

Turn, Or Click? Considerations on the Adoption of a Digital Delivery System for an Extensive Reading Program

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Abstract

In the spring of 2016, the English for Liberal Arts (ELA) program at International Christian University (ICU) obtained an opportunity, through the Xreading scholarship program, to trial Xreading (a digital platform for extensive reading) in its extensive reading (ER) program. Firstly, this discussion looks at some of the current issues and viewpoints surrounding the potential effects of digital technologies on the brain. Next, an introduction to the Xreading digital delivery system is presented, followed by a focus on issues related to reading online or with physical books. The article concludes with some thoughts on the adoption of Xreading at ICU for the ER program, and on issues of online digital delivery systems and physical mediums for study texts suggesting that decisions should be approached with caution, with careful assessment of the purposes of the reading, and of the needs and priorities of both students and institutions.

In 2007, a presidential decree in Uruguay started the Plan Ceibal. This initiative's objective was to deliver a laptop to every child in the country along with free Internet access. In 2009, the last laptop was handed out and all 395,000 children in primary school grades first to sixth now had their own laptop. This kind of initiative and other ones around the world recognize the growing role of technology in the world today, and are working towards a democratization of access to technology as it continues to transform the world we live in, and play a greater part in our lives. The educational landscape is no exception. Technology in teaching has impacted on teachers, classrooms, schools, and learners in ways that could not have been imagined 10 years ago. Learners in today's classrooms are living in a digitally connected world different in many ways from the one most teachers grew up in. These learners are sometimes described using the term digital natives. This term was first used by Marc Prensky (2001) to describe the generations of young people who have grown up in a world connected by email and the

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Internet, while those who were born before this digital age, were described by Prensky as digital immigrants. The two terms have sometimes been interpreted to mean that digital natives were superior technology users. However, Prensky's (2013) intended use of the terms, digital natives and digital immigrants, was instead to advance an argument that students of today, the digital natives, hold quite different attitudes and ways of thinking when compared to digital immigrants. Whether we are digital natives or digital immigrants, whether we are skilled computer users or not, in the past 20 years, email, the Internet, and social networking have become a customary lifestyle for many. With the development and spread of the digital life style, one topic in particular has gathered considerable attention in the news, and in articles in popular science magazines and institutional research publications. That is, the effect of digital technologies on human brains, physical health, and emotional wellbeing. This has resulted in a rapidly growing number of articles on, and research into, the impact which the digital information age, in its various manifestations and applications, is having on our brains, bodies, intelligence, and emotions. For example, Twenge and Campbell (2009) have discussed the rise of narcissism in American culture, arguing that part of the reason for this growth can be found in the proliferation of social networking sites, where the emphasis is on how to look as good as possible and promote oneself to an unseen audience.

Regarding the impact of digital technologies on our brains, one perspective is offered by the neuropsychologists Chabris and Simons (2010),

The basic plan of the brain's "wiring" is determined by genetic programs and biochemical interactions that do most of their work long before a child discovers Facebook and Twitter. There is simply no experimental evidence to show that living with new technologies fundamentally changes brain organization in a way that affects one's ability to focus (para. 5).

Another viewpoint is offered by neuroscientist Susan Greenfield (2015) in her book *Mind Change: How Digital Technologies are Leaving Their Mark on Our Brains*, in which she argues that with the onset and continuing diffusion of cyber technologies into our everyday life, "...the human brain will adapt to whatever environment in which it is placed; the cyber world of the twenty-first century is offering a new type of environment; the brain could therefore be changing in parallel, in correspondingly new ways." (p.13). The author of *Everything Bad is Good for You: How Today's Popular Culture is Actually Making Us Smarter*, Steven Johnson (2005), leads us into a persuasive argument in which the author claims that the growing complexity of the world around us, from the increasingly complex story lines found in TV dramas to the mental challenges found in multiplayer online games

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is, in fact, “making us smarter” (p.14). While the question of whether or not cyber technologies are transforming or redesigning the human brain is a question that is generating considerable discussion and debate across a range of fields and disciplines, there is little doubt that the question will continue to be in the spotlight of popular and scientific investigation. The penetration of the digital lifestyle into our daily lives has grown enormously in the past 20 years, and it is probable this penetration will accelerate. Consider that at the end of 2015, 400 hours of video was being uploaded onto YouTube every minute (Alcorn, 2016), and that the average person spends a greater amount of time online than on all other media (TV, newspapers, and magazines) combined (Voss, 2015). The digital lifestyle is here to stay and will continue to advance rapidly, bringing new and unanticipated benefits, challenges, and problems.

What might the future hold in the ongoing technological and digital revolution? One quickly emerging field is Virtual Reality (VR). The recent Tokyo Game Show overflowed with 110 VR game offerings from companies demonstrating cutting edge VR technology, with a general consensus that VR will play a central role in the gaming industry in years to come (Kageyama, 2016). VR could transform our world in the next 20 years in as dramatic a fashion as the Internet has in the past 20 years. Worlds created in computer environments that we experience as vividly as the real world, or perhaps even more vividly with digitally enhanced senses. In *The Future of the Mind*, Michio Kaku (2014) speculated on a future where we are able to create and erase memories with the aid of powerful drugs and technologies. This future may not be all that distant, a team of researchers from several universities in America has already been successful in creating memories in mice (Ramirez et al., 2013). In Japan, media artist Yoichi Ochiai (2016) at the University of Tsukuba has been experimenting with the physicalization of computer graphics in which computer displays appear on real world objects. In the future, through his work and the work of others breaking down boundaries between digital and physical, physical objects such as paper may be transformed into a display, and instead of downloading books onto our Kindles in the future, we may download books onto real paper.

Xreading – a Digital Delivery System for ER

The ELA program at ICU divides first year students into four levels (called streams), the purpose being to offer different levels of students a curriculum with content that targets their needs more completely. Stream 1 consists of ELA students who have been evaluated to be at the most advanced level in the program. Stream 4 is for students who are

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considered to need extra support in development of their English for Academic Purposes (EAP) skills. Students are further divided into class groups called sections, which consist of around 20 students. One of the Stream 4 course components offered to improve EAP skills is ER in the spring term through graded readers. ER through graded readers became a part of the Stream 4 curriculum in 2014 due to concerns by teachers over the imbalance of intensive reading and ER input Stream 4 students were receiving (Yphantides & Gallagher, 2014).

In their defense and explanation for the implementation of ER through graded readers, Yphantides and Gallagher (2014) pointed towards the Input Hypothesis of Krashen's Theory of Second Language Acquisition (Krashen, 1982), which states learners gain most when the input is at a point just beyond their current level. Krashen (2003), in fact, has shown his own strong support for ER, stating, "Free voluntary reading may be the most powerful tool we have in language education" (p. 15). In Stream 4, the great majority of the reading material was considerably beyond this optimum point of challenge, resulting in students spending large amounts of time in demanding intensive reading. Yphantides and Gallagher (2014) went on to identify other benefits for EAP students through time invested in ER as being gains in vocabulary acquisition, improved writing skills, and greater participation in class discussions. The graded readers students have used for this part of the course are located in the ICU library. In recent years though, developments in education-related technology have opened up online digital options for delivery systems of ER.

Xreading is a digital platform primarily for ER. Students join Xreading by paying a fee directly to the company, or by buying a card that allows them access to the website. Students then gain access to a large bank of graded reading materials offered by several major publishers including Oxford University Press, Cambridge University Press, Cengage Learning, and Macmillan Language House. At the moment, Xreading offers its subscribers a choice from among 500 books, and four to five books continue to be added each week. On the Xreading webpage "Features and Benefits" is the statement, "With a subscription, students can read as many books as they want, whenever they want! ... By not requiring students to pay per book, we believe this model encourages reading." For readers using its online library, Xreading offers the option to filter reading possibilities by applying a range of filters to their search. For example, a reader may want to limit the search according to a certain reading difficulty level in order to access reading materials that match their reading level. The reader may decide to further narrow their search for a book they will enjoy by applying filters including the publisher, the genre, and type. This function allows readers to gather a set of possible readings that will be more likely to match their interests and level. Suitability for the individual reader in selecting their

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reading for pleasure materials constitutes one of the most important conditions for successful, enjoyable, and sustained reading efforts. Furthermore, Xreading asks readers to write comments on completed books, including a review and a ranking thus allowing future readers an indication of the experience they can expect to have with the book.

Xreading aims to address a range of problems that can occur in systems that use libraries as the major style of delivery. These include:

- limited numbers of books and copies of books
- books may not be available
- limited control over student selection of books
- books deteriorate and get lost
- the school library is not always accessible for students

(Goldberg, P., Slide 5, 2015).

In terms of convenience for readers, and in reduction on costs and time maintaining a library of graded readers, digital delivery offers many advantages. At the moment Xreading is being used in around 70 educational institutions around Japan (including ICU High School) and offers a strong support team of consultants, and experts in the field of reading, ER, and educational technology listed on its website under “About Us”.

The Case for Digital Reading

In the world today, the main advantages that digital reading offers are convenience of use, speed, lower prices, and ease of access. With the advent of smartphones, tablets, and other mobile devices, students have much greater accessibility to materials than in the past. If an article or other classroom reading material has been saved online in the cloud, students can access the material anywhere and anytime, provided they have an Internet connection. One of the most important advantages of online reading is this accessibility to, and democratization of, reading in areas of the world where books are often rare. One computer with Internet access can offer students and teachers access to written material from around the world. This diffusion of knowledge through sites devoted to spreading information, news and the latest research has led to increased opportunity and empowerment for millions around the world. Wikipedia epitomizes the incredible success and benefits of the democratization of knowledge through open online access. The increased convenience, speed, and ease of access have played an especially important part in the spread of digital reading. Other advantages to reading online include faster access to reading as a few clicks will allow you to have a book on your digital device within seconds, and further, the ability to analyze texts through highly efficient and rapid search

functions. Furthermore, readers can easily customize the digital reading experience with the ability to resize and change the font of text to suit the reader. Reading online offers undeniable advantages and benefits. On the other hand, there are also many reasons why a number of readers are electing to combine digital reading with physical books to do their reading.

Cognitive and Attention Benefits of Physical Mediums

Young people, digital natives, despite having grown up with online reading, surprisingly often show a preference for reading physical books, not only when reading for pleasure, but also for study purposes. Michael Rosenwald (2015), reporter and commentator on the intersection of technology, business, and culture, has written on this topic, pointing out that physical books stimulate us strongly on a tactile and sensory level, which often assists us in recalling and locating information in the book such as through a certain page number, a certain long paragraph, or through some other distinct physical marker such as a ripped page. However, Rosenwald further notes that the way we typically read online, by skimming and scanning through digital material on displays, gives us little time or scope for this (2015). Another reason why students often prefer printed material is the distraction level offered by email, YouTube, and social networking sites that readers have to cope with when using a display. Trying to do several things at one time (multitasking or task switching) means there is a danger of not applying full concentration to the primary task, which for students is the task of absorbing and understanding an academic text. Multitasking and its effect on understanding has been the subject of a growing body of research with indications that we are rather poor at it and also that concentration is compromised (Iqbal and Horvitz, 2007; Wood et al., 2012). Some companies have developed applications that work to block out the online temptation, and prevent this distraction. For example, over 100,000 writers, students and researchers are currently using the application Freedom, which will block your Internet access for set periods of time. In the educational world, a number of teachers have become concerned over the distractions offered by using mobile devices in the classroom, and have taken active steps to control the use of laptops in their classes (Curzen, 2014; Fried, 2008). In comparison to using a laptop or other mobile devices to do reading, physical books have far less scope to allow distractions to interfere with serious reading demanding reflection and critical analysis.

On a different but related note, there is growing evidence that handwriting also offers certain benefits over computer typing in cognitive development. In the *New York*

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Times, Klass (2016) reviewed studies looking at how the motor development involved with learning handwriting strongly engages the brain, and commented, “I think this may be another case where we should be careful that the lure of the digital world doesn’t take away significant experiences that can have real impacts on children’s rapidly developing brains.” (para.18). Furthermore, Mueller and Oppenheimer (2014) argued that learning when taking notes by hand is superior to taking notes on a laptop due to the processing and reframing leading to an enriched learning. They have demonstrated that this is more likely to occur when writing by hand, as against the tendency observed for students to take down notes verbatim style when using a laptop (2014). In both reading and writing, important cognitive benefits can be found in the tactile and more personalized experiences offered by traditional mediums.

Eye health is also a concern held by those who spend significant amounts of time reading and working on a display. A study in *Scientific American* (Jabr, 2013) suggests that reading using a display places greater demands on users physically commenting on such factors as eye strain, vision problems, and headaches when using a display. This is referred to as computer vision syndrome. Concern over this has prompted various companies (for example eyewear maker Jins) to come out with special glasses designed to cut down on the exposure to blue light (which penetrates deeply into the eyes and damages the retina) emitted by TV, computer, tablet and smartphone displays. These glasses are popular, highlighting the concern people have regarding the effect of displays on the health of their eyes.

In America, according to the 2016 Pew Research Center report (Perrin, 2016) on book reading, while e-book reading has seen large increases in the years 2011 to 2014, in the last two years there has been no change in the amount of e-book readership, suggesting a levelling off, and further that even in the choice rich world of today regarding how to read and access reading material, physical books still tend to be the first choice for reading. The digital lifestyle and online reading continues to evolve and propagate and offer great convenience and speed, however, it seems unlikely physical books will be making an exit from reading lifestyles any time soon. The key is a careful and critical consideration of the goals and reasons for reading, be it for speed or depth, and how reading mediums “expand or restrict the value you derive from the experience.” (Baron, 2015, p. 231)

Xreading and Digitalization of Texts at ICU

Xreading offers strong potential for teachers interested in doing research into graded readers and ER by automatically collecting data on various aspects of student reading habits and practices. Some of the information Xreading automatically collects for the instructor includes,

- number of books read
- total words
- reading time
- and reading speed

For instructors wishing to keep track of the effect that their teaching of reading strategies, vocabulary acquisition techniques, and other reading skills are having, this offers a ready-made set of basic data to work from. As ER is now part of the Stream 4 course components, future research into this area will be useful to provide feedback towards improving the teaching of skills facilitating better ER.

Students in one of my ELA stream 4 sections were asked to use books from the library for their ER for the first four weeks of the spring term, and then were introduced to and asked to use the digital delivery system Xreading for the remaining five weeks. Student comments in tutorials tended to reflect the direction of the discussion so far. By far the strongest point in favor of Xreading was the perceived convenience, speed, and ease of access. Students did not need to worry about going to the library, nor concern themselves about carrying a book, nor worry about losing the book.

In light of this, incorporating Xreading appears to represent a practical move for the ICU Stream 4 ER course component. During the spring term, students are extremely busy with classes, readings, club activities, and other social obligations. It tends to be a very stressful time as they accustom themselves to the new demands of college life. Many of them will be living alone for the first time in their lives. The convenience and accessibility of Xreading allows students to have more control over their reading, and increases their efficiency in the reading process. Not only does Xreading let students access the reading anywhere, any time, it offers students a personalized reading list based on the filters applied in the filter search, saving time browsing through many titles trying to choose a book they would enjoy.

On the other hand, physical books also offer students valuable cognitive and attention benefits in reading and study. At ICU, in the ELA we currently require a summer reading of one book for students, and in this case perhaps stipulating the reading of physical books is a good idea. Students have much more time and freedom to devote to reading a book, and understanding its characters, themes and messages. Students can carry

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the book around, leaf through it, write comments in it, fold important or interesting pages, put it on their bookshelf and one day perhaps pick it up to read again.

Conclusion

The growth of online reading in education and in our learning is a complex and challenging issue. The issues surrounding its possible effect on the brain, on health, and how online reading is changing reading habits are generating considerable research, discussion, and debate. The convenience and accessibility of digital books, the speed of research and empowered learning aided by digital tools, and the growing body of knowledge freely available in digital form, means online reading will continue to play an important and central part of our reading future. However, the place and importance of physical books in reading is increasingly gaining attention in academic and public awareness, with a number of researchers and educational commentators highlighting and promoting the cognitive and learning benefits offered through reading physical books. Educational institutions considering a move away from physical copies of study texts to a digitalization of such should approach this carefully, debating and examining the purpose of the reading, looking at the needs of students, at how readers interact with different delivery systems, and how they want their students to interact with the texts used in classes. The key consideration for administrators, educators, and institutions will be how to balance the use of digital and physical mediums and access the best of both worlds for their students.

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