Technology in the Classroom is Changing the Publishing Landscape

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Abstract

The education system in Canada is currently facing a difficult situation regarding the transformation of technology. There has been increasing support over recent years to have more technology implemented in classrooms, yet we have not seen many major changes being implemented. Is the education publishing industry trying to maintain their profits and neglecting our students? Or are there other reasons? Looking at the pros and cons of having a more digital environment in the classroom, this paper will identify the strengths and weaknesses of having a predominantly digital environment. Additionally, this paper will use the research done Rollans and de la Cheneliere (2010) to examine the position that education publisher takes and the challenges they face trying to implement a more digital environment. An analysis of potential solutions will be conducted to show K-12 education possible ways to tackle the issue.

Keywords: Education, Education Publishing, Technology, Podcast, Technology in Education Publishing

Technology has become an integral part of our culture, becoming almost synonymous with our everyday lives. From an early age, many children are exposed to digital media forms such as TV, mobile phones, tablets, and computers. Research done by the University of Iowa found that "by age two, 90 percent of modern children had a moderate ability to use a tablet." (Wanshel, n.d.). These studies have come to show children are being exposed to advanced

technology even during their most important developmental years. Conrad (n.d.) also had similar findings, citing that "The time spent with on screen media dramatically increases from the toddler to preschool to school-age years… there are two and a half hours per day among two to four-year-old and almost three hours for kids in the five to eight-year-old range.". This highlights a fundamental shift in the environment children are growing up in now. Children are less inclined to go out and explore the world when they have access to a plethora of apps that provide them with countless hours of entertainment and knowledge. This drastic shift provides a challenge for many traditional formulas of the education system, including the publishing aspect.

The sector of education publishing in Canada is one that is very different than higher education or traditional trade book selling. Its has a highly niche group of customers consisting of mainly provincial governments bodies. A study done by Rollans and de la Cheneliere (2010) suggests that K to 12 publishing in Canada has a "more direct and dependent relationship with government, since governments are its main customers and set out the requirements for K to 12 publications." (p. 17). Because of their close-knit relationship with most of the provincial governments, they have created a consolidation with other members to create a "one-stop" place for governments to contact them. These corporations operate in such a specific niche that they can pinpoint the needs of K-12 education curriculum much more effectively than trade publishing can. The state of the education publishing market has become somewhat of an oligopsony, and they have dominated it for some time now. However, the introduction of new communications technology has sparked debate over whether Canadian publishers should switch to digital copies of textbooks to better educate the student on an increasingly technologically reliant society.

This amount of control the provincial governments have over the education system is a problem for some because of the potential restrictions in the curriculum and the fact that the sector is controlled by so few bodies. It is easy for these big publishing companies to band together and mutually benefit each other financially at the expense of the students. The increasing dependence of technology offers an alternative way of learning for K-12 students, giving them more autonomy than ever before, with the hope that students will be able to adapt

more easily into a technologically competitive environment. If our focus for education if for children to have a better learning environment, then we need education publishers to know why we need a change. This is not to say that print textbooks do not have their uses, rather, they still perform an important function in a child's education. This paper will examine the benefits and problems of implementing a more technology focused learning environment, and show the challenges facing education publishers who try to implement more technology into classrooms. Rollans and de la Cheneliere (2010) found that "the sale of digital products amounted to just 0.1 percent of total sales of eligible education resources by BPIDP-recipient publishers in the 2008-2009 application year." (p. 68). The low numbers of digital products indicate that the amount of technology kids use for educational purposes is disproportionate to what they will most likely be using in higher education and in the workplace.

If we try to understand this whole issue with the mindset that the kids are the focus of education, then we need to identify why it is important for the kids to have access to digital textbooks. Convenience and availability of the e-textbook provides vast benefits for the students. Kids no longer need to hold man textbooks to and from school everyday now; Their tablets and notebooks are more than capable of holding hundreds of textbooks. Regarding storage space, Sessoms (2013) argues that "Tablets can hold hundreds of textbooks on one device, plus homework, quizzes, and other files, eliminating the need for physical storage of books". (Storage space is reduced). Convenience extends to much more than just storage though, as it has also made learning much more interactive. A digital textbook can provide a means of sharing, communicating, and learning for students. Because it is connected to so many other aspects, it provides students a platform to learn and share information online with each other. By taking advantage of the technology, students are more able to connect with their teacher and classmates by having the opportunity to make notes and comment in the textbook itself. "Many eBooks also provide students with quizzes or practice questions based off chapters they've just read. This allows students to take responsibility for their own learning without outside instruction." (Lynch, 2017). The availability of digital textbooks also makes them extremely valued in the context of cost. It is much cheaper to produce an e-textbook compared to print

because it does not need to go through the expensive process of having to be printed out and shipped to schools. This makes it much more affordable not only for families, but also for schools. Lynch also notes that schools can "save money and use the extra funds to invest in teachers, additional resources for students, or after-school programs." (2017). Extra finances will give schools more autonomy to pursue other resources that would previously be unavailable. One of the main questions surrounding the pros of technology is 'is technology necessary?'. The shift to a more technological approach in higher education and workplace calls for changes made to the way students learn at a younger age, particularly in elementary and high schools.

Such benefits for digital textbooks and technology in classrooms certainly give a compelling argument to implement it. Why is then that people are skeptical of implementing digital technology in such as large scale? There are fears of the changing social dynamics of learning from technology. If these digital technologies are implemented, it could change how we educate ourselves completely. Students may no longer have the traditional classroom learning experience, rather, most of what they are doing will be online. As Heick (2012) notes, "without a classroom where students can form friendships and relationships with their peers, they may not learn the same social cues as traditional students." A digital classroom, then, may not represent an engaging and communicative environment for which the students to learn from. Lacking social skills is a vital blow to people who are trying to enter the workforce, and usually the place to learn that is from the classroom. Additionally, technology could be a distraction to those trying to learn. Ritchell (2012) notes that "teachers and students' constant use of digital technology is hampering their attention spans and ability to persevere in the face of challenging tasks". While it offers the benefit of being able to connect more easily with your peers and your teachers, it also becomes a problem when you are constantly attached to it. Teachers may have a hard detecting whether you are paying attention or not; parents may not know whether their kids are studying at home or playing games; students may not know if the student is studying or playing, making it difficult to communicate with them. "It may be difficult for a teacher to monitor her students so closely in class as to determine whether they are utilizing educational apps on their tablets or browsing Facebook." (Heick, 2012). It is

difficult to place where the focus of the students and teachers will be when technology can be so distracting.

Another issue that stems from technology is also from the question earlier. Is technology necessary? If technology is changing at an exponential rate, it would be extremely pricey to put so much investment in something that may be obsolete with a couple of years. Some schools may not be able to afford such expensive equipment even if they were allotted with extra funds. This makes a potentially imbalanced learning environment for students around Canada. Heick (2012) acknowledges this problem and states that "new hires may be necessary for teaching students how to use the newer digital media, yet another expense to the school." Implementing means much more than just changing from print to digital textbooks. It is probably cheaper to produce an e-textbook compared to a print copy, but other costs include re-educating the students and staff how to handle new education every few years. Planning for this type of education means long term plans are not practical, since change could come in an instant. As much as technology provides a platform for students to interact with each other, it also presents itself as a barrier for communication and innovation. Some students may be hampered by not being able to keep up with the pace of technology, while others may be stifled by the potential lack of innovation that technology brings. For example, a student may be gifted at painting, but with technological courses being implemented, that talent may be left out to dry because of the lack of opportunity.

The problem of profits and costs extends to the education publishing industries. There is a long-standing debate on authors wanting to make money for their work versus education systems wanting to make open access to scholarly work. Research done by Rollans and de la Cheneliere (2010) suggests that "publishers have shown a lack of confidence in being able to recover their costs, and users have been more enthusiastic about free digital resources than digital resources available for purchase." (p. 69-70). If the shift from print to digital takes place, then the whole business model would be changed. Traditional forms of printing entire sets and curriculum will be different in a digital society. Teachers and students will have the autonomy to choose what they want to teach and learn, meaning the value of content created by education publishers drastically

diminishes. "Several described their reluctance to supply these products because of the real potential that a no-cost or low-cost digital resource for use at the front of the classroom may eliminate the need for class sets, undermining existing business models." (Rollans and de la Cheneliere, 2010, p. 70). Such uncertainty gives publishers little incentive to produce content because of the amount they would get paid. Geist (2017) agrees that and says that "provincial spending… has been delaying purchasing decisions and the increased use of alternative and digital resources." For K-12 education, the difference between them and higher education is that the ministry buys the textbooks rather than the students themselves, so it provides the publishers a steady flow of income. Considering this digital age though, "Ministries want to see more high-quality digital resources in use in K to 12 schools, and they want those resources to be effective in delivering their jurisdiction's mandated programs of study." (Rollans and de la Cheneliere, 2010, p. 72). This shows that the people who are establishing these curricula are wanting change from the publishers, which means that it may not be a choice for these publishing companies to adopt a more technological approach.

All of this does not mean the education publishing industry is not doing anything to deal with the changing business model. A report done by PwC (2015) notes that "many publishers have sought to offset declines in revenues from print materials with new revenue models, innovative services, and digital content that offer new learning experiences to students." (p. 4). Despite all the volatile situations that have surfaced from technology, there are publishing firms that are committed to creating more digital creative freedom for the students. The challenge for them will be to maintain a sustainable revenue to continue their operation. But with setback also comes opportunities, and technological advancements offer publishing corporations and opportunity to test out new fields and traverse in new areas that are potentially rich. For some, these challenges are proving too insurmountable for them and so they continue to focus on maintaining print as their dominant business model. PwC (2015) also finds that "the transition costs of adopting digital content and delivery are high. Canadian-owned and small publishers have reported an inability to maintain competitiveness in the face of rising levels on technology investment." (p. 4). This means that even though there is a will to try and adopt and change the way the

publishing industry is, the financial burden that these companies have to take implementing new technology of their own, restructuring, and re-educating their staff makes it very difficult for a smaller publishing firm to compete.

One of the biggest differences between the education publishing and trade publishing is that education publishing does not operate within a free market. They have complete control of their niche market, and they can set their prices and policies much easier than trade publishing. PwC (2015) expects that "more publishers to exit the K-12 educational content market, further reducing competition in the market with potential negative impacts to innovation, quality and prices." (p. 8). With fewer companies being able to stand out to the increased costs of integrating technology into their publishing, it becomes more difficult to create content that is innovative and we may get a situation where only a few big corporations are left. There have also been no real signs that print is going to be going away anytime soon, and many still believe that print is still the best way to learn. There is an argument that e-books will have detrimental health effects on students in the long run. Bushak (2015) found a recent study by Harvard, stating that "reading an e-book before bed lessened the production of an important sleep hormone known as melatonin". Schaub (2016) adds that "The main reasons students preferred paper books, …, were the lack of distractions that are available on computers, as well as the headaches and eye strain that can result from staring at a screen." These potentially negative health effects, coupled with the strong bargaining power that education publishers hold, make it difficult for there to be a definitive switch towards a purely technological state of education.

Is there a best alternative then? There are very clear indications that we are living in an increasingly digital world, and there needs to be some sort of adaptation in the education system to keep up with the constant change. At the same time, this paper has also identified some potential problems and challenges facing these changes. The answer would be no, even after at least 10 years of using some form of technology in the classroom, there is still a debate on whether it is better or worse. It is not universally accepted that digital technology is the way education should be heading. Schaub (2016) notes that "there are the aspects of the reading experience that computers just can't replicate (yet)." Reading an e-textbook is not the same experience as reading a book. They may contain the same

content, but there is a different feeling when you finish a book than when you finish an e-book. If there aren't enough convincing arguments for going fully digital or staying print in K-12 education, then perhaps a hybrid solution is something that we should look for. Rollans and de la Cheneliere (2010) note that "K to 12 schools emphasize responding to the diverse needs and diverse learning styles of individual students, and most educators agree that some needs and some students are best served by print resources, and may always be." (p. 74). Print, in many people's eyes, is still a very valuable piece of technology that people still heavily rely one. Even though it may be more convenient to use digital apparatuses, there are certain benefits to text. As Wallis (2017) notes, "some researchers have observed that working your way through a print volume leaves spatial impressions that stick in your mind." There is no one medium fits all, especially in the education sector where everyone learns at a different pace.

The market for the has also been suggestive that going completely digital now is near impossible. As Waky Hyde (2016) observes, "The market around content has also placed the emphasis on the physical product—print books, in the case of publishing—relying on the cost of production and its tangible clues as to the value of the content to justify their monetary value." (p. 2). It is noted that the industry is trying to promote technology within the classroom. That said, they perhaps are not yet ready to give up their traditional business model and profit oriented goals. After all, if your company is not making money, you cannot continue to run. One of the potential changes would be to increase government funding on a federal level to help the industry maintain a degree of balance while it transitions into a more digital aspect of publishing. In the report done by Rollans and de la Cheneliere (2010), they understand that in most provinces, "governments typically do not invest in new K to 12 resources until the resource has been authorized for purchase — in other words, until all development and production costs have been incurred by the publisher." (p. 22). This decentralized form of government investment makes it a difficult environment for the industry to distribute technology in a fair and easy manner. Because each province decides on the curriculum, it is difficult to gauge a full switch. Hence the preposition of the federal government stepping in. There market, as niche as it is, cannot afford to keep getting smaller, limiting opportunity for creative and innovative options for

other publishing firms. If the focus is our students getting the education they need, then a hybrid style is needed.

Print education and textbooks offer students an alternative way of learning, equally important to technology and the e-textbook. While it is true that technology is changing how students learn in the K-12 classrooms, there are key and valuable arguments for why print will still be very important in this technological era. Publishing industries have attempted to make strides to accommodate the need for a more digitized curriculum. However, many factors make it difficult for such a swift transition, especially on the economic side. The suggestion of an alternative looks to combine print and digital together. Since both have benefits to students, it will be beneficial to incorporate them both in the classroom. Publishing industries can continue to produce print textbooks with a heavier emphasis on making more course work digital to help students transition into higher education and work more smoothly. This gives students an opportunity to choose what they want to learn from. The challenge from this is the increasingly decentralized structure of the education system. Splitting students into print or digital is not beneficial for the students or the publishers. Hence, federal government intervention is needed to help support publishing industries financially and to centralize education within provinces so that the curricula produced is as similar to others as possible. Currently, the statistics show that education publishing still heavily relies on print as the primary form, but with digital technology seemingly destined to grow even further, perhaps change is in line for education publishing companies.

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