ATTITUDINAL RESISTANCE TO MOBILE TECHNOLOGY:

IMPLICATIONS FOR EDUCATION AND READING

by:

Christie G. Shields

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Project Approved:

Joddy Murray, Ph.D.
Department of English
(Supervising Professor)

Anne Frey, Ph.D.
Department of English

Manochehr Dorraj, Ph.D
Department of Political Science

<u>TABLE OF CONTENTS</u>

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INTRODUCTION

"Something we once loved, and love now, in the shape of a book. Maybe

eBooks are going to take over, one day, but not until those whizzkids in

Silicon Valley invent a way to bend the corners, fold the spine, yellow the

pages, add a coffee ring or two and allow the plastic tablet to fall open at a

favorite page." – Russell T. Davies in *The Hitchhiker's Guide to the*

Galaxy

Sentiments from author and screenwriter Davies exhibit the staunch resistance

toward electronic books (e-books) and are spread to the youthful audience that consume

his work. This attitude is hardly fathomable in a society where people stand in line for a

new iPhone every six months. Everywhere I turn, I am met with resistance to the idea that

e-books are a viable source for reading and learning, and I have yet to hear that one

convincing argument that legitimizes such opposition. I am left thinking that the only

viable explanation is fear. Literature is not a passive art, but rather, is living through

various cultures, and now through technology. The error too often made is the temptation

to restrict literature to print, and to limit the definition of "book" to printed text alone.

Technology offers the opportunity to explore literature, just as it always has, but now it

can be done in an instantaneous and interactive manner. Resistance to the use of recent

technology, such as tablets, e-readers, and smartphones, for reading and learning only

supports the idea that literature creates agency in the reader, and fear manifests at the

thought of such unbound agency. The time has come to address the resistance to

technology for intellectual pursuits and explore a world where electronic modes of ideas,

art and literature are free to inspire us in real time. Whether a reader for pleasure, a student or an educator, consumers of literature would readily benefit from the acceptance and implementation of mobile technologies within the Humanities. The resistance to technological acceptance for reading and education appears to perpetuate fear in generations of new readers. The failure to mitigate this fear and embrace mobile e-technology limits the evolution and expedition of readership and education where resistance repeatedly surfaces in user attitudes, assumptions about accessibility, and the lack of technical proficiency. The answer to the resistance of e-technology lies in the exploration of attitudinal obstacles, acceptance of technological devices and appropriate use of resources to create future opportunity in both readers and students.

Attitudinal Obstacles of Readers

Readers stand to benefit greatly from the changing scope of literature and technology and although the availability, cost, and portability improve with each passing year, it is people who produce and/or contribute to the greatest number of obstacles to the technology. Although such resistance has loomed over every literary innovation throughout history, the current opposition seems to be constructed by the user who uses the same technology for other purposes. The resistance is not to the technological advent of the tablet, but to using that tablet to read *Huckleberry Finn*. The book revolutionized the world, but also met opposition before it was eventually embraced and faithfully defended, yet it was not used for any other purpose but reading. The progression of print, painstaking and relatively expensive, had a profound impact on readership, literacy, and startlingly, agency. Surprisingly enough, the passing of time has yet to affect attitudes toward the progression of using technology for literary purposes. Of all the obstacles to e-

books and developing technology, it is the attitude of readers that tops the list. Just as before, readers are reluctant to yield to change and the growth, an adjustment that must accompany innovation.

Types of Reader Resistance

The user's resistance to e-reading borders on pure aggression. When asked about the potential that e-books have in our society, many readers immediately take a defensive posture. Studies as late as 2011 continue to report low numbers of people adopting an e-reading lifestyle. While some data suggests an increase in e-book readers, the study simply modified its demographic to include 16 and 17-year-olds, perhaps accounting for the modest increase over the previous year (Rainie & Duggan). As owners of tablet and other mobile devices soar and become increasingly popular, resistance continues when it comes to using such equipment for reading. The research targets various groups, ages and demographics, but a lot of attention is placed on the habits and desires of college students. Nancy Foasberg's survey, published in September of 2011, studied the adoption of E-books among college students and found that 23.5% out of the sample reported reading e-books, while 74% admitted they do not (111). Out of the 74% of the non-readers, 59.1% admit to being neutral or skeptical about new technologies (112). These numbers suggest a marked attitude toward not only the devices, but perhaps a discomfort with the new technology. Discomfort contributes to a skeptical attitude to acceptance of e-reading and is based on inexperience. For example, "students have reported difficulty browsing texts" and using annotation features, complaints that suggest an unfamiliarity with the device (Barron, 134). In the same study, those who did not use e-books responded to the drawbacks with drastically higher numbers than those with experience

(Foasberg, 117). The figures of the study directly indicate the issue of unfamiliarity with the technology. The respondents routinely list issues that are not reported by those familiar with e-books and the corresponding technology. The study showed that while the cost of e-readers or available texts are viable concerns with the experienced and inexperienced readers, other categories such as the cost of e-books and eyestrain, reveal how inexperience contributes to the responses and eventually to the attitudes constructed against the use e-books.

The most ambiguous of all reasons to avoid using mobile devices for reading remains related to tactile familiarity. In a 2012 study by Cassidy, Martinez and Shen, graduate and faculty users cited their preference of printed books. "I like e-books because they save me money, but if I had a choice, I like to have print books." (329). Quotations such as this further indicate the reticence toward e-books, and probing fails to clarify the reason for the preference. Some students simply claim that they like the feel of a book in their hands, the feel of the pages as they are turned, or the even the scent, but again, the concept of clinging to something familiar is hardly new. However, when it comes to technology with social or entertainment benefits, consumers flock to stores. For instance, the average person has become familiar with a desktop or laptop computer, but continue to marvel with the endless evolution of the computer model as it becomes smaller, faster, and smarter.

Readers often prefer familiar technologies over unfamiliar, a common trend through the ages. Speech, parchment, the printing press, and computer have all encountered resistance at various stages in their development. As much as language has been used to persuade, and at some points manipulate the minds of consumers, it has

been used to promote change, freedom, and equality, and without innovation, the masses would have never had access. Revolutions of thought such as the Enlightenment, the Reformation, and the Renaissance were all products of innovation in the field of literature (Howard, 55-56). With every technological shift has come a world of knowledge and agency that cannot be undone, and the current shift offers as much, if not more opportunity to the youth that stand to inherit the world.

Impact of Reader Resistance

Yet, the levels of resistance are inherited and stunt the growth and evolution of an entirely new generation that will continue to use e-technology related or unrelated to the pursuit of education. The attitudes of parents and educators directly impact the views and progress of the children that they mentor. "I would never teach my kids to read on an e-reader." This statement was declared by the vice-president of Half Price Books. As I inquired why, she had no real response besides, "That's how I learned to read (with a hardback book on my mother's lap), and how I chose to teach my kids." This logic supports the idea that she was indoctrinated by her parents, as to the appropriate methods of reading, and has passed that instruction to her offspring. It is acceptable for some readers to prefer a printed text to electronic, but to discourage the use of alternative technologies to future generations is limiting. Because the desire to engage with technology is superior to the desire to read print, an adolescent is less likely to willingly choose reading as an activity, unless specifically trained to do so. The defense of printed books seems to suggest that book readers fear that e-books will cause print to become extinct, but the irony is that few e-book supporters are vying for title as the sole delivery portal for literature and information. However, book loyalists become quite sensitive to

the prospect of e-readers becoming a popular and acceptable ways to consume information.

I expect resistance from members of older generations because print was their technology, but the young adult has become just as oppositional to e-books. A junior, Secondary English major from TCU attempted to convince a group discussing e-literature that the resistance is due to the fact that books are the oldest technology and people feel comfortable with the form. When the student was prodded about the differences in the technological progressions of literature and music, both similarly venerated, there was a short stutter and another implausible defense. The fact remains that a valid answer has yet to be identified as to the disparity in our ready acceptance of mobile devices for news, gaming and texting, but "there is one area of knowledge that is sacrosanct, seen to be both untouchable in terms of its utility and unimpeachable by its very nature … words found in books" (Gomez, 12). In other words, the value placed on printed text prevents the mode from being challenged. The print gives the text its meaning, a thought bewildering considering the text once existed in the mind of the author, among other locations before publication. However, the words are the same in books and e-books, so the "magic" of the printed text remains elusive or undefinable to those who love books most.

Issues of Access

One of the greatest advantages of mobile technology use amongst readers, and a source of contention continues to be accessibility. The portability, or ease of access to one's entire collection of reading material supports increased readership anywhere, any time with the flick of the wrist. Most readers can acknowledge that there has been a point when they forgot to bring reading material, or wished they had brought another, a

problem easily mitigated through mobile technology. The college student, literally shoulders the weight of his or her required library as he or she travels across campus; however, the average reader can attest to the limited portability of their favorite books as well. Sure, a book is entirely portable, but are 20, 100 books reasonably portable? How does that portability change when flying across country, the world? The advantage that e-readers and other mobile devices offer is the increased portability of a single device. As the availability of electronic texts continues to increase, soon readers may have their entire library installed on one device weighing only 1.44 pounds, or less. What's more, the automatic sync function, allows the user to resume reading despite their location or device and offers the voracious reader many options for reading on the go.

Three years ago, the presence of handheld devices was fairly uncommon in the classroom, but each year ownership increases, but at a rate incongruent with e-book readers, again suggesting an oppositional attitude to e-reading. The ability to access or afford the newest, most innovative devices is a valid concern for particular populations who may not enjoy the ability to spend on an e-device, especially more expensive, all-inclusive models like the iPad or other tablets, but the investment may indeed pay for itself. The expenditure for one semester's books may be less than the initial expense of a mobile device, and the device often pays for itself in the subsequent semesters. The increasing availability of wireless connectivity also negates a common misconception of limitation. Users may access free wireless connectivity at a number of locations including McDonalds, Starbucks and Barnes and Noble, not to mention the ever increasing pressures to create larger, free sources of community wireless hotspots (Kang). Wireless access allows users without mobile internet to access and electronically download books,

articles and other files to be used offline. Many schools and universities allow access to wireless connections for these purposes. According to a continuing study concerning broadband and wireless availability, even large percentages of low-income and non-white populations had abundant access to internet services; the only large disparity evident concerned the speed of the connectivity, which leaves room for continued improvement (Li, Lee & Gambhir, 12). This limited availability may impact connectivity concerns among those in areas with inadequate resources, but as with other issues cited, the ability to afford the hardware and access online material is only improving with time.

The issue of those with disabilities accessing equal use of technology is important, but not a concern exclusive to mobile devices. Most widespread technologies, including the book, do not account for those that will be challenged by the mode of the information. The blind reader will continue to employ the technologies afforded to their challenges like audio books or braille. The e-reader does currently address some needs for those with disabilities such as the ability to increase or change the typeface, brightness or contrast of the reading material, and newer models of e-readers have voice-recognition software and other accessibility innovations that can open applications and assist navigation of the e-reader. Depending on the device and model, there are available options to assist those with disabilities that most users never explore. For example, the iPad offers a variety of accessibility options such as voice over, the ability to speak notifications, and the ability to connect a Braille device for use with the iPad. Because users do not necessarily investigate all the available options, there is an assumption that the features do not exist. The embrace of the e-reader will not eliminate or change these obstacles or the attitudes associated with unfamiliarity. Unlike the book, the mobile

device opens formerly closed doors to those users often excluded. Without doubt, the accessibility will continue to improve as users provide feedback.

Issues of Technical Proficiency

Most of the attitudes that challenge the use of mobile technology for reading are easily mitigated. It becomes clear that many of the attitudes are the residue of previous experiences or the lack of technical proficiency with the new technology that truly limits the acceptance of e-reading. Many readers cite the familiarity with the codex as a deterrent to electronic reading; however, that level of comfort began as students were, at some point, instructed on the technology of the book. Early on in one's readership, he or she received detailed instruction on the technology of the printed text; training on finding and using technologies such as the table of contents, title pages and indices, all knowledge that one is born without. Soon, the reader finds the mode of a book invisible and is no longer challenged by its technological features. In contrast, although introduction of smartphones and tablets provide a mostly minimal learning curve, many users are unwilling to educate themselves on how to use e-readers while at the same time seem comfortable sending and receiving texts and email, or gaming. When it comes to e-books and e-reading, the learning curve appears to be too steep to navigate and users revert to old comforts.

Resistance to handheld technologies may stem from users with early experience having valid complaints, but it seems that the adage "once bitten, twice shy" applies to their refusal to return and reinvestigate the rapidly changing updates and fixes. This assumption perpetuates continued complaints that plague the use of e-books. The complaints that it is too difficult or impossible to annotate, highlight, or take notes

remains a barrier to users although many remedies have been produced to address such issues (Barron, 133-34). The already outdated iPad 3 and its iBooks application readily allows for simple annotation, highlighting and note taking on any given e-book. In fact, iBooks also allows the user to take a screen shot of selected material and email, share or copy and paste into a document. While some devices used primarily for reading may still lack the ability to copy and paste text, there are several ways to share the information, and the speed at which issues are addressed in patches and new versions challenge the continued complaints.

Several studies and polls suggest annotation is a considerable concern, especially for those in the humanities, but the most recent versions of tablets and e-readers provide various choices for completing this task as well. In the 2012 study of graduate students and faculty use of e-books, 40% of respondents listed annotation and note taking very important, while 70% agreed that they were somewhat important (Cassidy, et al., 329). The fact that these were listed as continued issues as recently as 2011, suggests that the users have either not investigated or revisited the capabilities of newer models or various devices. Furthermore, the frequent updates of available applications creates increased ability to annotate and utilize articles and other documents used in coursework. For example, there are many applications (apps) available for viewing and annotating pdfs, but as with everything, there is the good, the bad, and the ugly. One of the best, free apps is Branchfire's iAnnotate PDF, available on iPad. It offers more annotation tools than most users will ever find opportunity to use, and it will save, print, email and share the pdf with annotations intact.

Finally, among the most cited of reader complaints is the eyestrain associated with handheld devices, but again the evolution has progressed past this complaint. Users reading on mobile devices often cite issues with burning or dry eyes experienced as the eye begins to rest. Eyestrain continues to be listed as an obstacle to potential readers and their use of designated e-readers; however, in the Foasberg study, experienced e-readers reported concerns with eyestrain to be a drawback at only 28% where the other users indicated it was an issue at 61% (117). Does such a large disparity account for actual cases of eyestrain or could a portion of this sample be responding with borrowed impressions or other prominent attitudes? With the advent of E-ink which emits no radiation and contributes to clarity and readability, e-readers are becoming more analogous to printed text, easing eye strain (Barron, 133). The advent of hiDPI displays, or what Apple refers to as retinal displays, has increased the readability of on-screen text and decreased the strain on the eye (Thornton). The long term effects of the eye's continual engagement with computerized apparatus may continue to develop and undergo study, but to use eyestrain as a viable reason to avoid e-books cannot account for the use of the same apparatus for texting, gaming and surfing, not to mention the impact that reading print may have on eye sight as well.

The concerns attributed to e-books may have some validity; however, there will always be pros and cons to using new technologies. This has certainly been true of e-readers especially as e-books become more widely accepted and used, but the codex presents challenges as well. As with any technology, there is always room for improvement, innovation and the response to the user. At the introduction of print, literature was a social event that was shared aloud among a community, a sacrifice in the

age of individual readership, but the benefits of having a written text that can be referred to long after it is read makes up for such sacrifices. The once precious commodity of paper allowed for the printing of texts, but it is easily destroyed by water and fire. E-books offer many advantages that cannot be found in the bound text and share the same opportunity for improvement. One such advantage is search technology. The ability to conduct a search for a word or phrase opens up the text and aids with navigation in ways the book will never be able to accomplish. Using the e-book as a resource for the writing process is greatly enhanced with the revolutionary function, because the days of flipping through the pages of a book looking for that one piece of evidence are thankfully dissipating.

Another advantage is the built-in dictionaries that discourage the common tendency to breeze over an unfamiliar word while reading. To carry a dictionary alongside the source text detracts from its portability, a problem now addressed with technology. The new features such as dictionaries, search technology, and text to speech allow for readers to interact with the text in a deeper, more meaningful way. The ability to search across the text for similar themes or ideas presents an opportunity for fine analysis. Given the rapid improvement and addition of reading technology in the e-book, it is important to note that there is no call for the end of printed text, only the inclusion of electronic texts and the benefits they offer, along with the acceptance that each new technology requires adaptation and feedback. The impact of reader attitudes is often born and preserved in the place in which they learn to read originally, the classroom.

Attitudinal Obstacles to Technology in Education

Resistance to the use of mobile technology by the average student or in the classroom must be explored as the current school-age generation will never know a world without the smartphone, tablet, internet, etc. There appears to be a lack of encouragement to use these mobile devices to further education in particular divisions of education, particularly higher education. The continued struggles among U.S. students is evident in the perpetual fall in the worldwide rankings in the ability to perform in math, science, and reading. According to a 2012 study conducted by The Organization for Economic Co-operation and Development (OECD), the U.S. currently ranks 22nd out of 27 industrialized nations concerning high school graduation success (broadeducation.org). Of course, there are several proponents contributing to the dismal decline of U.S. education, but the exclusion of technology in the classroom may play an integral part considering today's tech-savvy student. While the studies document educational ranks of K-12 students, the implications of such data are apparent in matriculating first-year students. The youth of the current generation begin navigating complex devices such as the iPad long before they learn to walk and talk. There are games and learning applications available for babies as young as 1 year old. The advantages to this emerging user is financial, interactive, and the rapid improvement with which the technology is advancing. However, an obstacle to the unlimited opportunity facing these advanced technology users are the attitudes of the adult populations employed to educate and mentor them into the future.

Perhaps the greatest hindrance to the future educational achievements and goals of current students is the fact that educators are not embracing technology in the

classroom in the same way as the general population embraces it outside of the

classroom. Given the fact that so many educators are also participants in the same outside

uses of technologies (iPhones, iPads, etc.), why is that same technology excluded or

discouraged in many classrooms? The current technological controversy, whether or not

to employ handheld technology in the classroom and education, is far from new. William

Berkeley, governor of Virginia is quoted as thanking God in 1671 that "there are no free

schools nor printing, and I hope we shall not have [them] these hundred years; for

learning has brought disobedience, and heresy and sects into the world, and printing has

divulged them" (Howard, 81). Berkeley opposed the introduction of printed text and

schools, at least for the commoner on the basis that he believed it would corrupt their

feeble minds. Some educators may mimic, somewhat less dramatically, concerns of

corrupted or incorrect information when introducing mobile devices into their pedagogy.

Resistance in the Classroom

Educators that oppose inclusion of mobile technology in the classroom are quick

to offer distractions from learning as a primary reason. Students, too often, search the

web, navigate Facebook, Twitter, or check emails. Explanations tend to exclude the

possibility that students may simply be distracted because they are bored with traditional

lecture models. The world for the current student is moving at a rapid pace, and although

every era makes similar claims, the overwhelming connectedness of most individuals

outside of the classroom challenges the attention span in ways never seen before. Sitting

in a classroom that does not employ the tools of other genres yields a serious slow-down

and students may tune out. According to Phillip Barron, "Faculty noted that 'use of the

Kindle in class did not lead to the distractions that are typical of laptop use. Students

were not tempted to check their email, browse the web, or use the Kindle in class for anything except to refer to course materials" (Barron, 135). The validity of such a generalized statement must be challenged, especially as Kindle has been modified to include other functions besides reading. However, the employment of technology into the lesson and engaged conversation may indeed mitigate unrelated distractions, but ultimately it is the responsibility of the teacher to garner the attention of his or her students. Technology serves as a complimentary tool to a well-developed pedagogy that will allow a teacher to incorporate the student into the lecture by looking up related information and adding an additional level of interaction with the course of study. A 2005 study examining the uses of the internet found that "teachers indicated that computers have considerable potential for allowing students to discover or construct ideas for themselves" (Franklin, 9). Students always have and will fall prey to distractions. Before distracting mobile devices and the internet, teachers scolded the passing of notes in class, paper throwing, and clowning around. The advantages that new tools provide for the furtherance of education far outweighs the distraction theory and other attitudinal challenges to technology.

The simple fact is that mobile technology stands to assist in the creation of a world of interest on the part of young students such as those in school now, and some elementary, middle and high schools are noticing the difference. E-books offer opportunities and assistance to early and intermediate readers with their use of sound and animation, in ways that traditional books alone cannot (Chau). Many studies have reported early success in vocabulary comprehension and the enthusiasm to read among school-age children who are granted the use of mobile devices particularly for that use.

The idea that this enthusiasm is not quite spreading to the undergraduate and graduate level is surprising given all of the additional benefits, but the attitudes seem to be partially due to the early exclusion or limited access to mobile technologies. The current generation represented at the undergraduate level were the first of the wide-spread internet era, so this resistance at the collegiate level may dissipate as the newer generations graduate to this level. However, if the current college-aged population maintain their parent's objections to teaching their kids the technology, another generation will inherit the same limiting defiance. The failure to encourage students to use their tech toys for literature and reading, limits the chances the next generation will be readers.

Secondly, some fields may resist technology more than others. For example, fields in the Humanities tend to be more reluctant to incorporate new technologies than scientific or mathematical fields. There seem to be, somewhat, practical concerns facing the liberal arts; however there are also answers for every question. Once such quandary that the humanities are experiencing relates to several issues concerning the use of e-books as sources, such as citing and pagination. Due to the varied editions of digital resources now available, citing such sources have become more complicated. A literature class may contain twenty or more students each with a copy of an assigned work, but with the advent and popularization of e-technology a growing percentage of the class population may be reading and citing an e-book and because devices that support e-books differ, the ability to access the same or similar copy as the student also differs. The process of grading an essay and MLA or APA formatting may be more complicated for unfamiliar users, a concern easily addressed through training, policy or better digital

tools. Pagination becomes an issue if the typeface and size are changed for easier viewing making it difficult for grading and resource purposes. However, these issues are not new in the digital age and various e-book vendors are suggesting methods by which to standardize the pagination of e-readers. For example, many Kindle e-books have a location (loc) number which remains the same despite personalization of the page (Amazon). Some Kindle books also have page numbers that match that of a printed text with the same ISBN. Citation formatting is continually changing due to the use of the internet as a source and housing for research articles and other readily used research tools become digitized. The citation issues are easily remedied using similar strategies that have already been employed.

Access and Education

Returning to the issue of attitudes as it relates accessibility and the effect on technology use in academic circles, for some fields, the compulsion to set one's hands on the material somehow certifies the source's importance. Generations of researchers in the humanities have spent countless hours in the stacks of a library physically thumbing through potential sources that may or may not benefit their specific project, an exercise that may end up as lost time. The sanctity of an old volume or sliver of paper that has great significance placed upon it, has created an attitude of resistance to the new sources that are readily available and searchable. Evidence can be found in how faculty interact with undergraduate students versus graduate students. According a recent study, "faculty respondents reported a greater likelihood of recommending e-books to undergraduate versus graduate students" (Cassidy, et al., 329). Researchers, like Cassidy, et al., hypothesize that it is likely that faculty question the level of interaction of an advanced

researcher with an e-book. This may relate back to the earlier concerns over abilities to annotate and engage in active reading skills using handheld devices, but as mentioned before the technology has advanced and the ability to interact critically with e-texts is readily available and improving. However, some graduate instructors simply insist that there is a lack of graduate-level material available electronically, but given the results of current research, what would motivate the digitization of such texts, if professors are unlikely to encourage their use? The library of available e-sources is ever-growing, but the issue of supply and demand will certainly remain an issue as long as there is no widespread demand of the product (e-books). The issue of access often surfaces in matters of any new technology, in that demand creates availability. According to Kate Sandberg, as users, libraries, and the marketplace give in to the pressures of e-technology, it is imperative that "instructors who teach reading at the college level understand the theory and practice of academic online reading" (Sandberg, 89). It is inevitable that e-technology will continue to grow within the academic context and the prohibitive attitudes that persist will inhibit the growth of future academics.

Scholarly research and writing have already enjoyed the benefits of technological employment, and while resistance may continue to undermine research completed using the internet and mobile technology, the abundant benefits cannot be denied. Writing and research build on the ideas and discoveries of others and the ability to find information that will propel one's research to another level instantaneously furthers the objectives of the research goals more quickly (Collins et al., 77). Before, I mentioned the image of the diligent researcher navigating stacks of dusty volumes in search of pertinent sources that may take hours, days, months, or years. In the end, one cannot know if the information

will be used and if it is, in what way. The internet makes sources available either immediately or makes their locations known faster. Continuing digitization and the ability to search using keywords and phrases has granted unparalleled access and usefulness to a text. As the writing or research process continues, the need for additional information or sources will not impede progress in many cases. What used to take an exorbitant amount of time takes seconds through databases or search engines like Google Scholar. The convenience and availability of such tools adds value to busy academics who continue to participate in scholarly research alongside other commitments, making the resistance to e-literature and sources all the more questionable. The advantages of technology, specifically digital sources like e-books, should negate the continuing attitudinal objections to their incorporation in the classroom.

More impressive is the fact that the information is, often, instant regardless of location, making it possible for research and the base of knowledge to become more well-rounded and inclusive of a variety of subject matter and ideas. The research for my thesis includes studies from Australia, Korea, Norway, London and the United States, data consulted without any more than the click of a mouse. The ability to use global resources lends credibility to ideas that may affect the global community such as that of education, medicine, or technology. The interactive nature of the internet and emerging technologies allow researchers and scholars to contact peers and colleagues by email, social media, and video conferencing tools, like Skype. Scholars and researchers can also share their data and findings with audiences anywhere that online access is available, and in some cases present their work to students without ever leaving their office. The easy and instantaneous availability of information may lead researchers farther into questions

never considered before, and may help shape the answers in more fulfilling ways. In spite of the unprecedented access, researchers remain limited by their "preferences, preconceptions and even prejudices" (Collins et al., 78). The limitations and complexity of the card catalog and other older technologies are over as children born within the last five to ten years will never know the definition or purpose of a card catalog or how to research in a library. As e-books and other sources rise in popularity, seemingly unrealistic expectations develop. "Users are likely to make an assumption that, because an e-book is digital, it should transcend the physical limitations which necessitate single readership" (Cassidy et al., 329). Depending on the terms of an entity's digital rights, a library's e-book may only be available to one user at a time; however, the same could be said of a printed text as well. The advantage of the digital availability is the probability that it is available from another source and will not require delivery or transport from a physical location in the manner that a printed text would.

A common complaint for those questioning accessibility is, "Mobile technology costs too much." However, the financial benefits are undeniable as a mitigator to some of the attitudes opposing the viability of technology in the classroom. The educational systems of many U.S. states are currently experiencing major financial distress and education, funding is at stake. "More than 48% say they may have to eliminate or delay instruction improvements, such as updating textbooks, computers and science labs" (Luhby). E-books can offer alleviation and expand the possibilities for learning simultaneously. After an initial expense, the e-readers and e-books are a minuscule expense next to that of traditional learning materials. Since 1986, textbook prices have increased 186% and continue to increase at four times the rate of other consumer

products (Busnews.wordpress.com). Every new edition requires either an additional expense (often a higher price than the original), or an intentional disregard for the new material, which ultimately impacts education. By embracing e-textbooks, not only are new additions to published material easier to deliver, it would be cheaper and more responsible, not to mention offering the possibility for content providers to offer free information and updates. The publishers of textbooks would initially lose great profits, but the benefits to almost every other dependent of textbooks would dwarf that loss. Over the course of five semesters the financial savings to this e-text user has increased remarkably by purchasing, borrowing or renting e-book versions of the required texts. The increased availability of textbook rental in electronic form may also save money for school districts, parents and students alike. The ability to rent textbooks primarily benefits college students who are required to purchase extremely expensive texts that may or may not be viable to their future goals and may be reduced to bookshelf placeholders or sold back for a fraction of the purchase price. Newly printed editions of the same text often reduce used book options, and while profitable to the publishing companies that print them, educational profitability is failing.

In light of such failings and in an attempt to engage students in the learning process, many elementary, intermediate and high schools are implementing iPad loan programs for students. The inclination to embrace and utilize technology in the classroom hints at the inevitable direction that education is heading. The youth targeted by primary and secondary schools are proving what success that may be achieved by relinquishing dated pedagogies and resistance to engage the techno-student. High schools like Burlington High School in Boston, spent $500,000 out of their existing budget to

purchase iPads to be loaned to each student for the school year (Here & Now). The school replaced the purchase of traditional textbooks that quickly become outdated and fail to compete with the preponderance of information available on the internet. This model is being embraced in primary and secondary education all over the country and showing positive results, even among lingering resistance in higher education.

The economic benefit to both producers and consumers of electronic versions of texts used for education can, in itself, save large amounts of time and money, an advantage that responds the to the continued reticence of both students and educators. Because it is no longer mandatory to print every text, paper usage is reduced making the text cheaper to produce. As of 2010, the New York Times reported that the cost to produce and market a hardcover was $3.25 while an e-book is a steal at $.50 each (Books vs. Ebooks). For those readers that continue to prefer print versions, publishers may utilize print on demand business models to avoid excluding potential customers. The acceptance of e-books and handheld devices may create financial upheaval in the short term to the publishing marketplace, but there is also room for economic prosperity in the long term as the prices to produce continue to fall, and readers adopt e-books more readily.

Technology in the Classroom

It has been the experience of many students, including myself, that faculty and staff simply are not always familiar with the rapidly changing technologies of e-readers, tablets and smartphones. While there are exceptions to this rule, a good number include in their syllabi a prohibition of mobile devices such as cell phones, tablets and laptops, enforced by the dreaded "participation grade." The outright exclusion of this technology

directly impacts the level of information that will flow within that classroom at any given time and further instigates the perpetuation of technology resistance. This resistance affects both the student that sees no need to utilize technology (Cassidy et al., 2011) and the faculty who may feel more comfortable in their current models of instruction. Evidence in the classroom prove that the internet is a tool that may supplement lecture and other class activities, and such cases have been personally observed. The problem lies in the fact that long-time educators, especially those lacking interest in the progression of technology appear intimidated or lack comfort with the rapid evolution. Several of my college professors have no issue admitting that they cannot answer questions related to hardware or software issues, and demonstrate the lack of proficiency with the advanced resources available to assist their teaching. The lack of experience could explain the resistance to mobile technology and its incorporation into the curriculum, but the reticence associated with lack of experience must be faced, because at this point it is likely to be tension between the knowledge sets of educators and students. Such tension may be linked to the feeling that the technology evolves so rapidly and educators are either already overwhelmed with responsibility or fear their ability to appropriately incorporate new technologies into their classrooms. However, both teachers and students must willingly engage and participate with the technology, if for no other reason than to prepare future educators for their inheritance.

Young people are employing mobile devices for gaming and watching video in high definition (HD) and 3-D, in some cases. They receive information at a pace never before challenged and feel comfortable with their interactive worlds. The education system is just now attempting to take advantage of the interactive nature of technology

that has gripped the brains of the future, and why not? The ability to interact with classwork and reading is appealing to this new generation of super users. The instant availability of copious information suits the young users. The integration of instant information into their worlds since birth creates a continued need to access data instantly. The availability of instant information in mere seconds begs the question of whether or not the curricula require intense revision. Technology offers to expand the traditional subject matters by making them, more interactive, more fun, and more intellectually stimulating. Imagine learning science with interactive tools in a virtual space in addition to the expertise of an educator. Pedagogy stands to benefit greatly from mobile technologies, increasingly owned by a younger population, and future research will identify to what extent. So why so much resistance to it?

CONCLUSION

The largest opponent to the use of mobile technology both in education and for recreation is the reticent attitudes that fail to evolve as quickly as the technology. There is, however, a large disparity between the reluctance to use e-technology for pleasure (gaming, texting, and videos) and using the devices to read. To recognize and address any residual attitudinal resistance is to improve the progression of readership and education respectively. In the vast amount of research completed on this concept, a solid and unanswerable point as to why e-books are so feared is still elusive. I scan the campus and the other communities in which I participate and users are interacting with technology at virtually every moment, yet the passion with which e-books are debated continues. The resistance seems linked to strong emotional and tactile attachments to a technology that has enjoyed the spotlight for centuries. The book is a magical device that has burned its

value into the hearts of many readers; however, not every person is that voracious reader leaping with imagination and inquisitive nature. There are kids, teens, and adults that do not necessarily love to read, but they *need* to read, and mobile technology may just provide an interactive and familiar atmosphere in which to participate as readers, students and future educators to the public or their own children. Reading is at risk and there are many alternatives available, thanks to rapid innovation; however, literature is important as the portal to other worlds, ideas, and realities, and put simply it is necessary to the furtherance of knowledge.

The topic of mobile technology in the use of education and reading remains a rapidly evolving subject, on which plenty of research is needed. The research requires diligence as the implications of the frequent evolution is clearly seen in our resistance and unwillingness to adapt our reading habits and how we think and act tomorrow. The book can be loved for its words and meanings, devoid of coffee rings and bent corners, if only given an e-chance.

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ABSTRACT

There is a disparity between the acceptance of mobile technologies for pleasure and for that of education and reading. Where users of all ages will stand in a line outside of the Apple Store for the latest iPhone and use that new device for texting, navigating and playing games, there remains a negative attitude towards the same device used to read. The attitudes appear to lack foundation and have a foundation in fear; fear toward change, technical adeptness, and what an e-book means for print culture. The primary objections to using mobile devices for education center around aesthetics and misconceptions, somewhat based on prior experiences with early technologies. The impact such resistance has on future communities of students who know nothing but mobile technology are undeniable. The current and upcoming school populations were born into an online society with an iPad in their lap. To expect these technically advanced students to learn the same way their parents and grandparents learned is not only unreasonable, but naïve. The research has shown the benefits of incorporating mobile devices into a world along with printed books to create a richer environment for all readers.

Keywords: e-books, mobile technology, Kindle, iPad, reading, education, books