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Nicholas, Arlene J. and Lewis, John K., "The Net Generation and E-textbooks" (2009). *Faculty and Staff - Articles & Papers*. 17.

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The Net Generation and E-textbooks

The traditional college student of today is part of the Net Generation who has been raised in an era of instant access. Their communication and learning is complemented by the Internet, a major influence on this cohort (Roberts, 2005). The regular method of contact is text messaging, instant messaging and cell phones. Learning methods for the Net Generation include Internet tools such as Web-CT, Blackboard, online courses, online journals and i-pod downloads (Nicholas, 2008). Are they ready to also change from print textbooks to Internet based textbooks? This paper describes the attitudes of the Net Generation towards the usage of electronic textbooks. Two pilot studies were conducted with one class using an online textbook and another class using an e-chapter supplement. Students were surveyed for their attitudes on using and learning with e-textbooks. Their views depict the changing attitudes towards media as precipitated by network connectivity that is the mantra of this generation.

Who is the Net Generation

The Net Generation, also known as Generation Y, born 1981 – 1999, have been called entitled and empowered as they have been included in decision making since childhood (Coomes & DeBard, 2004; Lancaster & Stillman, 2002). They have been influenced by their closest cohort, skeptical Generation X, and their idealistic Baby Boomer parents resulting in being described as ‘realistic’ (Lancaster & Stillman, 2002). They are from more diverse families of various forms of structures and ethnicities (Alch, 2000; Coomes & DeBard, 2004; Martin, 2005) and account for 36% of the seven million multiracial populace of the United States (New Strategist, 2004). This diversity adds to their more global orientation and understanding for the need of interconnectivity in the worldwide market (Alch, 2000).

Techno-literate Net Generation

This generation has been described as techno-literate, techno-savvy, technologically fluent and even dependent on technology (Lewis, 2003; McGhee, 2006; Zemke, Raines, & Filipczak, 2000). A nationwide survey of 1,171 Net Generation college students reported 97% owned cell phones and over two-thirds used them for text-messages. Over half of the students in the study said that “instant messaging was their top choice of communication” (McCasland, 2005, p.8). They download podcasts and music, can take photos with their phones and text message one another in their created messaging language (McCasland, 2005).

The Net Generation has a “curious blend of collaboration, interdependence and networking to achieve their ends” (Alch, 2000 p. 4) and their technology seems to bring them and keep them together. Instant messaging, text messaging and chat rooms may be essential to urban and suburban Net Generation connectivity (Cox, 2004). Their creativity and investigation with electronic media, free expressions, strong views and the need for independence without restraint are noted facets of their generation (Alch, 2000).

The connectivity of this techno-literate generation is through text messaging, instant messaging, blogging (Web logs, My Space, Facebook) and video gaming. They have been described as self reliant and independent, and are known for their ability to create with technology as well as use it to gather and share information (Marston, 2005; Martin, 2005). They expect communication via technology and “may be intolerant of those who are technologically challenged” (Murray, 2004, p. 106).

They are multi-tasking as “many young people today are accustomed to watching TV, talking on the phone, doing homework, eating, and interacting with their parents all at the same time” (Frاند, 2000). Digital technology and “peer-driven learning” is very familiar to this generational cohort as “young people are way ahead of the adults in understanding how to use these tools” (Trei, 2006, p.2). The usage of e-textbooks would seem to be a likely fit for this Internet generation.

E-books

Electronic monographs have been exchanged between scholars since the early years of the Internet, before windows and a mouse became the norm. They evolved through UNIX, gopher, FTP (file transfer), and, finally, hypertext transfer (HTTP) protocols (Snowhill, 2001). Despite some negative reviews, e-books have several important advantages over their print counterparts. Most important is the off-campus, 24 X 7 availability of e-books. This is the single most distinct advantage e-books have over print titles. E-books can also be helpful for those with disabilities. “Digital text can be enlarged, read via specialized devices, or easily converted into audio format” (Dillon, 2001, p.123). Another advantage over print is the searching capabilities provided by e-books. The ability to keyword search through the full-text of a manuscript is a big advantage over a table of contents or even the best index.

At present, the future of the e-book is at a crossroads. Although e-book sales have steadily risen over the last five years, they have not met the expectations of publishers. According to the Association of American Publishers (AAP), e-books sales were estimated to be 123 million in 2004 and 179 million in 2005 (“E-books by the number,” 2006). Sales were far below what had been forecasted in the late 1990’s. Digitization projects by Google and other companies could have a big impact on e-book use. The Google Print Library Project is working with major libraries to digitize a large body of literature in the public domain.

E-Book Usage Studies

There is surprisingly little literature in the area of e-books and their usage. There were a few studies at the turn of the century but very little follow up in more recent years. Almost every study has looked at the usage of pre-packaged Net Library collections. Studies of e-book collections from other vendors or single title purchases are almost nonexistent. In 2001, Lonsdale & Armstrong looked at e-book publication in the United Kingdom. Of the 80 UK publishers identified, only 29% were publishing e-books in 1998; by 2000, this number had risen to 35% (Lonsdale & Armstrong, 2001). Another interesting feature of this study was its look at undergraduate research habits. When performing research undergraduates utilized search engines 74% of the time, the library Online Public Access Catalog (OPAC) 30%, email 28%, online databases 2%, and e-journals 1% (Lonsdale & Armstrong, 2001). The numbers for postgraduate students, while higher, were also low.

In a small study of 27 library school graduate students, Chu (2003) looked at e-book usage and preferences. One third of respondents had used ebooks in the past. The two main reasons for lack of e-book use were “hard to read and browse” and “need special equipment” respondents also complained of cost, lack of title availability, and safety concerns (Chu, 2003, p. 342). The biggest reasons for using e-books included “around the clock availability” and searchability (Chu, 2003, p. 343). Users also liked space considerations, timely access to new titles, conservation features, and bookmarking capabilities. Chu concluded that the future for e-books was not encouraging although he did acknowledge the limitations of his non-random survey.

E-textbooks

Although the switch over from print textbooks to e-textbooks has long been predicted, it has yet to occur. While many professors are adopting supplementary materials such as textbook websites that provide online quizzes, slides and other networked materials, few have made the jump to an online textbook. Meanwhile, every year is predicted to be the year that electronic textbooks take off. The acceptance of new technologies by Net Generation students was supposed to fuel this revolution. They grew up with the Internet so they would prefer online textbooks. So far, that has yet to be the case. One of the few early adopters of e-textbooks has been online for-profit universities such as the University of Phoenix (Nelson, 2008).

E-textbook advantages

One advantage of e-textbooks is portability. A laptop or e-book reader can easily hold all the textbooks students need for their classes. The need to tote around five or six large textbooks in the omnipresent backpack would be eliminated. E-textbooks also have the advantage of complete keyword searchability. No matter how comprehensive the index of a print textbook it cannot compete with the keyword searching provided by a digital textbook. Another of the advantages of e-textbooks was supposed to be lower prices. A report by the United States Government Accounting Office found that textbook prices have increased at over twice the rate of inflation in the last two decades (GAO, 2005). The average student spends between \$700 and \$1,000 per year on textbooks (ACSFSA, 2007). However, the promised savings have failed to materialize although one study found the price of e-textbooks to be 20% to 50% lower than print textbooks (Buczynski, 2006). Public interest organizations have found the promised e-textbook savings to be lacking. New e-textbooks surveyed by the Student PIRG cost on average exactly the same as a new hard copy and twice the cost of a used hard copy (Course Correction, 2008).

E-textbook limitations

One of the reasons for the slow development of the e-textbooks is fear of technical problems by professors. Professors fear multiple students coming to them with technical problems that would affect their ability to study or do homework (Carlock, 2008). “Another professor said she would never suggest an e-book as a textbook for her large undergraduate class because if it didn’t work out it would be mass chaos” (Carlock, 2008). An additional problem is that e-textbooks require the student own either a computer or e-book reader (Shepperd, 2008). “Unless students have laptops, electronic texts also can be inconvenient for students accustomed to bringing their textbook to class or reading from it during breaks between classes” (Shepperd, p. 2). Other problems include eyestrain from computer monitors, lack of portability due to

battery limitations, and general reluctance to read or study digital text. It can also be difficult and in some cases expensive to print from e-textbooks. E-textbooks can also be difficult to access. Use of e-textbooks is heavily regulated and access usually expires after a set time period (Course Correction, 2008).

E-textbook studies

There have been unexpectedly few studies that measured either student or instructor satisfaction with e-textbooks. One study, conducted over three semesters in a Biology course at Fordham College, measured student satisfaction with a required e-textbook. Students were overwhelmingly positive in their satisfaction with the e-textbook (Simon, 2001). All of the students would recommend using an e-textbook to their friends, while 95% wished other would offer an e-textbook option (Simon, 2001). Another study of core medical textbooks in a medical library found much higher usage of e-textbooks (Ugaz, 2008). Other studies have not been as positive. A study that included e-textbooks at Southwest Baptist University found that 67% of students preferred print textbooks, while only 18% preferred e-textbooks (Walton, 2007). This study also looked at faculty preferences. Professors overwhelmingly preferred print textbooks with 92% preferring print (Walton, 2007). Another study which actually utilized a web site as the primary text found that 75% of the students would have preferred a print textbook (Vernon, 2006). In a surprising aside two students preferred the electronic version because they could read it at work and not get caught (Vernon, 2006).

Only one study of electronic textbooks has actually measured student performance with print textbooks and e-textbooks. In an introductory psychology course, students were offered the choice of a print textbook or one on a CD-ROM. There was no measurable difference in course grade between those who used the print textbook versus those who used the e-textbook (Shepperd, 2008). However, while most students found the e-textbook easy to use, they were generally neutral in their liking for the e-textbook, and unfavorable in rating its convenience or their willingness to use one in the future (Shepperd, 2008).

E-Textbook Study Results

A small study was conducted to determine Net Generation students' acceptance, use, and satisfaction with e-textbooks. Fourteen students in an undergraduate Business Law class were offered the opportunity to use an e-textbook instead of the traditional print textbook. The cost of the e-textbook was \$60; half the price of the \$120 print textbook. Thirteen students purchased the e-textbook, while one student purchased no textbook apparently borrowing one from a classmate. The class consisted of 10 males and 4 females between the ages of twenty to twenty-four. Thirteen of the students were upperclassmen either juniors or seniors. The majority of students performed well academically with 78% of the students reporting a GPA over 3.0.

Few of the students had previous experience with e-books with 85% of the class reporting that they had never previously used an e-book. This is an even higher percentage than a previous study at the same university when 48.5% of 74 students reported no use of e-books (Nicholas & Lewis, 2007). All of the students stated that they purchased the e-textbook because it was less expensive than the print textbook. None cited any of the other advantages of e-textbooks as motivation for their choice. Students that were either satisfied or very satisfied with the e-

textbook were 71%, and those dissatisfied or very dissatisfied were 29%. Students who would be likely or very likely to recommend an e-textbook to a classmate were 85%.

Most of the students were comfortable with the e-textbook, with 78% of the students reporting it was easy or very easy to use. Ninety-two percent of the students found the e-textbook helpful or very helpful in preparing for the quizzes conducted in the class. This is not surprising considering the students were told many of the questions would come from the e-textbook quizzes. In rating their overall experience with the e-textbook, the students were about evenly split. Students rated their experience as 50% positive or very positive and 50% were neutral or negative toward the e-textbook. No students reported an extremely negative experience with the digital text. Asked which textbook they would choose if they had the choice over again the students were once again about evenly split. Fifty percent would choose a print textbook, 42% would choose an e-textbook, and 7% had no preference.

Comparative surveys

A class of Business Communications students was assigned a chapter reading from a book available online. Coursework also included engaging in online mywebcourse discussions so Internet accessibility was a requirement. The class of 27 business majors, 14 male, 13 female were surveyed after their online book experience. The majority of ages, 25 students, were from 20- 21, one student was in the 18 – 19 range and another in the 22 – 23 range. All students were over 2.5 GPA. Surprisingly, 17 of the 27 had never used an e-book and 1 had never heard of them. Occasional usage was reported by 8 and frequently by 1 (See figure 1).

		Gender		Total
		male	female	
Experience	frequently	0	1	1
	occasionally	4	4	8
	never used	9	8	17
	never heard of	1	0	1
Total		14	13	27

Figure 1 Experience * Gender Crosstabulation

Of 26 completed surveys (one was incomplete), 64 % of males and 75% of women would prefer a print book over an e-text (See figure 2). However, this dropped to a 21% - males and 17% - females' preference if the print book was more expensive (See figure 3).

		exactprice		Total
		e-text	print book	
Gender	Male	5	9	14
	female	3	9	12
Total		8	18	26

Figure 2 Gender * exactprice Crosstabulation

		moreprice		Total
		e-text	print book	
Gender	Male	11	3	14
	female	10	2	12
Total		21	5	26

Figure 3 Gender * moreprice Crosstabulation

Additionally, a spring Human Resource course was assigned a chapter in an online HR book from the library as a supplement to their textbook. The survey results of 26 business studies participants, age 18 – 23, yielded interesting results from this Net-generation. Only 26.9% (5 males and 2 females) used occasionally, 61.5% (8 males and 8 females), never used and 13.6% (1 male and 2 females), astoundingly, never even heard of e-textbooks.

Conclusions

Although the sample size was small, several interesting conclusions can be drawn from the data. Most importantly the largest motivating factor for format selection of a textbook is cost. The students all cited decreased cost as the motivation for choosing an e-textbook. Even more surprising is that just a small difference in price would be determinative in format selection as most of the students come from middle-class or wealthy backgrounds. If an e-textbook were just \$25 less than a print version, 75% of the students would select it. At a school with a more diverse student population, such as a community college, cost is likely to be even more of a determining factor.

The other readily reachable conclusion is that even the Net Generation students are more comfortable with and prefer print textbooks. Most of the students had no prior experience with e-books. While satisfaction with the e-textbook was somewhat mixed, it was clear that if cost was removed from the equation most of the students would select a print textbook. Eighty-five percent of the students stated that if the price were exactly the same they would prefer a print textbook. E-textbooks were used less than print textbooks as well. While 50% of the students reported using the e-textbook about the same as a printed version, 35% said they used it less often and only 15% used it more often. Consideration of adoption of an e-textbook may include the ethical dilemma of a student's economic status. Is it a cost saving feature for students to use an e-textbook, or a hardship for students who do not have a computer?

Other options that students now consider as sources of textbooks are rental books (chegg.com, collegebookrental.com, etc.) and online purchases at half the cost (Ebay's half.com, halfprice.com, etc.). An ethical example was presented this semester. A student purchased online an HR book for \$30 and returned it to campus bookstore for \$60. The same student also bought online an Ethics book for \$8 and received \$81 for resale at the campus bookstore. This student made a nice profit, however, students, who purchased the same books HR for \$120 and Ethics for \$160 at the bookstore for almost twice the resale value, may not earn any resale money because a limited number of textbooks are bought back.

E-textbooks could be accessed by every student in this study as the school requires incoming students to purchase a specific laptop at a cost of \$2000. This does include limited

tech support; however it is a major complaint among the students regarding the cost and the restricted type of computer. The ethics of that mandate are another matter.

Limitations/Future Research

There are some obvious limitations to the study. Sample size was quite small and there was no random selection or assignment to groups. Also, the overall population was limited to a small Catholic university in the Northeast United States. There are quite a few areas that are rife for further research. One particular interesting area would be a study to determine if the selection of a print or electronic text had any effect on the grades students achieved in the class. An admittedly small study performed with grade school children showed significantly higher group test results and higher, but not significant, individual test results (Maynard & Cheyne, 2005). Studies of college students would be of importance for the promotion of this media. It would also be interesting to study the perceptions and perceived resistance of professors to utilizing e-textbooks.

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