

The Negative Impacts of EdTech: EQ Perspectives

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Abstract: For 21st-century education, digital technology has proven to be transformative, functioning as a catalyst for pedagogical engagement and change. At present, learners are using smart-phones, tablets, laptops, and other digital devices as learning tools on a regular basis. Teachers also struggle to offer a variety of deeper learning opportunities now available in classrooms without the use of technology. However, the negative impacts of technology, particularly relating to emotional intelligence (EQ) skills, are also raising concerns among educators and researchers in this domain. EdTech may result in loss of communication among peers as well as extra stress, which may create a barrier in developing emotional intelligence. Technology can also result in diminishing motivation and empathy between students. Despite concern over the negative effects of EdTech in learning EQ skills, previous researchers in this field have not extensively investigated this issue. This study will focus on how technology can play an important and beneficial role in learning emotional intelligence skills. The outcomes of the study will comprehensively highlight the negative impacts of using technology in the EQ learning process. The study will also make recommendations to minimize the negative impacts of EdTech in EQ learning and to make the use of technology more effective.

Introduction

Digital technology has proven to be transformative for 21st-century education, functioning as a catalyst for pedagogical engagement and change (Lim, Harper, & Chicharo, 2014). Today's learners are using smart-phones, tablets, laptops, and other digital devices as learning tools on a regular basis, and without the use of technology, teachers struggle to offer the variety of deeper learning opportunities now available in better-equipped classrooms. In addition to content expertise, innovative educators also leverage technology to enhance student experiences with creativity, learning, and innovation (Coffman, 2013). Education technology (EdTech) can also increase engagement as well as personalize, reinforce, complement, and extend learning (Coffman, 2013).

Nevertheless, the negative impacts of technology, particularly relating to emotional intelligence (EQ) skills, are also raising concerns among educators and researchers. Technology may increase aggression (Boyle, Connolly, & Hainey, 2011), anxiety and debilitating thoughts (Heinssen, Glass, & Knight, 1987), low levels of self-control (Kim et al., 2008), and addiction (Delwiche, 2006). It also increases social isolation (News-Medical.net, 2017).

and desensitizes people leading to issues like cyberbullying (ET, 2017).

A Brief Overview of EQ

Emotional Intelligence Quotient (EQ), also termed social emotional learning (SEL), is defined as the capacity of a person to behave in different social situations appropriately (Goldsworthy, 2002). According to Salovey and Mayer (1990), EQ is considered as a subset of social intelligence involving the capability for monitoring one's own and others' feelings and emotions. EQ is also explained as the ability to understand and trust our own emotions as well as the capacity to read others' emotions to ensure that appropriate actions are taken (Al-Faouri, 2011). EQ is also defined as "the abilities to perceive, appraise, and express emotion; to access and or generate feelings when they facilitate thought; to understand emotion and emotional knowledge; and to regulate emotions to promote emotional and intellectual growth" (Mayer & Salovey, 1997, p. 10). Emotional intelligence can help a learner to be able to empathize and also to establish healthy relationships with others. The combination of all of these traits help us become better human beings (Ercan, Ural, & Köse, 2017).

Current EQ Technologies

The use of Information and Computer Technologies (ICT) in the classroom has increased in recent years (Saunders & Klemming, 2003), and has helped learners become proficient in EQ skills. With intuitive, dynamic, and visually appealing applications (apps), users are able to build upon their ability to understand, recognize, regulate and express emotions to live a more productive and fulfilling life (Business Wire, 2014). Certain apps can effectively develop the emotional intelligence of the users through solving real-life challenges more thoughtfully and prompting self-reflection (Six Seconds, 2018). Some other apps can also help students express their emotions and receive targeted suggestions for improving self-regulation (Office of Educational Technology, 2017). In addition, a number of apps are available that help bridge the gap between the real world and the virtual environment by providing timely support for conflict resolution and emotional regulation (Office of Educational Technology, 2017). However, the use of apps to develop EQ is still in its infancy.

Particular wearable devices can provide teachers and parents with further opportunities to build a child's social and emotional intelligence (World Economic Forum, 2016). These skills can also be fostered through simulations, interactive videos, direct computer-assisted instructions of social skills and social problem solving, etc. (Goldsworthy, 2002). Many of the digital games available can help increase self-awareness, empathy, cooperation, social awareness, and problem-solving, while effectively decreasing the number of disciplinary referrals and in-school suspensions (Office of Educational Technology, 2017). Another study showed that technology-enabled learning environments can develop students' critical thinking and higher-order thinking skills that are vital in the 21st century (Ertmer, et al., 2012).

EdTech and its Negative Impacts

Despite the above-mentioned benefits, technology can also have negative impacts on learners' EQ skills. Research suggests that heavy reliance on technology at a young age can diminish children's emotional intelligence (Grover, 2017). As spending hours with digital tools and gadgets minimizes the time learners spend in face-to-face interactions, it may also lower their emotional intelligence, and divert their attention from the reality (Ramasubbu, 2015). According to Carter (2017), EdTech may result in loss of communication among peers as well as extra stress, which may create a barrier in developing emotional intelligence. Technology can also result in diminishing motivation and empathy between students (Carter, 2017).

Many of the educational computer games that the students want to play regularly can become highly addictive. When they spend more time with their virtual friends than their real-life friends, it may damage their interpersonal and social skills, and can also make them emotionally unstable (Delwiche, 2006). Online game addiction

can also result in aggression, narcissistic personality traits, low levels of self-control, and less effective social relationships (Kim et al., 2008). Besides, addiction to smart gadgets contribute to developing shorter attention spans and increasing boredom, and learners gradually become excluded socially (News-Medical.net, 2017).

Learning with computers can have other harmful impacts on the learners. For instance, it can increase anxiety and debilitating thoughts that hinder effective performance (Heinssen, Glass, & Knight, 1987). Fear of social embarrassment and negative feelings can also enhance due to the use of computers in the learning process (Russell & Bradley, 1997). At the same time, students often fail to control their emotions and sometimes become frustrated and desperate when they fail to escape from a seemingly straightforward error while using computers for learning (Kay & Loverock, 2008).

Learners may often become aggressive when they frequently use computer and video games for learning or entertainment. This also leads to decreases in pro-social behaviors and permanent changes to the learner's attitudes and beliefs (Boyle, Connolly, & Hainey, 2011). They often start losing motivation when they are unable to complete any task assigned to them or do not find that task interesting and worthwhile. In some cases, they also prevent using technology in learning and show negative attitude when they are advised to use computers and games for learning purposes (Boyle, Connolly, & Hainey, 2011).

Due to technology, learners become more reactive and less reflective. They have less time with their own thoughts and feelings, which disables self-reflection and self-awareness. They also become emotionally immature and often indulge in bullying and angry outbursts. Furthermore, EdTech products can reduce their coping skills and breed reclusiveness and isolation (Grover, 2017).

Why EdTech in EQ is Currently Limited

Research on EdTech in EQ is still at the nascent stage. The researchers are still not aware of the best possible ways to implement technology for boosting EQ skills. At the same time, limited awareness of emotional intelligence and its benefits and low-level of funding and resources limit the development of new tools and technology for EQ. The educators and policymakers are still unsure about which technology holds the most promise for developing EQ skills or how to use those technologies in the best possible manner (World Economic Forum, 2016). Again, the rising cost of buying EdTech products has also become a barrier for the schools to adopt these products for improving the EQ skills of the students (Kramer, et al., 2010).

Developing an educational game or an application is not easy and straightforward, as it involves incorporating the learning outcomes and objectives (Boyle, Connolly, & Hainey, 2011). This has also limited the widespread use of EdTech products by the students from every part of the world.

How to Minimize the Negative impacts of EdTech in EQ Learning

In order to Minimize the Negative impacts of EdTech in EQ learning and make the use of technology in EQ learning more effective, some specific steps need to be taken. For instance, the learners should be taught the best possible ways to become responsible digital citizens by using proper online etiquette. At the same time, they must try to become competent with using technology in ways that are productive, meaningful, safe, and respectful (Office of Educational Technology, 2017).

The developers of educational games and apps must try to make sure that these EdTech products do not become addictive for the students. This will ensure that students only spend quality time with these apps and games and make their use more useful and productive for their emotional development. Proper care should be given so that students can minimize tech dependence and do not give priority to technology over meaningful communication.

EdTech must ensure that students are positively engaged in their learning. Through supporting positive emotions, technology should allow the learner to discover new possibilities and ideas, as well as promote higher

cognitive flexibility. While using technology, if the students feel engaged or delighted, then it can impact their learning in a positive way. Hence, proper care and planning should be done before incorporating technology with the learning process (Boyle, 2016).

Teachers also play a major role in aligning educational technology with content and also in facilitating student learning. They need to spend more time to address the social and emotional needs of the students, in addition to their academic accomplishments. They should also focus on creating an appropriate technology-based learning environment where students can be more creative and feel encouraged to do new things and think differently. Through meaningful collaborative group work using technology, teachers can reduce students' negative emotions like isolation. Efforts need to be taken to make teachers more comfortable to the EdTech so that it does not become a time burden for them to learn and adapt tech into their classroom. Parents should also limit the tech use of all of their kids so that they consider technology as a tool, not the way of life.

Efforts should be taken to make sure that technology is personalized in a manner that accounts for students' motivations, emotions, behaviors, and learning styles. All technology tools should look at how they impact both learning, motivation, and EQ, especially when it comes to young learners. Educators need to ensure that technologies only facilitate content knowledge and skill development, and also to ensure that they are safe, promoting healthy learning, and promoting the development of lifelong EQ skills.

Conclusions

In this age of information and communication technology, the use of technology in the learning and teaching process has increased quite significantly. This raises the question of how to effectively leverage technology in a healthy and sensible manner that brings tangible benefits to the learners while reducing negative and unintended consequences. Due to the importance of emotional intelligence, more emphasis needs to be given on integrating EQ education in the classroom that can make the students healthy, intelligent and help them tackle academic and life stress and anxiety. Educators and school administrators need to decide how or which technologies can most effectively benefit students' development of emotional intelligence. Learning about the negative effects of EdTech can be vital for educators and policymakers when they decide to choose the appropriate technology for students. The recommendations proposed in the study will help educators working in the field of EQ and education technology to minimize the negative impacts of using technology in EQ learning.

References

- Al-Faouri, A. H. A. (2011). Investigating the impact of emotional intelligence on technology learning. *International Journal of Engineering & Technology*, 11(3), 58-78.
- Boyle, A. (2016). *Emotional Regulation and Technology in Various Educational Environments*. Unpublished Thesis, Sacred Heart University, Fairfield, CT. Retrieved from <http://digitalcommons.sacredheart.edu/edl/12>
- Boyle, E., Connolly, T. M., & Hainey, T. (2011). The role of psychology in understanding the impact of computer games. *Entertainment Computing*, 2(2), 69-74.
- Business Wire. (2014, May 7). *New Mood Meter Mobile App Teaches Emotional Intelligence*. Retrieved from <https://www.businesswire.com/news/home/20140507005412/en/Mood-%20Meter-Mobile-App-Teaches-Emotional-Intelligence>.
- Carter, J. J. (2017). *Technology Integration and English Language Learners* (Doctoral dissertation, Lindenwood University).

Coffman, V. G. (2013). The perceived technology proficiency of students in a teacher education program (Doctoral dissertation, Kent State University). Retrieved from ProQuest Dissertations and Theses database. UMI Number: 3617732.

Delwiche, A. (2006). Massively multiplayer online games (MMOs) in the new media classroom. *Educational Technology & Society*, 9(3), 160-172.

ET. (2017). 37% rise in cyber bullying reported in schools. Retrieved from <https://edtechnology.co.uk/Article/37-rise-in-cyber-bullying-reported-in-schools/>

Ercan, O., Ural, E., & Köse, S. (2017). The Effect of Web Assisted Learning with Emotional Intelligence Content on Students' Information about Energy Saving, Attitudes Towards Environment and Emotional Intelligence. *Science Education International*, 28(1), 78-94.

Ertmer, P. A., Ottenbreit-Leftwich, A. T., Sadik, O., Sendurur, E., & Sendurur, P. (2012). Teacher beliefs and technology integration practices: A critical relationship. *Computers & Education*, 59(2), 423-435.

Goldsworthy, R. (2002). Supporting the development of emotional intelligence through technology. *Computers in the Schools*, 19(1-2), 119-148.

Grover, S. (2017). How Technology Lowers Emotional Intelligence in Kids. *Psychology Today*. Retrieved from <https://www.psychologytoday.com/us/blog/when-kids-call-the-shots/201707/how-technology-lowers-emotional-intelligence-in-kids>

Heinssen Jr, R. K., Glass, C. R., & Knight, L. A. (1987). Assessing computer anxiety: Development and validation of the computer anxiety rating scale. *Computers in human behavior*, 3(1), 49-59.

Kay, R. H., & Loverock, S. (2008). Assessing emotions related to learning new software: The computer emotion scale. *Computers in Human Behavior*, 24(4), 1605-1623.

Kim, E. J., Namkoong, K., Ku, T., & Kim, S. J. (2008). The relationship between online game addiction and aggression, self-control and narcissistic personality traits. *European psychiatry*, 23(3), 212-218.

Kramer, T. J., Caldarella, P., Christensen, L., & Shatzer, R. H. (2010). Social and emotional learning in the kindergarten classroom: evaluation of the Strong Start curriculum. *Early Childhood Education Journal*, 37(4), 303-309.

Lim, J. S. Y., Harper, B., & Chicharo, J. F. (2014). Academic Use of Social Media Technologies as an Integral Element of Informatics Program Delivery in Malaysia. International Association for Development of the Information Society. In *Proceedings of the International Conferences on Educational Technologies (ICEdTech 2014)*, 186-190.

Mayer, J. D., & Salovey, P. (1997). What is emotional intelligence? In P. Salovey & D. J. Sluyter (Eds.), *Emotional development and emotional intelligence* (pp. 3-31). New York: Basic Books.

News-Medical.net. (2017, April 12). *Excessive smartphone use leads to social isolation and personal, workplace problems*. Retrieved from <https://www.news-medical.net/news/20170412/Excessive-smartphone-use-leads-to-social-isolation-and-personal-workplace-problems.aspx>

Office of Educational Technology. (2017). Reimagining the Role of Technology in Education: 2017 National Education Technology Plan Update. *US Department of Education*. Retrieved from <https://tech.ed.gov/files/2017/01/NETP17.pdf>

Ramasubbu, S. (2015). Does Technology Impact a Child's Emotional Intelligence? *The Huffington Post*. Retrieved from https://www.huffingtonpost.com/suren-ramasubbu/does-technology-impact-a-childs-emotional-intelligence_b_7090968.html

Russell, G., & Bradley, G. (1997). Teachers' computer anxiety: Implications for professional development. *Education and Information Technologies*, 2(1), 17–30.

Salovey, P., & Mayer, J. D. (1990). Emotional intelligence. *Imagination, cognition and personality*, 9(3), 185-211.

Saunders, G., & Klemming, F. (2003). Integrating technology into a traditional learning environment: Reasons for and risks of success. *Active learning in higher education*, 4(1), 74-86.

Six Seconds. (2018). EQ Coach. Retrieved from <https://www.6seconds.org/tools/apps/>

World Economic Forum. (2016, March). New Vision for Education: Fostering Social and Emotional Learning through Technology. Retrieved from http://www3.weforum.org/docs/WEF_New_Vision_for_Education.pdf

Yale Center for Emotional Intelligence. (2014). The Mood Meter App is Here. Retrieved from <http://ei.yale.edu/mood-meter-app/>