

# Example of technology in the classroom literature review

[Profession](#), [Student](#)



**Abstract:**

As a society we are constantly connected to our technology, as it touches most aspects of our daily lives. People are using new forms of technology to “ envision and create new things in new ways, learn new things in new ways, and communicate in new ways with new people.”(Groff, Haas, Klopfer, and Osterweil, 2009) Smartphones and tablets have replaced the traditional learning methods once undisputable in schools with their efficiency and capabilities; their useful applications and visual stimuli. Though the real-world applications are applicable to everyone in the educational system, especially to students with behavioural disorders. We need to develop new ways to teach students on their own terms. (International Education Advisory Board, 1) As youths are so ingrained in an innate technological based culture, it is futile to presume that old-fashioned methods would continue to be effective in an otherwise ever-evolving society. Studies show that with proper integration into the school curriculum, the use of digital integration tools like smartphones and tablets as educational tools can prove beneficial to the learning process of students identified as having a learning or behavioural disability. However, some critics make Luddite-type arguments that suggest our overreliance on technology tools have caused people to become deskilled in other areas. (Kemp, 4) Regardless of the level of education, the addition of technology is seen as an advantageous way to increase the amount of accessible information available to students.

**Smartphones and Tablets vs. Traditional Textbooks**

Technology is a universal entity, existing and interacting within the daily

lives of billions of people globally. Technology is constantly outdoing itself, with new versions of the latest gadget appearing every few weeks and months. The latest tablet or phone from popular companies like Apple and Samsung enrapture the attention of the public masses. As a driven-to-expand-society we are constantly connected to our technological tools, as it touches most aspects of our daily lives. People are using new forms of technology to “ envision and create new things in new ways, learn new things in new ways, and communicate in new ways with new people.”(Groff, Haas, Klopfer, and Osterweil, 2009) This generation has an entirely new relationship to technology then did their parents or the previous Baby Boomer generation. These youths have been completely defined by what we call the “ digital age.” The potential for learning in this new digital media environment is far-reaching, and as such has finally found its way into the educational curriculum. Technological advances like smartphones and tablets have made the leap from toy and gimmick to essential pieces of hardware allowing any and all information to remain at the tip of your fingers. Encyclopaedia’s, maps, cameras, games, music players, newspapers; once all separate entities, have now found their way into a single device both in the home and in the business-world. So with all that information so readily available, a progression into the education system is not only logical, but inevitable. Smartphones and tablets have replaced the traditional learning methods once undisputable in schools with their efficiency and capabilities; their useful applications and visual stimuli. The real-world applications are applicable to everyone in the educational system, especially to students with behavioural disorders.

Studies show that with proper integration into the school curriculum, the use of digital integration tools like smartphones and tablets as educational tools can prove beneficial to the learning process of students identified as having a learning or behavioural disability. Many schools and studies are just beginning to understand the potential benefits digital learning offers for all types and levels of students. When properly introduced and the proper user knowledge instilled in its users, this technology provides the basis for the skills that both students and teachers need to survive in our complex, multi-faceted, technology driven economy. As well, it provides the unique opportunity for educators to connect with students at a more familiar level and encourage stimulus learning in students who are otherwise losing their enthusiasm for traditional educational mediums.

We need to develop new ways to teach students on their own terms and in their own ways. As youths are so ingrained in this innate technological based culture, it is futile to presume that old-fashioned educational methods would continue to be effective in an otherwise ever-evolving society. The seemingly innate ability to use new forms of “ techy toys” is a global ideology. It makes using these tools for learning both fun and easy for all students, regardless of their location. Proof of this comes from a 2012 social experiment, where two isolated villages in Ethiopia were selected by the One Laptop Per Child organization. The organization delivered tablets pre-loaded with educational apps, with no instructions on use. Within five days the One Laptop Per Child organization observed elementary school-age youths—without any prior training—were using 47 apps per child, per day. (Talbot, 2012) Within two weeks of the drop off, they were singing the alphabet, and within a few

months had personalized the tablet's operating system and customized the desktop settings. (Talbot, 2012) Utilizing new and effective teaching methods like the use of mediums like smartphones and tablets eliminates cookie-cutter teaching; the out-dated and incorrect logic that one method of teaching should work for every student.

“ From e-mail to online classes, computers are definitely influential in our lives, and can enhance the learning process in schools in various ways. With the increasing popularity of computer technology, it is essential for administrators to support and encourage computer technology in our education systems.” (Gulley, 2003) Learning should not be restricted to inside of a classroom. With the new technological mediums being released bi-monthly, it is becoming increasingly easier to access information with the best tech there is. (U. S. Bureau of Labour Statistics, 2012) The Advanced Distributed Learning Initiative defines mobile learning as “ Leveraging ubiquitous mobile technology for the adoption or augmentation of knowledge, behaviours, or skills through education, training, or performance support while the mobility of the learner may be independent of time, location, and space.” (ADL, 2014) Mobile learning is a more personalized method for the user, allowing access to content anytime, anywhere. (ADL, 2014) Portability is a major factor in determining a product’s usefulness, but today’s smartphones are becoming increasingly valued in the academic field for their ability to connect us to any desired resource with just a few swipes of a finger. (ADL, 2014)

Learning using a smartphone is not restricted to a small screen. Using smartphones, students can take notes and transfer them anywhere; to a

computer, another device, or share them with others. Any student with a smartphone has the ability to achieve instant access to countless internet sites for answers to any question they may have. The ever increasing capabilities of cameras on phones means that users can also photograph or video files or films with sharp and precise definition, and transfer those files anywhere they wish. (ADL, 2014) Mobile learning emphasizes the idea of mobile learning focusing on experiences rather than content distribution. (ADL, 2014) Social, situational, collaborative, and unstructured learning reinforce the idea that this type of learning supports ideas of non-traditional learning methods. (ADL, 2014)

A defining feature of mobile learning is that it provides enhanced collaboration among learners, access to information, and a deeper contextualization of learning. (ADL, 2014) Unlike other technologies, mobile learning accommodates both formal and informal learning scenarios. Mobile devices use “ distributed cognition” (cognitive functions shared with machines). (ADL, 2014) They support our ability to exercise cognitive brain power functions. (ADL, 2014) Mobile learning platforms provide unique opportunities for learning. Studies show it supports a function called metacognition. Simply defined, metacognition means learning how to learn. (ADL, 2014) Smartphones are well positioned to support metacognition because we carry them around constantly. Their ever increasing capabilities mean we can use them to tell the time, the temperature, use them to look up something on the web, play music, or do anything they like.

**Benefits of mobile learning include:**

- It is a flexible educational medium
- Useful for both informal and formal learning
- Highly personalized device
- Most of the population has a smartphone
- Constant and relevant access
- Fully integrated user-generated media systems (i. e. youStream, BBM, iMessage)

(ADL, 2014)

As MIT professor Seymour Papert says, " You can't teach people everything they need to know. The best you can do is position them where they can find what they need to know when they need to know it." (ADL, 2014)

Traditional methods of classroom education that relies on textbook and straight contact lectures have, for many years now, been trailing in their quality and desirability on campuses across North America. The use of new technological mediums creates a brand new way of learning that better stimulates students' critical thinking skills, providing them with interactive ways to become more interested in subjects. (Johnson, 2014) Technology is a continuously progressing and changing practice, and being able to integrate new tools into the classroom is a logical progression in western culture.

Students need to be able to function independently with the tools they have; including the ones that are constantly being released into the market.

Modernized societies and cultures on a global scale are perpetually reliant on advances in technology. Having best practices and new tools initiated in educational curriculums promote students to be academically motivated,

and to simulate what a traditional workday might often entail. With new tools being implemented into the curriculum, all ranges and levels of students have the unique chance to learn and experiment using untraditional methods of learning. Using critical thinking skills in order to process new forms of pictures, reading, writing, and other creative mediums allows them to understand and interact with concepts in a unique and individualized manner. (Johnson, 2014) Additionally, as these learning mediums are proven to create new enthusiasm for subjects, students are more inclined to remain interested in their assigned work. Studies show that stimulating tools like smartphones and tablets decrease behavioural problems and increasing grades. (Johnson, 2014) By stimulating otherwise dulled enthusiasm in a student, digital mobile learning encourages students to learn through their own volition.

Both forms of media, whether tablets or smartphones, provide multiple advantages for its users through compatibility and connectivity. In 2012, studies from PEW Research showed that more North American citizens used smartphones and tablets to access the web than desktop or laptop computers. (Smith, 2011) By Jan. 2014, 42% of US adults were reported to own a tablet instead or in addition to a computer, 32% owned an e-reader. (Brenner, Madden, Purcell, Rainie, and Zickuhr, 2012) Approximately 227 million tablets were shipped throughout North America in 2013, and PEW predicts that number will increase to 386 million by 2017. (Adams, Cummins, Johnson, 2012) A joint report conducted by McKinsey and the GSMA predicts that the mobile education market could be worth \$70 billion globally by



2020, while demand for smartphones and tablets may be worth another \$32 billion. (Adams, Cummins, Johnson, 2012)

Another prevalent issue targeted against print textbooks is their weight. In a report prepared by the California Board of Education, it proved how print textbooks are between 5-7 pounds, while a tablet only weighs 1-2 pounds. (Adams, McDonald, Rios, 2004) Multiple chiropractors have stated that this can cause serious injury and stress on a student's back and shoulders. The maximum recommended weight that should be carried by students is less than 15% of their body weight. However, the average weight of all the textbooks that are usually carried exceeds this percentage at nearly all grade levels from 1-12. (Adams, McDonald, Rios, 2004)

43% of Americans read books, magazines, and newspapers online; and most often through these two mediums. (Brenner, Madden, Purcell, Rainie, and Zickuhr, 2012) Amazon announced in July 2010 that e-books were outselling paperbacks, proving that this traditional method is becoming as obsolete as the flip phone. (Tablets vs. Textbooks, 2012) From 2008 to 2012, e-book sales rose from \$68 million to \$3 billion. (BookStats, 2012) While e-books sales rose 117% from 2010 to 2011, the print book business declined 2.5% in 2011 to \$27.2 billion from \$27.9 billion in 2010. However, over 90% of educational textbooks are still read on paper, and only 30% of textbook titles are available electronically. (Tablets vs. Textbooks, 2012)

Emotional Behavioural Disorder (EBD) issues in students are usually diagnosed when students do not conform to parental, teachers and community expectations, manifesting this through certain violent behaviours. (Igbo, Obiyo, Onu, 37) On an emotional scale, these students

have little or no control over their actions and as such, are at a disadvantage when it comes to the educational system. (Igbo, Obiyo, Onu, 37) There are unique academic and social demands placed on students in school and classroom environments, especially those with emotional or behavioural disorders. Assistive technology like smartphones and tablets are resources that are untapped and extremely useful in the management of these EBD behaviours. (Crowley, Parette, and Wojcik, 2007) The technological tools we are accustomed work as a combination of software and hardware that merge through information and communication. Utilizing smartphones and tablets provide meaningful learning experiences to its users that are proven to develop problem solving skills and the ability to function in the world beyond the classroom. Studies have shown that educational quality is enhanced when technology is used to complement intellectual tools. It should be noted that technology helps students with special needs to maximize their independence in both academia and in employment, succeed in real-world learning practices, prepare for transitions to university and begin promising careers. (Igbo, Obiyo, Onu, 39) Since 1975 when the Individuals with Disabilities Education Act was enacted, there have been impressive strides made in special education fields, including work for students who have been diagnosed with emotional and behavioural problems. (Bader, Hanley, Hoffman, Osher, Tate, 2) Studies show that digital learning mediums like tablets and smartphones are valuable tools to educate and treat multiple deficits in individuals identified as having learning disabilities.

Over the last two decades, studies of how technology can be used within an educational curriculum have appeared in academia with increasing

regularity. Digital learning methods like the implementation of smartphones and tablets provide highly effective methods for teaching students identified as having a learning disability. Students with learning impairments who have trouble fitting in traditional classroom environments have had success in learning and attaining information through digital learning education methods. (Edyburn, 2007) Students labeled with a learning disability often exhibit certain deficits in reading, writing, or math skills, as well as a lack of social, and emotional skills. (Edyburn, 2007) Research has proven that all of these can be treated with greater success with designated, carefully chosen methods of digital learning rather than the traditional classroom environment that sometimes misrepresents where the impairment originates from.

However, some critics make Luddite-type arguments that suggest our overreliance on technology tools have caused people to become deskilled in other areas. (Kemp, 4) Critics also argue that technological advances have led to educational materials created outside the control of the teacher, promote the loss of professional attitudes associated with quality education, and the further disassociation between low socio-economic areas and their ability to acquire the needed technological advances. (Kemp, 4) Having tools like smartphones and tablets inside and in use of students and schools, has multiple levels of pros and cons. It makes it simpler and more efficient for students to write papers, conduct research, and create a presentation. It also prepares students for integration within our technology driven society. Alternatively, distractions can become an issue, such as loading devices with games and social media. (Wolverton, 2012)

Regardless of the level of education, the addition of technology is seen as an advantageous way to increase the amount of accessible information available to students. Thus, the integration of technology is a critical component to advancing and maintaining the future efficiency of the educational system