Literature review on perceived usefulness of students electronic devices

Technology, Development

\n[toc title="Table of Contents"]\n

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1. Literature Review \n \t
2. Research Model \n \t
3. References \n

\n[/toc]\n \n

Literature Review

The rapid emergence of the new media and the accessibility and the “ must have” trend regarding the innovative, breakthrough electronic devices (smartphones, tablets, netbooks, laptops, etc.), fulminated in the students’ environment with using these devices in the classroom setting, for various purposes or activities, not directly related, or totally not related with the education purposes.

Information communication and technology (ICT) is considered to be a sound element leading the way to modernization throughout the world, even in the third world or fourth world countries, where, as a Microsoft report (2007, p. 7) indicates, ICT enables growth and social and economic development, underlying the most proliferate opportunities for applying technologies for poverty reduction.

Inserting ICT in education is supposed to bring consistent support to teachers and educators for modernizing the teaching methods, entering into a new learning millennium, where breakthrough hardware, software and communication devices are no longer perceived with skepticism and lack of trust, but are integrated in the educational programs for attaining an

enhanced learning efficiency and increased educational performances (Hennessy, Onguko, Harrison, An’ondli et al., 2010, p. 6). Likewise, using ICT in education is also significant for the students, as it brings them in close contact with learning how to operate in the new millennium, offering real opportunities for understanding this environment that can be later fructified into careers that utilize new millennium technologies (Bingimlas, 2009, p. 235).

However, the integration of new technology in schools, mostly in classrooms from the underdeveloped countries meet the barriers of the lack of proper training for utilizing these devices or of proper technicians to assist with teachers and students with the use of these technologies (Bingimlas, 2009, p. 237). This is why, a primary concern in introducing technology in schools is to initially train the teachers, educators and administrators and to improve their technology skills. As such, many states are setting guidelines for schools on how to use educational technology more effectively and standards for teachers and administrators on the level they need to meet for using technology for teaching purpose (Noeth and Volkov, 2004, p. vii).

As benefits of introducing ITC in classroom environment, for educational purposes, a report prepared by Noeth and Volkov (2004, p. vi) mentions that technology enables teaching and learning to provide an organized structure and materials for students, enhances the interaction between students, teachers and parents anytime, anywhere, facilitates the authentication and prioritization of Internet files required in classrooms, generates visual content and simulations as well as interactive educational and scientific structures and models, facilitates automated translation or it can be used as

an extension for individuals with disabilities. Another benefit of ICT in schools is that the use of technology through various devices enhances the equity in developing countries and not only, as they allow isolated schools to interact with learning tools and practices or resources used by schools from other realities, linking students from around the globe through virtual reality (Hepp, Hinostroza, Laval & Reibein, 2004, p. iv).

Referring to the enhanced communication between students and teachers, new technology such as smartphones permits teachers to better reach their students for various educational purposes, such as applying surveys, pop quiz, etc., through tools such as Poll Everywhere, which allows users to post their votes by using their cell phones (Garland & Tadeja, 2013, p. 18). This aspect shows how new technology employed into mobile devices can determine teachers and administrators to better reach students.

Traxler (in Berge & Muineburg, 2013, p. 129) also refer to the advantage that the mobile learning (m-learning) provides for developed countries for addressing the educational disadvantaged and for developing worlds for creating an integrated approach on learning, connecting through technological devices the educational content separated by space.

Regarding the purpose of using the technological devices in schools, Noeth and Volkov (2004, p. vii) remark that technology serves for teaching and applying practical and sophisticated digital content, for providing simulations of real world experiences, developing cognitive thinking and extending learning outside the scholastic environment, for providing access to a vast area of information available through the use of Internet, for enhancing the productivity, through the use of software such as spreadsheets, databases or

word programs for effectively managing information and generate sophisticated educational materials and products.

It is considered that tablets, smartphones, Blackberries, e-readers and other technology alike will represent the educational support of the future, as mobile applications will reshape the format of courses and educational materials and teachers, administrators and educational decision-makers will understand the benefits of integrating technology in the classroom curricula for increasing students' productivity, reducing paperwork and access immediate access to educational content (Berge & Muilenburg, 2013, p, 127).

This study previously mentioned the available resources in a classroom setting for supporting the integration of electronic devices. When discussing about resources, researchers indicate that a considerable concern and still a challenge for including the electronic devices as parts of the formal education in schools, is the internet access, for offering general usage to students (Alexiou-Ray, Wilson, Wright & Peirano, n. d., p. 60). This challenge often hinders schools and districts from including technology into the formal teaching curricula, altogether with the lack of proper training for the teachers on how to optimize technology in the educational interest.

Beaton and Gilbert (2013, p. 135) observe that as part of the vast classification of online learning, mobile learning includes focused digital applications for serving learning objects available through Internet-enabled mobile devices. Nowadays there are districts that encourage the educators from their local schools to use online tools, such as teachers' website, for uploading teaching documents and other useful materials, which can be

accessed 24/7, allowing even the students who are absent to check the online materials from their homes, from their smartphones, tablets, etc. (Richman, Permuth & Richman, 2013, p. 187).

Referring to the actual integration of mobile devices in the educational system, Berge and Muilenburg (2013, p. 129) provide the example of three European countries, respectively Britain, Sweden and Italy, which developed the m-learning program between 2001-2004, supported by the European Commission's Information Society Technologies, which addressed the literacy, numeracy and life skills of teenagers with ages between 16 and 24 years old, helping them improve their learning abilities, their motivation and engagement by providing interactive educational content (applications, online games), personalized portal, online soap opera or intelligent tutoring system. As this research further indicates, the entertaining part was mostly appreciated by students, as they engaged in the game related content, which increased their learning engagement and motivation and entertainment was the segment to which learners in India also responded best in another educational project meant to include learning on mobile devices for improving the students' English-language skills, as a required condition for achieving socioeconomic success; in the Indian context, however, the entertainment aspect was related and adapted to the cultural differences of children from this developing region and it synchronized the technology of integrating sound learning principles with accurate and concrete learning design patterns (Burge & Muilenburg, 2013, p. 133).

Approaching an " MTV-style of learning" seems to be the recognized trend in the current classroom setting, for adapting the educational content to the

students' interests, wherein the teachers should appeal to students' responses to the new media and interactive content, by creating " jazzed up PowerPoints", supported by a flat-screen television, as Garland and Tadeja (2013, p. 20) exemplifies.

Such a situation is an example of teachers using the technology for substituting and/or augmenting the antiquated educational content, aiming to match the old curriculum documents with the new technology, for increasing students' engagement (Godwin, 2012, p. 20).

Also related to students' increased motivation and engagement in learning through the utilization of mobile devices, Goodwin (2012, p. 21) notes that employing tablets or mobile phones for learning increase students' organizational skills, proactive and independent learning and self- motivation in identifying educational content appropriate for their learning needs

An efficient model for integrating mobile devices, such as iPads, in the classroom setting indicates that in such a setting iPads have Internet connectivity, with restricted access to other websites irrelevant for the teaching purposes and it allows the exporting of student work on a device (Goodwin, 2012, p. 10).

Goodwin (2012, p. 19) notes that for making the mobile technology more available and more relevant in the classroom setting, there needs to be applied an adjustment of the current educational content, which is still based on old curricula, which needs to be reshaped into a digitized content for suiting the use of technology and updated to the necessities of the 21st century. The need to adapt the current curricula and educational methodologies to the needs and operability of the nowadays world is also

recognized in other studies. As such, Berge and Muilenburg (2013, p. 256) note that research methodologies do not support the need for change from classroom face to face pedagogies into m-leaning pedagogy and that consistent improvement could be achieved with a proper involvement into changing the course contexts for supporting the technology based educational information.

Referring to administrators and teachers' need to better reach the students in the current technological context, where students in developed and developing countries have become very sophisticated in using various mobile devices, recent research indicate that they need to adapt to the students' interest and the old lecture format no longer represents an interest for students who are rapidly absorbed by the graphics, accessibility and user-friendly content or format of digitized materials (Garland & Tadeja, 2013, p. 18). Therefore, educators and administrators need to take into consideration the students' changing behavior towards more sophisticated learning tools and they need to use digital content, which is popular among students, customizing the educational content for various social networking platforms, for MP3, iPads, smartphones, tablets and other modern electronic devices use, so that the students to become more engaged, more creative and to improve their academic achievements (Garland & Tadeja, 2013, p. 18).

Discussing about enhancing students' participation and interest in the educational content, Godwin (2012, p. 20) notes that while aiming to match technology to antiquated educational documents, teachers may make use of iPads for improving their opportunities of transforming learning by employing

technology for modifying and redefying teaching and learning, providing interesting and enthusiastic learning experiences for the students that use iPad, appealing to their digital culture.

Berge and Muilenburg (2013, p. 259) indicate that within the flip classrooms teachers are shifting the content and the structure of learning, engaging students in m-learning through direct instruction outside the classroom and assisting students with their homework in the classroom, which allows teachers to offer students instructional video content in the various learning cycles. In relation to the subject of this research, such a situation requires for the students to use their mobile or smartphones, tablets or other new technology for checking and analyzing the video content recommended by the teachers.

Richman, Permuth and Richman (2013, p. 191) offer an eloquent example regarding the use of electronic devices in a classroom setting, discussing about teachers who allowed their students to use their own devices (mobile phones, smartphones, tablets, etc.) for educational purposes, such as downloading mathematic apps or timing their effectiveness, indicating that it is teachers’ responsibility to educate students regarding the fact that such devices are not just for playing, but that they can be properly utilized as academic tools.

However, this is a positive model that encourages the integration of technology in the education, supported by teachers who are open to optimizing technology in the benefit of teaching, engaging students and facilitating their own teaching methods and the students’ approach to learning, creating an engaging and interactive way to determine students to

appropriate educational content. Nevertheless, there is also the other side of the coin, which includes teachers who are reluctant and pessimistic in their perception about change, where change implies integrating technology and electronic devices into the classroom educational needs, which can be explained as a lack of awareness about information communication technology specificities and policies and are also unaware and incredulous about the benefits of ICT (Oladosu, 2012, p. 46).

For sustaining this incredulous attitude regarding the benefits and effectiveness of using technology and electronic devices in classroom setting, recent studies indicate that the students' use of electronic devices in the classrooms, such as laptops, tablets, smartphones, mobile phones, etc. conduct to students being inattentive to the information that are being communicated by the professor, as they engage in other activities specific to electronic devices, such as social networking, searching for music or video content and any other information not directly related to the educational course that the students attend (Conely, 2010, p. 48). In addition, having colleagues using electronic devices in the classroom also generates the distraction of other students from the course, as they are either interrupted from their thinking process by the electronic devices of their colleagues, either they are engaging in the activities in which their colleagues who use the electronic devices are engaged in, such as listening to songs, watching videos, playing games, or watching over their colleagues shoulders to follow on their conversations on Facebook, What's up, Twitter, etc. (" Teaching with Technology", 2012).

On the other hand, recent research has also found that this situation is likely

to occur when electronic devices are not integrated in the course material as support logistics. As such, when laptops, tablets, smartphones and other electronic devices are uses and even required in the class format and integrated to form an interactive course based on the use of these devices, research indicate that students are more engaged in the courses and the use of these devices for other purposes (social networking, watching video content, playing videogames, etc.) is reduced (Conely, 2010, p. 48). It is reduced, but not entirely, as the students apply multitasking on their electronic devices and mingle the educational materials learned in the classroom with other activities, changing the tabs from one content to another, which again, indicates a reduced focus on the classroom taught knowledge (“ Teaching with Technology”, 2012).

For addressing this problem, students need to be educated on how to use the electronic devices for benefiting of increased performances and improved results in their academic education, but the ones who need to educate them on this aspect are the teachers, with the support of the educators. As such, for facing the challenges of the modern and global world, teachers need to be taught on how to integrate m-learning in the courses and in the same time they must be trained towards developing a flexible approach on technology, considering the fact that electronic devices and technology evolve from one day to another, and the administrators must support these educational changes, being aware that they will improve not only the educational system but also will facilitate the organizational and administrative tasks (Oladosu, 2012, p. 49; Alexiou-Ray et al., n. d., p. 60).

Research Model

For assessing the students', educators' and administrators' perceived usefulness regarding the electronic devices use for education and their willingness to incorporate the electronic devices into the learning/teaching/administrative tasks, this research proposes a research model, based on a qualitative method, namely the responsive evaluation. Responsive evaluation is used as a qualitative measure for investigating and evaluating how responsive a certain program or phenomenon is to those taking part in the research (Clarke, 2005, slide 44). Applying this definition to the conducted research, the responsive evaluation should assess how responsive the m-learning (incorporating electronic devices into learning or teaching or administrating) is for students, educators and administrators.

The responsive evaluation method was coined by Robert Stake in 1975, and was later broken down into four generations in the historical development of evaluation by Guba and Lincoln (in 1989): measurement (that includes quantitative data), description (that refers to the identification of the features involved in the program/phenomenon), judgment (that assess the quality of the program/phenomenon based on a comparison between the set standards and the actual effects) and negotiation (that indicates the essence of the responsive evaluation) (Abma, 2005, pp. 279-280).

The responsive evaluation model will be based on a survey that will be administered to colleague students (for assessing their perceived usefulness of the electronic devices use for educational purpose and willingness to integrate their electronic devices such as smartphones, tablets, iPads, etc. into learning), teachers (for evaluating their perceived usefulness regarding

the use of electronic devices into teaching and their openness to adapting the teaching methods to incorporating electronic devices and m-learning tools into teaching) and administrators (for analyzing their perceived usefulness regarding the use of electronic devices on academic use and if they consider useful using electronic devices for facilitating their organizational activities).

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