

Kindle in the Writing Classroom

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Abstract

The authors, two librarians and one English department faculty member, received a grant to purchase of a set of e-book readers, Amazon's Kindle 3.0, to be used as an integral part of the writing classroom experience for students. In a literature and composition class held in the spring of 2011, students were loaned Kindles to read all of their class texts. Students' attitudes towards technology and their experience with the Kindle was assessed through three online surveys and a focus group to track any changes over time to discover what effect if any, using a Kindle had on their reading, writing, and class discussion experience. The instructor also contributed his thoughts on how using the Kindle in the classroom changed his pedagogical approach. A concurrent program to lend Kindles at the library is briefly described.

Published by Elsevier Inc.

Keywords: Kindle; e-books; Writing; pedagogy; Reading comprehension; Librarian-faculty collaboration; Library programs

With the advent of the iPad, the sales numbers for e-books surpassing hardcover print books at Amazon, and the release of a low-priced Kindle e-book reader in 2010, we may have reached the turning point where electronic books finally come into their own. However, to paraphrase Mark Twain, the rumor of the death of print has been greatly exaggerated. We are now ambidextrous readers, often using electronic devices to read news and short correspondence like email, while turning to print for lengthy, difficult material or illustrated texts. We have moved past the question of *if* reading on personal electronic devices will become embedded in our daily lives to focus on *how*. On college campuses, faculty and librarians work towards supporting students' digital reading, writing, and researching, and in doing so, uncover questions regarding how electronic devices like Amazon's Kindle change (or do not change) the way we learn and teach. This paper describes a project performed in 2011 at the University of Georgia (UGA), a large Research I institution. The authors, two librarians and one English department faculty member, received a grant to purchase of a set of e-book readers, Amazon's newly inexpensive Kindle 3.0, to be used as an integral part of the classroom experience for students. In a literature and composition class held in the spring of 2011, the researchers loaned students Kindles to read all of their class texts and assessed students' attitudes towards technology and their experience with the Kindle through three online surveys, in-class observation throughout the semester, and a focus group in order to track any changes over time.

Published research to date about the use of Kindles or other e-book readers in classroom settings has tended to focus on issues peripheral to learning outcomes such as the extent to which paper is saved by use of e-readers, the note-taking features of the device, students' level of interest, and budgetary considerations of electronic textbooks (Princeton, 2010;

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Marmarelli & Ringle, 2010; Crowell, 2009). As e-reader technologies and prices are changing quickly, a more lasting investigation would be the exploration of the pedagogy of the digital text, and how the classroom experience is affected by the use of e-readers. Investigating how technology both shapes and reflects certain ideologies, Siva Vaidhyanathan (2004) wrote that “.. few technologies are innocent. Their very presence alters our worldview, our environment” (p. 19). This research addresses that question of “how much” in regards to changes in students’ reading and writing with digital versus print texts.

In the classroom, a shift to reading texts on a screen, referring to digital texts in classroom discussions, and working with digital texts for writing and research assignments will require changes in pedagogy from the faculty involved. Writing well before the advent of the Kindle, Cynthia Selfe and Susan Hilligoss (1994) described how, “Computers complicate the teaching of literacy.. [and] change the ways in which we read, construct and interpret texts” (p. 1). Our attention to how e-readers mediate the classroom experience is an important addition to the current discussion of computers and literacy, especially as digital reading becomes ubiquitous both in and outside of the classroom. A related issue is the place of e-readers in the academic library. Libraries have provided access to e-books through subscription services (such as NetLibrary, ebrary) for many years, but these have not been very popular with users, perhaps because of their limited interfaces and the short-term access users have to the texts. As dedicated e-book readers and cross-platform applications for reading e-books on multiple devices become more popular, libraries will need to be ready to support digital reading and researching in new ways, including making online reserves available in e-reader supported formats and facilitating access to e-reader friendly texts that are available in the public domain.

1. Method

In this study, eighteen undergraduate students enrolled in *ENGL4835: Environmental Literature*. The course description reads: “English and American literary works that speak directly to environmental issues and address the consequences of human activity on local, regional, and global natural systems” (University of Georgia, 2011). On the first day of class, the instructor explained how the Kindle research project would affect the way they accessed texts. Students were invited to ask questions and were given time over the next week to review a description of the study and choose whether or not to sign the consent form to indicate that they would participate.¹ There was no reward or punishment related to choice of participation (i.e. extra credit or assignments dependent on using the Kindle). Students were informed that their responses would be kept anonymous and that they could stop their participation in the study at any time. For this group of students, there were no apparent barriers in the use of an e-reader versus print (i.e. all had normal or corrected-to-normal vision). All survey responses were keyed to a number and stripped of any identifying information. In-class observations and focus group notes were similarly recorded without any detail that would single out an individual. Only one student opted out of the study, but all decided to use the Kindle to access course readings. Students’ academic majors varied, but most were English majors. The course was heavily cross-promoted to students from the Ecology program as the subject was thought to have appeal for that group in addition to those already studying literature. As this was an upper-level course, most students were in their third or fourth year.

The researchers studied students’ reading, writing, and in-class experiences in several ways. One of the librarian researchers was embedded in the course and attended each class session to record observations on class dynamic with the Kindle and with each other. In class, the librarian made observations about interactions with the Kindle, making notes after each period. The course instructor also kept observations about how he changed his teaching style and what new things he added to his pedagogical repertoire in order to accommodate the Kindle. Students took online surveys designed to assess their comfort with and use of technology, their preferred method for reading different types of texts, and their experience with the Kindle at the beginning, mid-point, and end of the semester to track changes in students’ perceptions of the Kindle over time. Additionally, a small group of students also participated in a focus group, where these experiences were discussed in depth. The class instructor also provided insight into assessing students’ writing and in-class discussion performance. This multi-faceted approach to the project created a rich collection of information about the use of the Kindle from the students’, professor’s, and librarian’s perspectives.

¹ Appendix A – consent form.

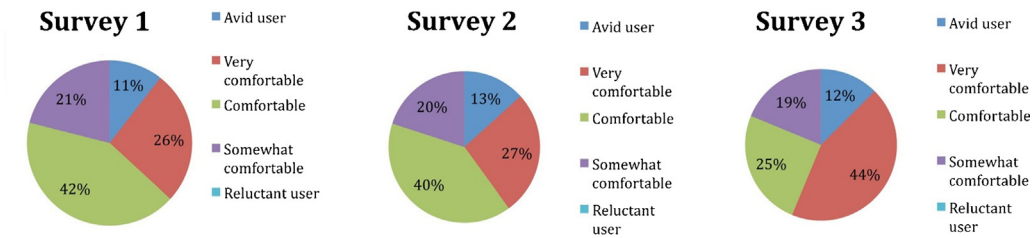


Figure 1. How would you describe your comfort level with new technologies?.

2. Results

2.1. Comfort with new technology

As children who grew up with an emphasis on computer literacy under the Clinton administration's Technology Literacy Challenge during the 1990s, we believed most (if not all) students in the class would be comfortable with using a new device like the Kindle as this national project sought to prepare all school children to comfortably and capably use computers in their school work, and later, in their careers (Selfe, 1999). In order to gather baseline information on students' comfort with technology, especially regarding their preferences for reading, we distributed an online survey through the course management system in the first week of class.² This survey, which we repeated at the mid and end points of the semester, allowed for discrete and open-ended responses to questions. The first question asked about students' facility with new technologies in order to learn how individuals perceived their level proficiency in learning to use new devices or software. Results from the first survey revealed that a majority (40%) felt they were comfortable with new technologies, but liked a bit of assistance available to them if they ran into trouble. Thirty-five percent described themselves as "very comfortable" or "avid users." Though no one reported they were "very uncomfortable" with new technologies, twenty-five percent were borderline, choosing "somewhat comfortable" as the best description of their feeling towards using new technologies. In class, many students expressed interest in the research project and the prospect of using the Kindle for their readings. This spirit of adventure and openness to experimentation may have compensated for some degree of wariness regarding new technologies. Examining the results in the second and third iterations of the survey, three respondents raised their self-reported comfort level with new technologies by the end of the semester. No one reported their confidence was diminished (Figure 1).

2.2. Online texts—current use

We were also interested in *how* students accessed online texts, particularly as most students indicated that this was their first time using a Kindle. We asked, "How do you access online texts?" and gave several choices from which the student could choose any number in any combination. Over the three surveys, a majority of respondents indicated that they access online texts via laptop. However, as they could mark all devices they used to access online texts, it seems that these students read on whatever they have handy. The other choices included Kindle, iPhone/smartphone, iPad, desktop computer and other. Though no one offered a gadget not listed in the survey choices, every other device was checked at least once in all three of the survey results, indicating that students are not tied to one particular piece of equipment for their information needs. As one respondent wrote, "If I can read on it, I will" (Figure 2).

2.3. Reading preferences—Print or online (or both)?

Students were also queried on how they preferred to access different types of texts. These results show preference for digital texts in certain situations and print texts in others. We asked, "How do you prefer to read news stories?" Results from the surveys indicate that most preferred to read news stories online. Reasons given included: saving paper, cost savings, ease of linking between stories, ability to read multiple sources to get a more varied perspective on a

² Appendix B – survey.

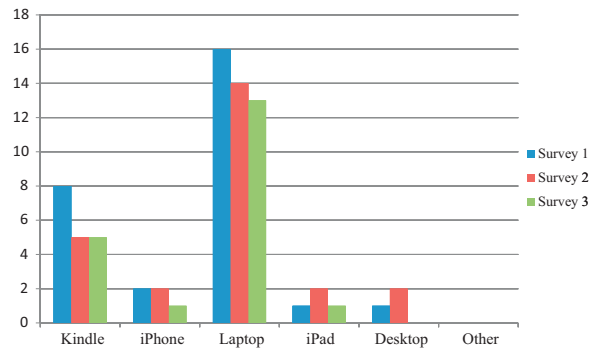


Figure 2. How do you access online texts?.

news issue, and the ability to quickly look up an unfamiliar word or person mentioned in the news article. Most chose the same preference for each survey, though one respondent moved from print to online, citing currency as the primary advantage. One student moved from print only in the first two surveys to both in the last, and while a peer moved from online only to both, indicating that each student gained a greater degree of flexibility in preference by semester's end regardless of their initial preference.

In terms of preference for reading books and essays, the results skewed towards print with the appearance of few who read in either format by the end of the semester. For those who indicated a preference for printed books, the perception of enjoying better reading comprehension and memorization of the text, nostalgic or “romantic” associations with books, and the ability to physically interact with the text by writing marginalia and making other physical alterations were the primary reasons given for this preference. Of those who chose “online” as their preferred method of reading longer texts, the Kindle was mentioned as the device upon which this reading would occur. Describing “hyper-readers” in 1999, James Sosnoski predicted that many people would come to prefer “computer assisted reading” to reading from printed texts, perhaps our findings point to a fruition of this prognostication (Sosnoski, 1999). With its book-like qualities, the Kindle was named by one respondent as “an acceptable substitution” for printed books while another revealed that a more ardent sense of attachment had grown over the semester: “I prefer reading [books and essays] on the Kindle now.” (Figure 3).

2.4. Classroom experience—Students

Students’ comments in surveys and focus groups about the classroom experience with the Kindles tended to center on two topics that have also been observed by other researchers—finding specific pages (“locations”) in the text for classroom discussion, and taking notes. The difficulty in making annotations on a Kindle has been noted by Behler (2009) and Damast (2010) while Young (2009) explored readers’ dissatisfaction with using a progress bar in place of page numbers. A typical student comment was, “It is much easier to flip to a certain page in a normal book.. finding pages in the Kindle takes more time..” Our standard practice in class was to use Kindle location numbers to refer to

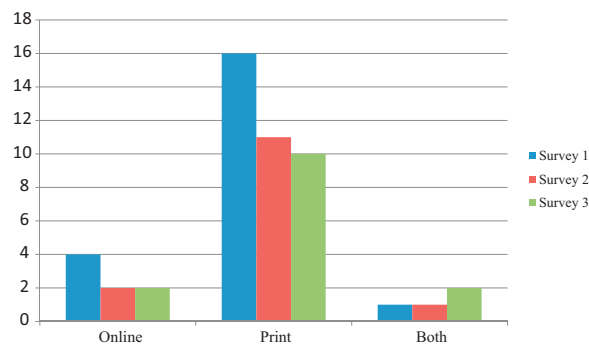


Figure 3. How do you prefer to read books and essays?.

specific passages (a Kindle software upgrade mid-way through the class, which was supposed to provide page numbers in addition to location numbers, did not seem to reach all class members). To reach a location, each student would open the text, use the “menu” command, and navigate to the “go to” screen. Then she would type in the location number, using the screen-based keyboard, and finally go to that location. This multi-step process could feel slow, especially since the keyboard is not ideal for typing, even for students adept at using smartphones. One student remarked, “My least favorite part of the Kindle has been the size of the keyboard. I am a larger person and I find many times I hit multiple keys at once.” Issues of finding the same page or passage can occur in classes using print books as well, especially if some students are using alternate editions of required texts, so these kinds of problems are not exclusive to e-book technology, but they were noted by most students. Possibly there are greater expectations of speed and accuracy when using digital technology than using a print book, so perception of slowness may be an issue in addition to actual slowness.

Most students did not take notes in class using the Kindle, although it does allow one to highlight passages and add notes. Instead, the typical class saw a majority of students with the Kindle in one hand, making notes on paper with the other (a few took notes with laptops). Taking notes during class without writing in a print book was one of the major concerns the students had when the Kindles were introduced. On the first day of class, one student asked, “I just write in the margins—what am I supposed to do?” These concerns persisted throughout the semester, even though many students seemed to develop new note-taking techniques readily. In fact, some students described concern about the loss of their old note-taking methods while simultaneously embracing the highlighting and notes features of the Kindle. The same student wrote, in survey two, “I like being able to highlight and take notes, and view those portions in “Clippings.” I think the latter is my favorite part about using the Kindle”; and “I also like to write in margins and dog-ear pages (my dad would die if he heard me say that!) and flip back and forth between passages. I can’t do that with a Kindle.”

2.5. Classroom experience—Librarian

From the perspective of the embedded librarian, the Kindle was a successful classroom tool. At the most basic level, every student had the day’s text with her and was able to navigate to the sections under discussion in a reasonable time. At the second class meeting, the instructor suggested we read a passage from the work being discussed aloud, and we took sentences in turn going around the room (not mentioning that this was an indirect test of Kindle fluency). Every student had gotten the text onto the Kindle and was in the right place within the text. Only one student commented in surveys about trouble getting texts onto the Kindles, and several students noted that it was fast and easy to get texts, easier than going to a print bookstore. Students were fairly open about sharing Kindle tips, and if the librarian saw a student using a new feature of the Kindle that might be useful, she mentioned this aloud to the class, as for example when she observed a student who had changed the orientation of the text display from vertical to horizontal when we were reading poetry by Walt Whitman. The orientation change made it much easier to read these poems, as it allowed for longer lines and less wrapping. Any technological problems that arose (i.e. broken Kindles) were addressed immediately in class; technological and administrative issues with the project are discussed in more detail below.

Several classroom moments were made possible by having a Kindle and would not have been possible—or certainly less likely—using print books. During a discussion of Annie Dillard’s (1974) *Pilgrim at Tinker Creek*, we mentioned an apparent biblical reference, to the concept of “praying without ceasing.” A student who happened to have downloaded a text of the Bible onto her Kindle was able to search the Bible text and find the original quotation for us (1 Thessalonians 5:17), and read it aloud. A second example was more deliberate on the part of the instructor: he asked the students to search the text we were working with, John Muir’s account of walking across Georgia in 1867, for one word of their choice. We then discussed how many times and where the word had appeared in the passage, and discussed how the search feature of the Kindle might allow a new level of analysis of language or the tracking of themes and motifs throughout a text.

2.6. Classroom experience—Professor

Teaching with technology is a constantly evolving art, and the rate of change, if anything, is increasing. At the most basic level, the Kindle was a useful tool for delivering content to students: the near immediacy of delivery of

texts, whether novel, anthology, or essay, allowed for a wonderful flexibility and near spontaneity seldom possible in the classroom, and the constant access to all the texts for the course was a definite benefit. The instructor shared the student's frustration with the navigation of the text on the Kindle and hoped that my fluency with navigation would improve over time, but in truth it did little if any. As a tool for investigating a text, particularly in the classroom, for moving about in a text to follow a theme, for example, the Kindle fails. In this particular experience, the loss of the cognitive mapping that accompanies the material text (i.e., the sense of where something is, the thumbled page and marginal note) created a kind of disorientation and a sense of distance from the text. Nonetheless, the new possibilities for investigating a text that emerged occasionally from the disorientation were quite exciting. Electronic highlight, annotating, and especially the searching possibilities offer great promise for the student's individual and communal experience of the text.

To maximize the benefits of the Kindle in the classroom, the instructor regularly offered brief tutorials or simple tips for using the Kindle and asked the students to share their successes and failures as well. The instructor reminded them of the uses he thought pedagogically beneficial, e.g., the access to highlights and annotation of the Kindle website and the more fluent search capability on the Kindle app for the laptop. In sum, what began as a common tool for content delivery, primarily for reading, evolved into a fairly idiosyncratic set of extensions of that tool that assisted study, writing, research, and testing (including the Kindle app for the iPad, for PCs or Macs, the kindle.amazon.com website, handwritten notes pointing to Kindle locations, printed pages of Kindle highlights and annotation, etc). We take for granted how to use a material book; the disorientation and disruption caused by the e-book or e-text more generally can be both a stumbling block and a possibility.

Daily life of the classroom with the Kindle was only modestly different from that with paper texts. Students were regularly assigned readings and were asked to prepare for class by writing about the texts in an online forum; by almost all accounts, including the instructor's, work outside of class was little affected by the Kindle, save for the immediacy of delivery noted above. In class, neither he nor the students needed to consider which texts to bring to class as all were always with us. As the class was relatively small, we still had the opportunity to sit in a circle; at the beginning of the term, we would all sit with Kindle in hand to discuss the texts or, as noted above, to learn a bit more about navigating the text with the Kindle. Anecdotally, the instructor said that class conversations were no more or less insightful than they would have been had everyone read the texts in paper format.

3. Reading and writing experience

3.1. *Reading with the Kindle—Student perspective*

Many students reported a difference between their reading experiences with the Kindle and with a print book. A few preferred the Kindle, but many were frustrated by it, especially because they had trouble adapting their existing reading habits and expectations to the new format. Students who preferred reading on the Kindle mentioned the ease of having the Kindle with them at all times, and the ability to read while doing other activities in which a book would be cumbersome. Several students used their Kindles to read while exercising, writing, "I am more likely to read while doing things like exercising or lounging somewhere where it is uncomfortable to hold a book." In a somewhat surprised tone, another student remarked, "Reading is almost more enjoyable because of the weight and size. Books can be huge and bothersome." A few students were also apparently heavy users of the text-to-voice feature of the Kindle, noting that having the Kindle read out loud to them was useful when they were exercising, having trouble with focus, or tired. These students made comments like, "I love the fact that the Kindle can read to you. I use this feature all the time," and, "My favorite part about using the Kindle is that it reads to me if I'm too tired to do it myself!" A few students also mentioned the dictionary feature of the Kindle—the ability to highlight words and see a dictionary definition automatically at the bottom of the page—as making reading easier for them. One such student wrote, "I used to underline words I didn't know then look them up later or forget to. The Kindle allows me to do it right then." Not having to interrupt the flow of reading as much to determine the meaning of an unfamiliar word—or not simply skipping over it and losing some of the meaning of the passage—was a bonus for some students' reading experiences.

For students who had difficulties with reading on the Kindle, the most problematic feature was usually the lack of physical cues to their location in the text, and a resultant feeling of disorientation and inability to sense how close they were to being finished with a chapter. Anne [Mangen \(2008\)](#), writing about the "haptic immersion" we experience in reading printed material, contrasted this with the divided attention we have in reading digital texts: "The reading

process and experience of a digital text are greatly affected by the fact that we click and scroll, in contrast to the tactilely richer experience when flipping through the pages of a print book” (p. 405). Many students were used to estimating the length of readings based on page numbers, and made statements like, “I like to see how long passages are before I read just to gauge what I’m doing and this is completely out of the question with the Kindle.” Another student explained, “I sometimes like to know how far along I am in a chapter. Gaging whether or not I can read a certain section in a certain time is a must.” Students who have to budget their time for reading as they balance their homework with other responsibilities found the lack of page numbers a problem. While the Kindle displays what percentage of a book has been read, there is no such feature for individual chapters, and there was no easy way to the length of a given reading assignment was without paging through the entire thing. On a practical level, being frustrated, for some, was just one symptom of a more profound feeling of disorientation.

For a few students, the lack of physical orientation to the text seemed more deeply problematic. Their relationship to the texts seemed to depend on visual memory for passages, so the lack of stable page layouts for a text in the Kindle was disorienting to them. Such students wrote comments like, “My least favorite part of the Kindle has been my not being able to orient myself within the space of the book. This problem may sound a little weird, but a lot of times when I’m reading I remember where passages are by sight. When it comes time to write a paper or discuss in class, I just flip through the book until it looks familiar,” and “I am usually able to return to important passages in the book using my visual memory, and this is next to impossible with the Kindle. I sometimes feel very lost within the text while using the Kindle, as I am unable simply to flip back to previous passages.” One student lamented, “I never know what page I’m on!” One student probed more deeply into the feeling of alienation from the text the Kindle provoked in her:

It is difficult to remember where things are. It is even hard for me to distinguish separate chapters. The sensory experience is so similar for everything. The font is all the same, the thickness of it never changes; there aren’t real page numbers.. or pages to see and feel. [. . .] I think the fact that everything is standardized with the Kindle cheapens my experience, makes it less memorable.

Another student also described how a physical manifestation of a book made her feel connected to the text: “I personally feel closer to the text when it is in print versus on a screen just because I am free to write or doodle or fold pages or skim sections, look ahead, etc.” For some students, the physicality of a print book is an important part of feeling like the text is real or significant to them.

These students’ concerns about connectedness to the text via physical cues raise larger questions about reading digital texts and issues of focus, comprehension, and retention. These issues have been explored in Rebecca Dawn Baker (2011) who studied reading comprehension in college students using e-readers and printed text. She found no negative effect on reading comprehension using an e-reader versus print despite her some subjects’ opinions that they would not perform as well reading from a digital text. Similarly, while Theirry Morineau, Blanche, Tobin, & Guéguen (2005) found that their subjects were less able to use visual cues in recall of a particular place in an e- text when compared to a print book, “The results obtained show that the function of encoding knowledge is comparable to that which occurs with a paper book, thus permitting a similar level of comprehension of the information” (p. 346). To learn more about what our own students experienced, we asked:

Researchers have speculated that the experience of reading texts on a screen differs from reading print texts (i.e. ability to focus, reading comprehension, retention, etc.) Please comment on your Kindle experience in this context.

Several students wrote that they saw no difference between reading on the Kindle and reading in print, like the student who wrote, “I haven’t really noticed that much difference between reading text on the Kindle and text in print. I think the fact that the Kindle doesn’t have a backlight makes the experience more similar to reading in print than a computer or other backlit screen.” Others even noted that they found features of the Kindle improved their focus. Those who had the Kindle read aloud to them, as discussed above, perceived that the Kindle could improve their level of focus and comprehension. They made statements like, “I believe my reading will be benefited by using a Kindle, for I stay more focused as I read along w/the audio option,” and “I felt that I can focus better when I have the actual text in front of me. However, at times when I found it difficult to focus, I had the Kindle read to me which helped me pay attention.”

Others, however, perceived a diminution in focus when reading texts on the Kindle. They answered this question in less positive ways, including:

I definitely experienced this difference in my reading. My brain is trained to pay close attention to words on a page, while only skimming the words on a screen, and it was impossible to retrain it in a semester's time. I had to make a conscious effort to make sure I was reading and retaining the information on my Kindle. [and] I found that I had a shorter attention span reading on the Kindle and that it was much harder for me to absorb the material that I was reading. Because, for me, digital texts are associated with things I can skim, like news posts, blogs, forum postings, etc., I couldn't associate the need to really pay attention to every word I was reading.

For these students, their existing habit of reading short texts on a screen spilled over into their attempts to read longer, more complex texts in Kindle book format. Several students explicitly acknowledged that this habit of reading was one that could be broken, with “retraining” of the brain to associate Kindle e-books with the kind of sustained and concentrated reading they had previously associated with print texts. Because this semester was almost every student's first experience reading literature on a Kindle, such new reading habits did not have time to fully develop for each student.

3.2. *Writing with the Kindle—Student perspective*

Those students who felt disoriented in the text when reading on the Kindle experienced many of the same feelings when it was time to refer to the text when writing a paper. These students felt that they had trouble finding passages they wanted to cite or discuss in their writing. Other students embraced the features of the Kindle that allow users to highlight or bookmark and annotate passages, and search for specific words or passages. These students described improved efficiency in writing papers, and felt that they saved time and effort by having their citations already organized and already available in digital form so they did not need to be re-typed. Several students were a bit apprehensive about how they would be able to annotate the text when the class began, a worry exemplified by the student who wrote, “I think not being able to write right on the pages my thoughts and comments will slow down my writing until I figure out the equivalent of doing so with the Kindle.” Those students who figured out a writing workflow for the Kindle felt that it “save[ed] pre-writing time” and “it [was] easier to find quotes through the Kindle.”

Several students mentioned the highlighting, annotations, and “My Clippings” feature (which allows the users to access their highlighted passages and annotations online, for easy cutting and pasting into other documents) as favorite features of the Kindle. Students remarked, “Favorite part: being able to highlight and go directly to what I highlighted. It keeps my notes in neat legible order,” and, “I like being able to highlight and take notes, and view those portions in “Clippings.” I think the latter is my favorite part about using the Kindle.” It is not clear how many students did much annotation using the keyboard on the Kindle; as discussed above, during in-class observation most students seemed to be taking notes on paper. It is possible that some students highlighted passages in the Kindle, and then added their annotations on paper as well. The bookmarking and highlighting features were introduced early in the semester in class discussion, and the ability to bookmark, highlight, and annotate passages came up in class in passing on a fairly regular basis. “My Clippings” was demonstrated as a ‘Kindle Moment’ in class on the screen early in the semester, and we revisited the topic as the due date for the first paper approached. Even so, a few students did not seem to avail themselves of this feature. In the focus group, at least one student mentioned finding online versions of the texts to copy and paste quotations into a paper, and one student mentioned in passing, in the final survey, “Maybe a bookmark feature would be cool.” Highlighting passages, with orderly notes about the passage, helped the students when it came time to write papers.

Another very popular feature of the Kindle was the search functionality. During an in-class exercise searching a text for uses of a single word to demonstrate this feature, several students considered it a favorite facet of the Kindle: “My favorite part of the experience is how easy it is to search for a certain word or phrase in the text. This saves a lot of time not having to scan a text for a certain passage.” This feature was especially useful when writing a paper: “The biggest pro is the search function. When writing a paper and looking for something you remember but can't quite pinpoint, you can find it instantly on the Kindle. It also helps when you're looking for quotes by theme, or keyword.” On the other hand, at least one student felt the search feature promised more than it delivered, and could not make it work to find the passages she wanted because “sometimes words rephrase themselves in my head, so I cannot find them in this manner.”

Having multiple texts on one device was a benefit when writing for some students, but a liability for others. One student wrote, “I believe that my writing has been slightly affected in a positive way because of the Kindle's ability to

go back and forth and reference and compare and contrast other texts while also focusing on a specific one.” It seems likely that this student navigated through the various texts using the My Clippings feature online, which allows one to look at highlighted passages from multiple texts simultaneously. It is also possible to do this on the Kindle, if one looks at bookmarks from the Home page rather than from within a specific text. Another student did not seem to have figured out how to navigate across texts very well, and was frustrated by the inability to place two texts next to each other on the Kindle: “while trying to write a paper comparing two passages from separate works, it becomes impossible. I have the two separate books, but they’re in the same physical space, so I have to seek out a different copy of one of the books.” In general, those students who struggled with disorientation from the book as a physical object when reading on the Kindle seemed to also be less likely to embrace the technological features of the Kindle in the writing process.

The question of how to cite sources in a paper when the sources were Kindle e-books came up very early in the semester, when two students who were using their Kindles for readings in other classes had assignments coming due. The standard citation style guide for the UGA English department is MLA, which does not explicitly cover Kindle books in its most recent edition. Online searches found some discussion of appropriate citation style for Kindle texts, but no official pronouncements, so the instructor and the librarian jointly developed a class standard for citation of Kindle texts using location numbers, and counseled students who wanted to cite Kindle texts in papers for other classes to discover their professors’ preferences in advance. No students expressed concern about citation style for Kindle books in the surveys or focus groups.

3.3. Papers, final exams and course evaluations -Professor’s perspective

Though direct comparison with student’s work using print materials is beyond the scope of this study, assessment of the students’ work shows no dramatic benefit or liability from the use of the Kindle. In sum, there were no markers of the use of the Kindle in the papers or presentations that the students offered. The instructor found the quality of the work to be on par with other similar classes, the work varying with the energy, experience, and inclination of the students. The magnifying glass of the final exam did show the variety of experience with Kindles that has been noted above. The final was given in a computer lab so that students could take advantage of any of the Kindle related technologies as well as the Kindles themselves. The final part of the exam was an essay for which students could draw on any resource. Those most fluent with the various search technologies—particularly notable was the use of the Kindle app for laptops—had a real advantage in finding supporting examples in a short period of time. Thus, some of the exams did seem to offer richer supporting details because of the technology. This fluency with technology in the final exam was the one example of improved student performance because of the Kindle. In grading of papers and exams, the search capability of the Kindle once again allowed the instructor to check more easily the passages the students were referring to in their work. A few students noted the Kindle study in the course evaluations, simply appreciating being part of forward-looking pedagogical research. None noted either benefit or liability in the use of the Kindles for learning. Such an absence is probably a sound marker of the actual usability of the tool: no one complained.

4. Technological and administrative issues

The embedded librarian gave each student a loan package that included the Kindle, the short introductory pamphlet, the USB cable, and the plug end allowing the Kindle to be charged from an electrical socket, all bundled into a soft-sided case. We assigned each Kindle a number (KIN001, KIN002, etc.) and generated barcodes for each set of materials, barcoding the Kindle, booklet, cord and plug (the case was fabric and did not offer any surface to attach a barcode). On distribution the students signed for the five items they received, and included their student ID numbers, telephone numbers, and email addresses for ease of communication.

Students who added the class late and missed the initial Kindle distribution were asked to come to the librarian’s office to sign out a Kindle and receive a basic orientation to its use. Students who dropped the course mid-way through the semester were asked to return their Kindles as soon as they announced their intention to drop. There were minor logistical difficulties as students tried to find time in their busy lives to drop the Kindles off at the librarian’s office; in some cases persistence was required to remind them to do so.

At the end of the semester, we collected the Kindles at the final exam, which was scheduled late in the exam period and was the last requirement for the class. Many students used their Kindles during the essay section of the exam, and turned them in at the end. A few students neglected to turn in a piece of the packet; most often lost or forgot the

pamphlet and the plug end; students had a tendency to leave them in the wall socket or lose them. One student did not turn the Kindle in at the exam, as she was in a rush to go to another exam, and subsequently forgot to return the Kindle before leaving campus; the Kindle was returned by FedEx at the student's expense. Given the pace of the end of the semester and students' level of distraction, retrieving the Kindles at the final exam was a good choice.

The most problematic technological and logistical aspect of the Kindles was the fact that several became damaged through the semester and needed to be replaced. A total of five Kindles became unusable over the course of the semester, out of a pool of fewer than twenty-five. In most cases what appears to be a malfunction of the e-ink occurred, creating lines across the screen and making it impossible to read on the Kindle. In other cases, the Kindle simply went to sleep and would not wake up. We requested students to report any broken Kindles as soon as possible. No student whose Kindle was damaged reported any insight into the problem—there were no confessions of dropping the Kindle or throwing it across the room or evidence on the exterior of the Kindle that physical trauma had taken place. Some screen damage incidents might have occurred due to pressure on the Kindle from other objects like heavy books in a backpack; in retrospect, a hard-sided case might have protected some Kindles from breakage.

When a student reported a broken Kindle in class, the librarian attempted to troubleshoot (some Kindles seemed frozen but had simply exhausted their charge; others got “stuck” on a web page, but could be made to continue working by rebooting). If the problem could not be solved by the librarian, the student turned in the broken Kindle and was immediately given a new Kindle (this happened often enough that the librarian began bringing an extra Kindle to every class, to be prepared). The student could then unregister the broken Kindle from her Amazon account and associate the new Kindle, and would retain access to purchased texts, bookmarks, and notes. If the student had loaded PDFs or music files, those needed to be re-loaded. Thus, from the student perspective, Kindle breakage was only a minor hassle. No students commented in surveys about breakage, and the only one who complained in person was the student who had two Kindles break in quick succession.

The Library Learning Commons at the Miller Learning Center began a Kindle lending program for its patrons at the same time this study was conducted. The Learning Commons lends laptops and iPads and wanted to add Kindles to the offerings as a way to get an idea of their reception and to learn more about how a lending program for e-readers would work. Issues regarding legality of lending texts to multiple patrons has been an issue for some schools ([Haddock, 2009](#); [Oder, 2009](#)), and this was part of the reason administrators decided to lend the Kindles without content in addition to a desire to not get into a guessing game over what patrons would want to read. Kindles are loaned to students without any content for a period of twenty-eight days, which is the same length of time a student may check out a print book.³ Students may load books of their choice on the device, paying for any texts from their personal Amazon account. After the Kindle is returned, the device is reset to wipe any personal information, but the student may still access the texts she purchased via other devices.

Kindle breakage was more trouble when it occurred as part of the lending program. The one-year warranty at Amazon covered damage to the Kindles, but returning the device was not as straight-forward as individual owners experience. Because each Kindle was registered to the student's account, rather than to an institutional account, we needed both the email and billing address of the last person to have the Kindle plus the serial number in order to initiate a return. The Kindle 3.0 does not have the serial number printed on the outside of the device, so until we knew we needed that information it was nearly impossible to retrieve from one that had been broken. Now, we have included each Kindle's serial number in our database to help make returns easier. Once this information was in hand, the lending program administrator could call Amazon's customer service line to initiate the return and, in most cases, had a new device within two days ready to go back into circulation. From this experience, we learned that the program administrator should:

- Set up an institutional Amazon account using an and corporate credit card (the card will not be charged);
- Create a database of each Kindle that includes the serial number and MAC address of each device along with the numbering system used by the loaning institution;
- Keep loan forms on file in case you need to contact the last person to have checked out the device; and

³ Due to the popularity of the program, we added to our loan pool to bring that number to twenty Kindles. We also shortened the loan time to two weeks in order to keep them in circulation at a greater frequency.

- Create clear check-in guidelines for resetting each Kindle to its Factory Settings in order to ensure the device is cleared of any personal information.

Despite the administrative hurdles in offering Kindles for loan, the program has proven to be a success. At almost all times, all ten Kindles are out on loan with people waiting. Patrons responding to a survey have stated they prefer reading e-books on a Kindle rather than on a desktop or laptop computer. One respondent noted that the Kindle is welcome in the classroom, where other technologies are not. As the students in our study noted, the lightweight Kindle makes bringing multiple texts to class much easier and the ability to have instant access at all times via multiple devices (i.e. Kindle, iPhone, laptop) is something today's student has come to desire.

5. Conclusion

Though the real differences in student and instructor performance may be negligible, many students expressed a sense of nostalgia and romance about reading from the printed page while at the same time enjoying the convenience of downloading digital texts. For example, one student recalled enjoying the sensory experience of the book, something that is not present using an e-reader: "I feel in love with books because of the feel they had in my hands and the smell they have. Reading books online or on my Kindle do not leave me with the same feeling." Other students made similar comments about a book's tactility or smell and the way they physically interacted with the text by creasing pages, writing in the margins, and holding the book as being important to their reading experience. As we have described, creating a palimpsest on a Kindle with one's own notes is difficult. Perhaps what these students are describing is wanting to see the evidence of their mark on the text—proof of their physical, intellectual, and emotional engagement with the book that moves the object from being a generic container of someone else's thoughts to something which co-mingles the ideas of the reader and author.

Even in the short period of time since our study was completed, e-book readers have rapidly evolved and show much promise for addressing the stumbling blocks experienced by the class. As if in direct response to the issues we encountered, ubiquitous touch technology and better tools for highlighting, bookmarking, and annotating are emerging. The rapid embrace generally in our culture of touch pad tools, particularly for content delivery, suggests that our students will be as fluent with e-book readers as they are with smartphones in short order.

Still, technology prognostication is a casino bet, with far more losers than winners indeed. We as professors and instructional librarians would be wise to expect and even encourage new tools in the classroom; the disorientation that accompanies these evolutions is often paired with new and valuable possibilities. Our study revealed that while our students are using digital texts, they are not completely ready to leave printed books aside. Instead, they prefer access to materials in multiple formats, choosing e-readers for some cases where its portability is an important attribute and printed texts where the ability to make notes on paper is the aspect of the format that is most important. Perhaps in this result lies a hint of the next age of text in the classroom, the emergence of an ecology of reading devices for various needs at various times.

Appendix A.

Kindle IRB Proposal documents

As part of the *Kindle in the Writing Classroom* project, researchers at the University of Georgia would like to study how the experience of reading a given text on an e-reader is (or is not) different from on a printed page; investigate how the dynamics of classroom discussion are (or are not) altered with use of Kindles; and explore how students learn differently when working with a digital text in the literature classroom. Insights gained by the researchers will allow them to develop and share teaching strategies for working with digital texts in the classroom and for supporting the conduct of research using digital texts. No information made available for such research will be personally identified. If you are willing to participate in online surveys, focus groups and have your work included in this general research archive, please read the following consent form and select "I agree to participate in this study". Your participation will be of real and lasting value to the University community.

Consent Form

I agree to participate in the research titled *Kindle in the Writing Classroom* which is being conducted by Caroline Barratt (Director, Miller Learning Center Library Commons at the University of Georgia, Ron Balthazor (Instructor,

English Department at the University of Georgia) and Phoebe Acheson (Librarian, University Libraries at the University of Georgia). I do not have to take part in this study; I can stop taking part at any time without giving any reason, and without penalty. I can ask to have my work removed from the research at any time.

The reason for the research is to study the applications of digital texts and the Kindle that I will be using in class this semester and will analyze the ways that an e-reader can be used to enhance student classroom experiences, research and paper composition.

The benefits from the project are as follows: the information developed from this study will allow instructors and administrators in the English department and Libraries to develop appropriate and efficient teaching strategies to enhance student classroom experiences, research and paper composition. Information and experience gained by the Libraries in supporting the Kindle (and e-book readers generally) will be broadly applicable, as the entire University community moves towards the use of e-book readers and related devices for research and scholarship.

If I volunteer to take part in this study, the procedures are as follows: I will be asked to participate in three online surveys (which will take 15 to 20 minutes to complete), one or two focus groups (approximately an hour in length), and markup several sets of essays in the class using <emma> (this will be done regardless of participation in the study). I will also allow the researchers to study my writing, including essays, student-teacher markup, chat room logs, bulletin board postings, and final projects. My participation in the project will take place within the course of the current semester.

No discomforts and risks are expected from the procedures. My participation or non-participation in this study will in no way affect class grade. There are no direct benefits to the participants.

At the end of the semester, I will have the option to allow my work to remain in <emma>, identified only by my student identification number and my <emma> login name. Other researchers will use the work archived on the <emma> database. However, I can request that research on my writing end at any time.

Any information that can be identified with me will remain confidential and will be disclosed only with my permission or as required by law.

The researchers will answer any further questions, now or during the course of the project, and can be reached by telephone at 706-542-6196 or email ccason@uga.edu.

My selected response below indicates that the researcher has answered all of my questions to my satisfaction and that I consent to volunteer for this study. For questions or problems about your rights, please call or write: Human Subjects Office, University of Georgia, 612 Boyd Graduate Studies Research Center, Athens, Georgia 30602-7411; Telephone (706) 542-3199; IRB@uga.edu

Please enter your name and type an “X” on the applicable line below.

Name:

____ I agree to participate in this study.

____ I do not agree to participate in this study.

Appendix B.

Survey and Focus Group Questions

Survey Questions 1 (Intro Survey):

Thank you for your participation in the *Kindle in the Writing Classroom* research project. This first survey is designed as a baseline measure to gauge your experience with and attitudes towards digital texts.

1. How would you describe your comfort level with new technologies (i.e. devices like the Kindle and computer use in general)?
 - a. Avid user, I am a gadget geek!
 - b. Very comfortable, I adapt to new technologies quickly
 - c. Comfortable, I feel confident when I have to use new technologies
 - d. Somewhat comfortable, I like a bit of help with new technologies and general computer use
 - e. Not very comfortable, I have some anxiety about new technologies and general computer use
 - f. Reluctant user, I try to avoid technology if I can
2. How do you prefer to read news stories and why: Online/In print

3. How do you prefer to read books or essays and why: Online/In print
4. How do you access online texts? Kindle/iPhone or other smartphone/laptop/iPad/desktop/Other
5. What advantages do you think there are in reading books using an e-reader like the Kindle?
6. What disadvantages do you think there are in reading books using an e-reader like the Kindle?
7. Do you think your reading and writing will be affected in any way by using a Kindle. If so, how? If not, why not?

Survey Questions 2 (Mid-term Survey):

1. How would you describe reading books on the Kindle as compared to reading in print? What has changed and what stays the same?
2. How well do you feel you comprehend the text in digital format?
3. How do you take notes?
4. Does the Kindle facilitate or hinder your learning process? Your ability to discuss the literature in class? Your ability to write about the literature?

Survey Questions 3 (Final Survey):

Thank you, once again, for your participation in the *Kindle in the Writing Classroom* research project. This final survey is to gauge your experience with and attitudes towards digital texts now after using the Kindle for a semester.

1. How would you describe your comfort level with new technologies (i.e. devices like the Kindle, computer use in general)?
 - a. Avid user, I am a gadget geek!
 - b. Very comfortable, I adapt to new technologies quickly
 - c. Comfortable, I feel confident when I have to use new technologies
 - d. Somewhat comfortable, I like a bit of help with new technologies and general computer use
 - e. Not very comfortable, I have some anxiety about new technologies and general computer use
 - f. Reluctant user, I try to avoid technology if I can
2. How do you prefer to read news stories and why: Online/In print
3. How do you prefer to read books or essays and why: Online/In print
4. How do you access online texts? Kindle/iPhone or other smartphone/laptop/iPad/desktop/Other
5. What advantages do you think there are in reading books using an e-reader like the Kindle?
6. What disadvantages do you think there are in reading books using an e-reader like the Kindle?
7. Do you think your reading and writing has been affected in any way by using a Kindle. If so, how? If not, why not?

Focus group questions/protocols

1. Introduction by moderator

Thank you for your participation in the *Kindle in the Writing Classroom* research project. My name is Caroline Barratt, and I am one of the researchers on the project. I will be taking notes on our discussion today, but will not include any identifying information. Please speak honestly on your experiences. We will simply share our thoughts on the use of digital texts in the classroom this semester over the next hour.

2. Feelings about e-readers

- What ideas did you have before the class about using Kindles in the classroom?
- Have your ideas changed as a result of using the device? How?

3. Impact on reading, learning and writing

- Thinking about your experience in and out of class, how does the Kindle facilitate or hinder aspects of your learning? Please be specific.
- As a reader and writer, how do you feel digital texts differ from print texts in terms of things like reading comprehension, engagement, and with your writing process?

4. Closing

Thanks again for your participation today. My notes from today's discussion will be added to our data set which includes the results of the online surveys you may have taken. If you have anything you would like to add to the discussion, please email me at ccason@uga.edu or call me at 706-542-6196.

Phoebe Acheson has a Master's in Library Science from North Carolina Central University and a Master of Arts in Classical Archaeology from the University of Cincinnati. She worked in Library Reference and Instruction at the Miller Learning Center at the University of Georgia until October 2011, and now works as the Grants Resource Librarian at the Public Library of Cincinnati and Hamilton County. Her scholarship has appeared in *Reference Services Review*.

Caroline Cason Barratt is the Director of the Miller Learning Center Library Commons at the University of Georgia. She is also a teaching librarian with research interests in emerging technologies in the classroom and learning commons as well as contemporary art and visual culture. Her scholarship has appeared in portal: *Libraries and the Academy*, *Journal of Library Administration*, *Journal of Neo-Victorian Studies* and in scholarly monographs.

Ron Balthazor, Ph.D. is an academic professional at the University of Georgia. He teaches composition and Environmental Literature and is the lead developer of the <emma> project, a web application for writing. His scholarship has appeared in portal: *Libraries and the Academy*, *The Journal of General Education*, *Readerly/Writerly Texts*, *Literary and Linguistic Computing*, and *ATQ*.

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