and Troy Hicks, 2015, Urbana, IL: National Council of Teachers of English. Copyright 2015 by the National Council of Teachers of English.

1. *Encountering*: The manner in which a reader first makes contact with a text
2. *Engaging*: The activities that happen before, during, and after reading a text
3. *Evaluating*: The act of finding value in a text

Each of the three process of connected reading can be broken into several subcategories, presented in Table 3.

We acknowledge that the categories we gleaned from the data are somewhat overlapping and, at times, difficult to discern. However, the teens talked about these distinct practices, and we think it is important to acknowledge them as such.

Encountering

Sometimes...it's like something on Facebook that you're like "Oh, snap, something happened over there!" And you want to search it up, and like, I want to be eager to know. But the other times...I can sign into Yahoo, and it'll be like something that grabs your eye, and then I'll just click on it quick, or like I overheard people talking about it, so I want to go and search it up now. And that's how I get it...Sometimes when you sign into Yahoo, it's already there, like some article. I'll go from there. Or if I overheard something, like a tornado somewhere, then I'll search stuff and get more information about it. (Trevor, grade 12)

During his interview, Trevor described how he encountered texts, and in this short excerpt, he reflected on three different paths of encounter. At first, he mentioned Facebook, a social network that delivered texts to Trevor without his having to work very hard to get them. He simply went to the app and scrolled or scanned until he saw something that inspired him, in his words, to "search it up." His passive encounters with the texts on Facebook were different from the intentional search he described to find more information about a tornado. Receiving and searching reflected distinct practices in the data. In addition, Trevor described another type of encounter: He logged into Yahoo and stumbled around until he found something "that grabs [his] eye." His path was not overly intentional, aside from the fact that he knew that Yahoo would provide him with texts that may be interesting to him.

These kinds of descriptions provided by teens in our study helped us articulate the four subpractices of encountering. These processes are not distinct, and the goal of our project was not to discern exactly when a particular reader moved from the act of surfing the web to searching for particular information with a purpose in mind. Instead, we asked readers to describe their habits and gleaned these categories from their descriptions.

TABLE 3
Practices of Connected Reading: Definitions Categorized by Superordinate Practices (Encountering, Engaging, and Evaluating)

Code	Definition
<i>Encountering a text</i>	
Surfing	Moving from text to text with little intent, most often for a purpose of leisure, amusement, distraction, or “killing time”
Receiving	Coming across a digital text passively, by means of seeing it upon opening a website, via a link from a friend or colleague, or via a preset RSS feed
Stumbling	Following a connected path (both in terms of algorithmic, networked connections provided by websites and through cognitive, schematic connections in the reader’s mind) of related information from embedded hyperlinks
Searching	Actively seeking additional information to confirm (or disconfirm) an existing understanding about a topic, usually with the intent of learning something new
<i>Engaging with a text</i>	
Deciding	Filtering texts to be read or discarded; deciding when and how to read
Curating	Organizing texts for reading and archiving; establishing additional feeds based on current feeds
Reading	Skimming, scanning, and digging in; using multimedia; annotating; responding; interacting; monitoring; reading beyond a given text
Sharing	Offering public response to a text; posting or sending it to others
<i>Evaluating a text</i>	
Determining value	Considering interest, overarching intentions, and immediate purpose to identify how useful the text might be in the moment and in the future; situating the text in a broader, ongoing conversation
Judging	Critiquing the quality of a text (both content and form) as it compares with similar texts (asking, “Is it a good or bad example of [this particular genre]?”)
Employing digital tools	Identifying and utilizing the most appropriate tools to read, annotate, respond to, and share a digital text
Managing distraction	Self-regulating one’s attention related to the specific reading task and digital tool in use

Note. These practices were first published in Turner and Hicks (2015b), but the definitions were updated through this research process.

Receiving

The teens in our study described ways in which they received texts without actively searching for them. Through a constant stream of information on social networks and notification settings, the participants regularly found reading material by simply opening an app. As Erin said, “I do have, like, MSN as one of my home pages, so when that pops up, I do like to read through the headlines to see what’s going on.” Without trying, texts “pop[ped] up” for Erin, and she read. Similarly, Nina described her daily practice of reading the news headlines on AOL: “I do it when I get home from school, but I do that before anything else because that’s the first thing that comes up when I open the internet.” Simply by opening her web browser, she was presented with reading material.

However, some of the students elaborated that these passive encounters (receiving texts from a website or person) led to more active searching. For example, Patrick, an avid reader of *Wired* magazine, explained, “Every so often, my physics teacher sends a link to the entire class through email, and I usually look at those,

browse that, and then look at some related stories on that, too.” Being connected to other users allowed the teens to encounter a variety of reading material.

Searching, Surfing, and Stumbling

In contrast to the practice of finding a new piece for reading by receiving it directly from a peer, parent, teacher, or other known person, teens also described a continuum of active processes for encountering texts, especially web-based texts. The practices of searching, surfing, and stumbling (or stumbling upon), although not mutually exclusive, can be delineated by purpose and intentionality. On one side of the continuum, students described their initial foray online, after opening a web browser, as an active, intentional search. This involved the use of a search engine and specific questions or terms. The adolescents’ focus remained, according to their self-reports, largely on the topic as they moved through the top search results and, if needed, clicked on additional hyperlinks from those pages. In this sense, searching was a contained activity. For instance, when

Nina read an article and had unanswered questions, she used Google to find more information:

And then I like go to that tab, and I, like, read the article, and if I find it, like, really interesting, or it's something that's, like, unanswered kind of, then I'll, like, Google more stuff about it to see if there's, like, anything else I can find on the topic kind of. And then when I'm done with that, then I'll, like, go to the next one, like keep doing that.

In contrast, the teens identified two additional behaviors. At the opposite end of the continuum of intentional searching, students described surfing: the unstructured, unintentional exploration of the web, often for entertainment or because of lack of focus. This shift into a mode of surfing included behaviors such as starting up a web browser with a specific landing page (e.g., Yahoo), followed by a somewhat random pattern of clicking and exploration. With no specific search term(s) in mind, teens shared that their purpose was mindless. For instance, Catie noted, "It's just like this stupid mindless stuff that you just read. I don't know how to describe it. Like there's nothing, like, that's so important that I need to read it."

Distinct from surfing, some students described a slightly more intentional form of surfing that included semistructured exploration of the web, which we labeled as stumbling (or stumbling upon). *Stumbling* was not a term that students used to describe this behavior, and it was difficult for us to code unique and specific examples where a participant's survey response was stumbling, yet we borrowed the term from the former search and discovery tool StumbleUpon (Farokhmanesh, 2018). However, the practice of stumbling seemed distinct from surfing without intention based on the descriptions of the participants. For instance, Greg said,

Sometimes it's like I'm going to look this up because I really want to, and I really need to, and sometimes it's just like I find something interesting, and then I just go down this little wandering bunny trail somewhere.

In cases like Greg's, readers may have been generally interested in a particular news story and followed additional hyperlinks to find out more information about actors involved in that news story (following the patterns of surfing), but the browsing generally remained focused on the primary topic at hand (sticking with the intention of searching).

The overlap among searching, surfing, and stumbling leads to questions about intentionality and how a reader moves between practices, yet the data clearly showed that there was some sort of active engagement—the readers themselves were agents—through these practices.

Engaging and Evaluating

The connected reading model suggests that after encountering a text, a reader enters a recursive cycle of

engagement and evaluation. Although the data revealed distinct practices within these categories, the teens in our study demonstrated the complicated process of reading, which blurs the lines among these practices. To demonstrate this recursivity, we chose to organize the findings according to the practices of engagement and to highlight the practices of evaluating that shaped readers' decisions to read, their deeper reading, their curating, and their sharing.

Deciding

Engagement with a text begins the moment when a reader first encounters a social network post, a link to another website, or a new book in either the physical or virtual bookshelves of a library. At that moment, regardless of the method of encounter, a reader needs to decide whether to read now, read later, or discard completely. This decision involves several practices of evaluation, including determining the value of the text.

Kayla, a sophomore, described how she encountered texts on her social network:

I spend a lot of time on social networks like Facebook, Twitter, and that. I do spend most of the time similarly scrolling through posts and stuff. I do tend to read some of the links, and I follow some of the news websites whenever there's, like, breaking news or whatever.

Kayla indicated that she spent time "scrolling" and reading just "some of the links." The choice to follow links seemed to be related to her interest, in this case of "breaking news or whatever." Like Kayla, many of the teens in our study read constantly on social networks, and recent Pew Research Center data (Jiang, 2018) reiterated our finding. This kind of short-form reading meant that the students in our study decided to discard many texts, scrolling past them as they quickly evaluated interest and relevance. The participants described the purpose of this initial engagement and evaluation in a variety of ways.

JR, a middle school student, for example, engaged further with posts from his friends when they showed emotion and when the value of the particular text was one that connected him to his friends: "When it's, like, somebody I know, and then they write something important, or they seem upset, I look at it, and I actually pay more attention to it than, like, random people and their posts." Like Kayla, Holli, a senior, found value in following links that were interesting to her. Again, these interwoven processes of determining value to the reader herself and making a decision about deeper engagement were both tantamount to Holli's work as a reader. She said, "If I was really curious, then I would [follow a link], but it has to be, like, really, really interesting to me."

Interest played a key role in whether a participant chose to read a text, but the teens in this study demonstrated an

understanding of the ways they might judge the quality of the digital texts that they read. Students like Alan, a senior from New York City, focused on more traditionally academic approaches to judgment: “if it’s specific, if it gives important detail, and it gives accurate feedback of scientists and people who have read the article before and their opinions on it.” Alan’s reference to scientists suggested his view that quality texts include reputable details.

Although academic-based critiques were one way that students judged the quality of the texts they encountered, Holli revealed her practice of judging short-form texts. She described an instance when she noticed the quality of a celebrity’s tweets declining:

Well, at the time, she was going through a breakup with her boyfriend, and because she’s so famous, like she just kept posting like she was trying to encourage everybody. To say like, “Oh, I went through a breakup, so I know what all of you have been going through when you send me fan mail.” But it was just like every time she’s either responding to someone, and I’m thinking, “Oh, it’s going to be a good tweet,” and, “She’s funny, so I’m going to read it to see her funny comment,” but it’s not. It’s just her talking to somebody else when she’s having this conversation on Twitter. I was like “I can’t handle this anymore.”

In sharing her frustration about the nature of the individual’s tweets, Holli indicated her definition of a “good tweet” as one that was “funny.” She explained that as the quality of the tweets declined, not meeting her definition of good, she stopped reading future updates from this celebrity. In this way, judging short-form texts was especially useful to Holli in determining when or whether to read a text.

Moving Toward Deeper Engagement

The data from this study revealed that the point of encounter is extremely important and involves intricate practices of evaluation as a reader initially engages with a text, deciding whether to read now, read later, or discard. Once the decision to read has been made, a reader can engage more deeply with a text, although deep engagement does not always occur. Many participants described a difference between slow and careful reading—what researchers might call deep reading (Wolf & Barzillai, 2009)—and the skimming and scanning that is more often associated with digital reading (Zhang, 2013). Nina described the difference:

I think it’s just because, like you grew up reading print books, especially in school, so you’re used to reading it so closely. But when you’re online, a lot of times, you’re not reading. You’re just scrolling through stuff. Like when I’m on Facebook, I don’t read every status. I just kind of scroll through. And that’s what I’m doing when I read online, too.

Some of the students suggested that the skimming and scanning they do with digital texts does not constitute “real” reading. Seventh grader Anika explained,

Usually, these emails that my friends and I send each other, it’s more like a conversation rather than reading because we’ll be, like, arguing....But once in a while, my friends will post something where it’s kind of like one of those big news things. Like my friend had posted a couple of weeks ago about how this one guy had adopted a dog, and it was supposedly a military officer’s dog, and he had just died and everything. It was just little news thingy that you’d see. And for those, I don’t consider that like a sort of little bit reading. I mean, what I mainly consider reading is when it’s, like, the books, like actual books or textbooks and like web sites that I use for like research and everything. I’ll consider that really reading.

Like Anika, several participants suggested that “real” reading meant engaging deeply with a typical academic text, one that would generally be perceived as valuable in academic or professional contexts.

Other students, however, acknowledged that skimming was an important aspect of their reading. Austin said, “When I’m looking for technical information, or I’m looking for quotes to prove a point,...I’m looking for keywords, and I’m not reading the whole article. I’m just looking for specific bits of information.” Austin compared this kind of skimming and scanning, done primarily to complete an assignment, with a situation in which he read an article of his own choosing more deeply and chose an assignment topic based on his reading:

For instance, we have to do a speech in public speaking, and I’m trying to choose topics that I have sources in my head already because I’ve sat down, and I found an article that I thought was interesting. I sat down, and I read it, and I soaked up all the details, and I have them already in my mind. I know I have a good source for this because I’ve read it, and I understand it, and it’s something that I actually enjoyed reading, so it’s something that I took more from.

In both situations Austin used his reading to support his coursework. He understood that his engagement with the text was different based on his purpose for reading.

The teens in the study described practices for engaging with texts that required the strategic use of digital tools. It is worth noting, at least briefly, that tools for annotating websites and e-books continue to be developed and often mimic the types of practices that one would use with print-based texts, such as summarizing, questioning the text, or making connections (e.g., Beers & Probst, 2012; Harvey & Goudvis, 2017; Keene & Zimmermann, 2007). Although not as popular with the teens overall, some described software and web apps that include annotation tools to highlight, make marginal notes, and engage in threaded discussions (Turner & Hicks, 2015a, 2015b).

Still, several students mentioned the utility of the dictionary feature on a digital device. Holli said, “I didn’t know a word one time, and it’s just like click it and look it up on the internet....It was very easy.” Deanna explained how reading digital texts made this practice easy:

If you have a paperback book, you're not going to go to the dictionary to find out that meaning. You might write it down, but I don't think you would. But when you have that digital media with you, you can within seconds go onto the internet and type that word in.

Sienna agreed:

Kindles are really a good way to read more challenging subject matter. Rather because you can look up words easier and like right now I'm reading *Brave New World* [by Aldous Huxley], like, in print in the actual book form. And I found that there's a lot of words that I don't understand because they might be more medical terms, and so I've been writing them down, but it's easier when you can get the instant gratification of looking it up.

In addition to using dictionary features, Deanna, Nina, and Kayli mentioned highlighting and bookmarking as tools that they used while reading digital texts. Deanna enjoyed being able to mark a quotation and "keep it forever," and Nina felt that digital tools allowed her to "change stuff" that she might mark "by accident," unlike a highlighter on a print page.

Other teens in our study explained that despite the availability of digital tools, they still preferred analog methods of engaging with texts. Carolee, a senior, explained,

Yeah, because on the Kindle, all you can do is you can tap a word, and you can highlight it. But then it's like, if I looked at the next page, I'm like "Oh, man, I got to go back," and it's like you flip to the beginning. A book is easier because you can actually put like a little sticky note or a bookmark in it, and you can remember where you were.

Similarly, Erin preferred pencil and paper to the digital annotations:

When I'm reading [a book] off the Kindle, I'll just kind of make small highlights just to remember that when I look back at the passage. So, I usually prefer to have paper and pencil for that just because it would be easier to circle things and make little notes about it.

The differences described between students like Deana, Nina, and Kayli and students like Carolee and Erin seemed directly related to the individual reader's capacity to use digital tools to meet their purposes for reading. When a student knew *how* to use digital tools to facilitate reading, they recognized the affordances in doing so.

Curating for Later Reading

There is a rich history of readers' cataloguing and organizing print texts for later reading. The participants in this study said that they visited libraries to find print books, and some of them talked about curating bookshelves at home. However, most of the students in our sample described the bulk of their reading in terms of skimming and scanning, while occasionally engaging

more deeply with a text. Few of them shared practices like Austin, who used digital tools to help him curate his short-form reading into reading he could do later. When describing his reading on an art website that he frequented, Austin said that rather than clicking on a single piece of art, viewing the page associated with it, and then returning to the main gallery, he instead quickly scanned the page for several works that interested him. He said,

You have like the main page, and there's a little thumbnail of every picture that's been recently posted. There's like 60 on a page. And you skim through, and you're like, "Hey, I like this picture. I want to see it." You don't want to click on the picture, be redirected, look at the picture, like it or don't like it, then go back to the previous page. Hold down Control, click on all the icons you like, and then go through all the pages that you have open, like this is good, this is good, this is good, this isn't good.

As he identified interesting pieces, he used a keyboard shortcut so he could open several pages in new tabs. In essence, he curated texts so they were available to him when he was ready to engage further with each page.

Like Austin, Deanna employed simple curation practices, using Pinterest to save links that she wanted to revisit later. She described how she used Pinterest to collect texts:

What I do is I'll [repin] a bunch, and then if I remember later on, then I'm going to go look at my board, which you create. And then I go through that, and if I'm picking prom hair stuff, and like my appointment's in a week or something, I'm going to go back to that board and just look at those.

As Deanna described her process, she noted that relevance in her life influenced her choices to read later.

Deanna and Austin were two of a very few students who described curation practices, and both of their acts of curation involved images, rather than alphabetic text. In fact, only two students we interviewed mentioned RSS, which allows readers to receive curated texts of interest, and both of those students had been introduced to the concept in class by a teacher. One student expressed interest in using an RSS reader after learning about it from a teacher: "I want to get the Feedly app for my phone so I can use that for school, so I can get, like, 'Subscribe to CNN.'" Another student learned about RSS feeds in class and then searched the internet to learn more: "The guided study teacher started talking about RSS tools, so I went on Google and looked for one." That student, Rex, found Feedly and explained that he started using it: "I just use it for news since we don't really watch TV."

Rather than actively curating reading material to have text accessible to read when time and purpose allowed, most of the students in the sample searched for

texts for initial reading or even, like Nina, to reread. Nina said,

I don't keep [an article I've read and might want to read again later] anywhere, but, like, I have gone back to articles. Like if I read something, maybe, like, a criminal case or something where it's, like, a developing story, I do go back to those. Like, I'll search it on the AOL page later.

Through our self-study, we recognized that expert digital readers practice curation in ways that the teens in this study did not, using digital tools to support efficient access to texts that meet a reader's intent at any given time. Nina's practice, and those of her peers, did not demonstrate use of tools in this capacity.

Sharing

Many students described how they encountered texts through their networks when others shared, thus identifying sharing as an important aspect of connected reading. Fewer of them described their own sharing practices. However, as with the decision to read a text, sharing a text closely aligned with a reader's purpose. For example, Sienna indicated that her own interest in a text sometimes inspired her to share with her friends:

If I see a post on something, and I'm like "Whoa, this is really cool. I have not heard about this. Thank you, this website, for showing me this." And then if I really like it, I will forward it to my friends.

Another student, Holli, described her habit of retweeting (sharing someone else's tweet) any tweet that had to do with a particular movie: "I'm really into the movie *Pocahontas*, and if I see [someone] has a tweet from *Pocahontas*, like, I'll always retweet them no matter what it is. It's like I love *Pocahontas*." Holli determined that anything related to *Pocahontas*, "no matter what it is," had a high value and was worth sharing with her followers.

Neither Sienna nor Holli indicated that they evaluated the interest of individuals in their networks in their decision to share. Rather, their decision to share a text seemed to rest solely on their own enjoyment of a text. In contrast, Austin described sharing with comment, hoping to encourage his network to engage with a text.

And I don't so much share things that other people have made. I like to create my own things. And whenever I base something I do off something else, I will give the artist credit, and I'm, like, inspired by something like this, and you should go look at this. On occasion, I'll do journals when I'm really impressed by something, and I think people don't give it enough credit. I'm like, "You should really look at this because it's really interesting."

Whether it's because readers evaluate the interest level of the audience or want to show their own reading interests to others, sharing has become an important aspect of engaging with texts in the digital age.

Managing Distraction

To engage deeply with a text, readers in the digital age are required to manage the distractions associated with reading on a device. Although categorized as a practice of evaluation, we chose to separate managing distractions here to address an issue that dominates popular notions of digital reading.

Many teens in the study described the experience of getting distracted during their reading. Nina described the very existence of links as being a tempting distraction to her purpose: "I click on links, but normally not, like, related to what I'm reading, like separate topics that I think are cool." Trevor explained that computers can be distracting:

When I read on a computer, sometimes I get off task. If I see like an ad or something, I'll click on the ad. Or I want to go on Facebook or websites, and like it gets me off track of what I'm supposed to be doing.

Some participants, like Trevor, pointed to the device itself as conducive to distractions. Perhaps counterintuitively, Leo reported that he found a hard-copy book to be more distracting than an internet-enabled e-reader:

Basically, when I have a hard-copy book, I feel like I want to, like, look for something else to, like—like, I'll probably have my phone on the side. But when I have my Kindle, I would—it would be right there. If I get sidetracked, it'd be only for a minute, and then I'd be right back into, like, reading.

Regardless of the form that teens found distracting, many had strategies for dealing with those distractions, adopting both behavioral and cognitive techniques to keep them on task and focused in their reading. Catie, for instance, said that she often printed out her reading to "overcome getting distracted" and surfing the web rather than doing her homework. Cindy, likewise, admitted that "my phone is my distraction," so she described her strategy of putting her phone away until she was done reading.

A few of the participants described the use of technological tools to help manage distractions. Trevor, for example, used the parent setting to help him stay on one app and stay focused:

And you stay on task because, like, if you put that on, like you're, like, craving to play the game, but you can't until you finish reading, so you're going to wind up finish reading so you could play games....I'm getting better and better at staying on task.

The data showed that teens recognized the distraction and, in some cases, worked to overcome it. These kinds of strategies were far less obvious than the fact that the distraction, for both print and digital reading, existed.

Discussion

Data collected on technology use is almost immediately out-of-date due to the nature of changing technologies, and device ownership and use are even more ubiquitous than when we collected our data. As of May 2018, 95% of U.S. teenagers had access to a smartphone at home, and 45% claimed to be online “almost constantly,” with another 44% online “several times a day” (Anderson & Jiang, 2018). In short, the implications of our findings are even more relevant now than they were in 2013 and 2014 when we gathered data for this study.

The model of connected reading and the adolescent voices that shaped our understanding of what, where (on what devices), and how teens read have implications for both practice in teaching and research about reading. In particular, we highlight three key features that emerged from our data and informed our development of the connected reading model: recursion, social connection, and a both/and mindset.

Recursion

The connected reading model suggests that readers encounter texts in a variety of ways. They may receive them from others, somewhat passively, or actively seek out new reading material by surfing (without intention), stumbling through sites (with some intention), or searching (with focused intention). At the point of encounter, the reader enters into a recursive cycle of engaging and evaluating, processes that are mediated by the tools available to the reader. Recursion, then, is an important aspect of connected reading.

The concept of recursion derives from the fields of mathematics and linguistics and was adapted to the field of literacy by Flower and Hayes (1981), who articulated a recursive model of writing processes. Across all of these fields, recursion suggests that processes are inter-related, are repeated, and result in various outcomes, depending on how they are deployed. Connected reading is recursive in the sense that the practices of evaluation are deeply linked to the practices of engagement.

Our analysis revealed that the co-occurrence of evaluating and engaging practices necessitated a cyclical, rather than linear, model. For instance, Sienna’s example of having a website shared with her, finding significance in the content of that website, and then sharing that website with other peers in her network shows the intertwined nature of engaging with and evaluating the text. In Rosenblatt’s (1978) view, the reader (Sienna), the text (this particular website), and the poem (her reading of the website, finding value in it, and immediately sharing) demonstrate a model of connected reading in action. Sienna, and many of the readers in our study, actively engaged in a recursive process.

Recursion, then, requires readers to make choices: to evaluate, to engage, and to continue practices of evaluating

as they make decisions, read more deeply, and share their reading with others. The cyclical model provides new insight for educators and researchers as the field continues to explore reading in today’s world.

Social Connection

Texts have always circulated in a world of readers, yet the opportunities for sharing one’s reading with others in a network is easier than ever with digital tools. Readers in the connected reading model exist within a network of other readers, highlighting the social nature of reading in the digital world. In addition to the general social media tools that teen readers in this study used, such as Facebook and Twitter, they also highlighted specific online spaces and communities in which they created and consumed a variety of textual forms, including discussion posts, pieces of art, and their own fan fiction.

Smith and Wilhelm (2002) identified social activity as an important aspect in the literate lives of the teen boys in their study. Similarly, social connection and activity was also important in the reading lives of the adolescents we interviewed. Their descriptions of how they encountered texts, in particular, demonstrated that their reading practices existed in a network, where communities of interest and trusted mentors and peers shared texts with them. As with connected learning, these teen readers engaged in reading primarily with interest driving their purpose and with valued texts that they encountered from their social connections.

However, the teens in our study, much like the younger students in Hutchison et al.’s (2016) study, suggested that “using the Internet to consume information was more common than using the Internet to communicate and connect with others online” (p. 449). Although connections were important for the decision to read a text, few of our participants indicated that they shared texts with others on a regular basis or with purpose. Lessons in how a reading network operates might benefit readers and the larger community, inviting them to build stronger associations with readers in their affinity groups or to open dialogues with readers of different perspectives. These kinds of activities were valued by some of the teens in our sample but deemed essential by the research and teaching community that provided feedback on early drafts of the model. As the field moves forward, it is necessary to consider how readers both encounter and share texts in a network that reaches across the globe, as well as across time.

Developing a Both/And Mindset Toward Print and Digital Reading

We began this research with a specific focus on digital reading; however, the teens in our study helped us understand that they live in a both/and world that includes

print and digital media. Adolescents need to learn how to navigate print texts, and they need to learn how to consume digital texts critically and to share them with purpose. Readers need to be flexible, sometimes working with the same text across multiple devices and formats. Because the connected reading model incorporates print and digital reading, the practices of encountering, engaging, and evaluating have both print and digital counterparts.

For the initial encounter, today's reader has more options to receive texts (e.g., via email, online notifications, scrolling through a social network feed, or looking on a bookshelf). Searching for a text may not necessitate traveling to the library, browsing the shelves, or thumbing through physical books for all readers. However, the fundamental practices of thoughtfully seeking specific texts or gaining recommendations about new texts underlie the processes of reading, whether conducting a search engine query, consulting the index of a book, looking up a book in a library database, or talking with a friend.

When readers engage with texts, they might employ annotation and curation tools. Bookmarks, dog-eared pages, marginalia, sticky notes, and a reader's journal have been strategies used by readers for decades, if not centuries, and many digital tools (e.g., highlighting, sticky notes, voice memos) are designed to mimic a print counterpart. Although some of the readers we surveyed had knowledge of these digital equivalents that could be used for strategic reading, most did not. The knowledge of and ability to employ the digital tools available to readers in similar, analog forms could encourage more thoughtful applications of tools across mediums.

Finally, with evaluation, a both/and perspective invites additional opportunities to read the world critically. The evaluative practices that readers draw on when reading print text, such as judging the credibility of a text, remain essential in a Web 2.0 era of digital authorship. Although a longer treatise on the role of authorship and authority from the time before Gutenberg invented the printed press to the modern era is well beyond what can be explored here (and questions could be raised about the ways in which we have privileged the power present within any given text), there is broad agreement that the process of evaluating a website places new demands on readers. However, all texts warrant such scrutiny, and print should not be privileged. Conversation around evaluating digital texts often centers around reliability and credibility; however, our data show that readers of all texts are constantly determining the value of texts they encounter, reflecting on the texts' relevance to their interests or needs in a given moment.

Moreover, the connected reading model suggests that readers—to recognize and reflect on the importance, quality, and substance of any given text—can describe the value that a text has in their personal and

academic lives. Several teens in our study shared a belief that digital or short-form reading is not “real” reading. However, the connected reading model demonstrates that all texts have value—whether they are short- or long-form, whether a message from a friend or a classic novel—and readers have the joy and challenge of endless choices in an ever-shifting landscape of reading opportunities.

Shifts in Instructional Practices

As noted earlier, the teens in the present study identified a disconnect between the texts that they were reading in school (mostly print) and the texts that they were reading at home (largely digital). We can work toward closing this gap through shifts in teaching about reading. We acknowledge that neither the research design nor the data we collected were intended to look closely at teaching practices or curriculum, nor did we intend to make an empirical measurement of students' reading comprehension or critical evaluation abilities. Although our purpose in this study was not to quantify individual readers' skills, our interview data clearly showed us something else: When compared with traditional reading instruction, connected reading can offer a more nuanced way of describing, examining, and ultimately, teaching reading practices. Although we acknowledge the lure of digital distraction, and the participants in our study did, too, we were impressed by their capacities to articulate and reflect on their reading practices. In other words, as they described their reading habits, the youths implicitly suggested that connected reading practices merit further academic exploration by teachers, one part of an overall approach to reading instruction in a both/and world.

For instance, practitioner-oriented texts in teaching strategic reading in print abound, and in no way do we advocate giving up on the foundations of reading instruction. However, we recognize that unless a renewed effort is made to help provide professional development for teachers that involves digital text (including the wide swath of web-based, social media, and e-book reading), students will not be prepared for college and careers, where the majority of texts are digital (Colbert, Yee, & George, 2016). Rather than teaching a single, static approach to students or preparing them to apply a strategy at a predictable, given moment, the teaching of connected reading recognizes and prepares teen readers for complex and dynamic practices, such as creating one's own reading path, multitasking, and managing distractions.

To develop instructional strategies for connected reading practices, then, teachers and teacher educators could make explicit efforts to talk with their students about the ways in which they manage and use their devices for reading, specifically, as well as for managing the social practices related to reading. For instance, asking

students about their use of and preference for e-books, pointing out various options for finding and downloading e-books, and using the annotation features to engage in dialogue with classmates through an e-book application are all skills that, based on our data, are not very often taught in middle or high school classrooms. In short, we feel compelled to bring strategies for choosing digital texts to light and move well beyond simple search engine strategies or website evaluation checklists.

Although teens in our study shared several strategies for managing distractions, this was also an area where they also could benefit from instructional support. Among the strategies that they suggested for managing distractions, “printing it out” was one we heard often; although possible in some cases, printing is not always a viable strategy, and in fact, there are many tools that readers can use to manage digital distractions that our participants did not note. Ad blockers and reader view extensions are just two examples for managing distractions, but even more important, the development of self-regulation skills is vital for readers in today’s world. Reading researchers and educators should continue to draw from research in the field of psychology to investigate and build on digital readers’ self-regulated learning strategies, which can help readers, for example, identify reading goals, manage distractions, and reflect on their learning (Coiro & Dobler, 2007; Putman, Hathaway, Coiro, & Quinn, 2015; Zucker, 2018), which are all habits that are good for print-based reading as well.

Similarly, the adolescents in the present study did not, for the most part, use curating tools or practices, such as online notebooks (e.g., OneNote, Evernote, Google Keep), cloud-based bookmarking tools (e.g., Diigo, Pocket), and file management options (e.g., Dropbox, Google Drive). Organizing their reading selections for later, let alone annotating those selections while in the process of reading, is an important skill for students to develop. Inundated with texts, modern readers need to engage higher order skills than simply searching (or, when they forget where to find them, re-searching) for texts. Teachers have the opportunity to model mindful curation before, during, and after reading to assist readers as they navigate an abundance of information. As part of building their habits of mind for leading a literate life, teachers could create repeated opportunities for students to think about how one seeks out, catalogs, and shares reading material both in print and digitally.

In short, we believe that all the practices identified in the connected reading model are worth teaching, but also important is the value we place on different kinds of texts in school. Our hunch is that students find a disconnect between print and digital texts in their school-based and home-based reading in part because school values mid- and long-form texts. However, as our survey

and interview data indicate, the majority of participants reported frequent reading of social media (typically consisting of short-form texts) and a regular habit of skimming and scanning digital texts. The students in our study would benefit from developing reading stamina, but they also need teachers to talk with them about how different kinds of reading are appropriate and valued in different contexts. Skimming has a strategic value and can be used for leisure reading and academic reading. Not all texts require close, deep reading, and not all texts must be read in their entirety. This stance is true for both print and digital texts. However, it is clear that many texts require deep, sustained attention. Readers need practice with texts of varying length and complexity, and teens need to know that the kinds of reading in which they—and all of us—engage daily (e.g., social media, news headlines) require more attention and reflection than we might think to build the deeper, repetitive practices that strong readers require.

Future Research

This study builds on work in online reading comprehension as the field of digital literacy continues to work in uncharted territory. The connected reading model offers many opportunities for future research. First and foremost, researchers can explore each of the practices in action to provide more detailed and nuanced reports of what readers do when engaged in recursive reading practices, making connections with their peers, and moving back and forth between print and digital texts. This work should expand in method to include real-time observations of teens as they engage with all kinds of texts, especially digital texts. Although beyond the scope of this study, it would be a natural extension to analyze screen-recording and eye-tracking data as readers engage with texts.

In particular, given the descriptions that our participants shared with us about how they encountered texts, we argue that the encounter is a point at which educators could look to make impact with reading instruction. Certainly, teaching students comprehension strategies and helping them read for explicit and implied meanings will still be important. However, with so much information, so many opportunities for encountering texts that are swirling by, we need to think carefully about what we teach students to do when they encounter new texts and to be mindful about their practices as they plan to share these texts with others.

Testing the connected reading model could lead the field in a new direction. To date, research has tended to rely on the idea that individuals sit down at a computer, or perhaps with their mobile device, and are already serving a purpose for reading and searching (or searching and then reading) and that they will then need to

attune their critical thinking and analytic skills to check the veracity of sources and triangulate their understanding of the texts. The findings from the present study suggest that there is much more to consider about how and where readers encounter texts, how those texts circulate within their own associated network of peers, and when readers make decisions to move between print and digital formats. Even when choosing digital text, exploring the additional opportunities within basic web browsing, social network post scrolling, regular e-books, and multimedia e-book experiences all warrant further attention, especially with the goal of exploring how readers circulate and share those texts.

Finally, as we consider new opportunities for research related to digital reading, we encourage researchers to consider the ways that students are actually engaging in online reading tasks through naturalistic observation, not merely through carefully designed experiments. Although we agree that the foundational research in digital literacies has provided us with a great deal of information about students' abilities (or, unfortunately, their lack of abilities) to evaluate website credibility and comprehend online reading materials, we are also looking at very specifically designed protocols that invite students to engage in reading tasks that may not mirror exactly what it is they do when they pick up their smartphone to respond to an incoming alert, open their web browser to a portal that flashes sensational news across the screen, or log in to their e-book reader and are able to immediately look up the definition of an unfamiliar word. Understanding when, how, and why students engage in digital reading processes will be crucial if we hope to move the needle on stagnant test scores and graduation rates. Again, we reiterate that the main insights from our survey of over 800 students and deeper conversations with 23 of them focus on recursivity, association, and concurrence in reading practices, both print and digital. As we have become fond of saying when describing this research, adolescents live in a both/and world. We hope to better prepare them, as readers and as citizens, for that world. Understanding the recursive, ongoing nature of being a reader, finding new texts, documenting what one has learned from existing texts (both print and digital), and actively connecting other associated readers to texts they might appreciate should be a primary goal of reading instruction.

As the product of exploratory research, the model of connected reading presents possibilities, not answers. In a rapidly changing technological landscape, simply repeating our method—drawing on survey data and interviews—may also uncover new practices that can help the field understand what, where, and how adolescents read, in an effort to teach them how to be more critical consumers of texts and effective connected readers.

NOTES

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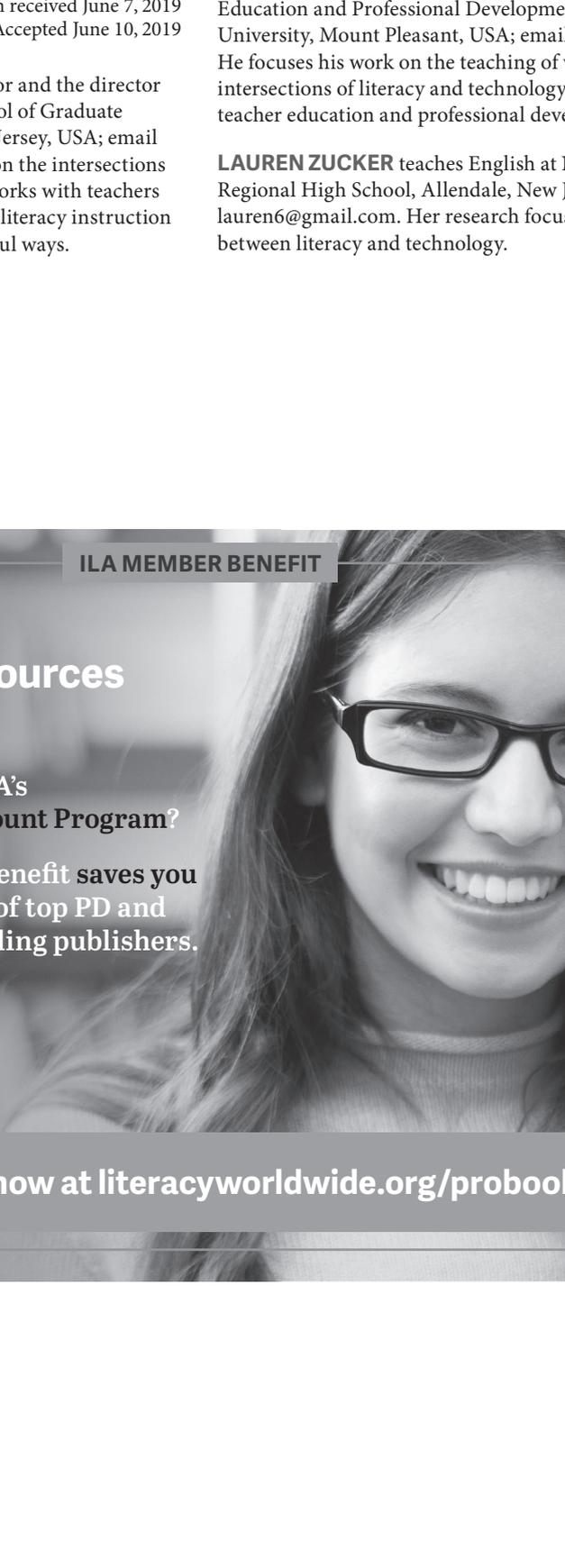
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