Research Proposal

Smartphones in the Classroom

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Introduction

Today's classrooms are encouraged to integrate technology in order to assist students in the direction of 21st century learning. As a 21st century learners, students are encouraged to collaborate, engage, self-direct, communicate, and think critically using modern educational tools. These educational tools take learning to a whole new direction and each year they continue to evolve. These innovative technological tools include smartphones, and while many teachers are supportive of smartphones in the classroom, many are also apprehensive and prefer not to encourage the use or incorporation of these personal mobile devices into their curriculum.

Although smartphones are entwined in almost every part of our life, many schools are still not using this mobile technology in the classroom. Many instructors see smartphones as a distraction or a risk for unethical use, rather than as an advantage or enrichment in instruction. Many teachers have a zero-tolerance policy when it comes to cellphones use during class time. The assumption, for the most part, is that students are using their phones to text and message friends, or to access and post updates on their various social media sites.

Low funding in technology also results in many schools not having the ability to provide each student with laptops or tablets. Unfortunately there has been a continuous rise in funding technological tools regardless of the obvious important role they play in today's classrooms. Allowing the use of smartphones in the classroom can assist in reducing the numbers of students who do not have the ability to access the internet during class time for assigned technology motivated instruction, due to minimal laptop or computer availability.

Smartphone use in the classroom also assists in pushing the learning environment into a student centered one that consists of learning with innovative play. This method of 21st century learning encourages the students to have control of their own learning using technological tools, while the instructor serves as a facilitator or guide in building the required knowledge.

Problem Statement

Students in today's classroom are encouraged to be 21st century learners. This includes the use of technology along with innovative ways of learning. With the cuts in technology funding, some school resort to students using their personal devices, like smartphones, to actively engage in technology focused lessons. Although smartphones are readily available and at the hands of most students, teachers are not taking advantage of this tool to enhance learning and incorporating technology into the classroom. Many classrooms are left behind and do not board the technology bandwagon because educators feel that smartphones would only contribute as a distraction, unethical use, and not as a tool for learning.

Purpose of the Study

The primary concern of this research is to examine the incorporation of smartphones in the classroom and the impact they have with student engagement and motivation at the secondary level. The purpose is to also evaluate their effectiveness as a valuable technological classroom tool in comparison to those classrooms that continue with a traditional method of learning.

Literature Review

The use of mobile devices has become common among a wide range of age groups due to affordability and availability (Newhouse, Williams, & Pearson, 2006). Today's student are

technologically inclined and are engaged and tend to succeed when mobile devices are used in the classroom. According to Nielson Research, in 2013, 70 percent of teens, aged 13-17, now own smartphones (Kerr, 2013). Young people are acquiring smartphones at a staggering rate and the numbers are increasing yearly.

The use of smartphones can contribute to enhance the communication between teacher and learners (Ben-Av, 2016). Numbers show that a sizable percentage of students use their smartphone for internet access daily, many consistently throughout the day. If this is the only digital device for students to access, and if the push by education leaders nationwide is to incorporate technology into the classroom, the smartphone can serve as a partner with teachers to create engaging lessons that create global digital citizens (Clayton and Murphy, 2016).

Smartphones in the classroom give students and teachers many creative options that can be used to enhance the classroom experience. Students are learning with a device they feel comfortable with as most have been using smartphones from an early age.

Preparing students for the future. Educators carry a responsibility in preparing students for the future, including meeting the demands of an increasing technological world. In order to do this, it is essential to incorporate technology in the classroom. Learning to incorporate mobile devices, like smartphones, will broaden a student's knowledge, and their use for these devices will continue to be a significant part of their career paths as adults. Incorporating smartphones into the classroom will prepare students for the future and will also assist them in transitioning into the workforce. The challenge for educators is not to dismiss or keep up with students' latest technological know-how, but to create meaningful learning experiences in which students are taught how to apply their knowledge to solve real-world problems (Daggett, 2010).

Innovative learning. Most traditional methods of teaching are no longer supported in this period of 21st century learning. While there are items that must be memorized, we need to prepare students to understand how systems work and, most importantly, we need to prepare students to work both independently and in a team. In order to teach those 21st century skills and that 21st century content—the "how"—we can't be using tools based on 18th century pencil-and-paper (Norris, Hossain, & Solowau, 2011). Today's student's rarely reach for a dictionary or encyclopedia as their source prime for information.

The use of smartphones in the classroom puts a wealth of information at the student's fingertips. According to a USA Today survey, students admit to using cell phones to store information for a test, send answers or a picture of a test to friends, or search the web. Smartphones keep students connected locally, socially and worldwide.

A smartphone is a small device with big capabilities. Various applications and tools are built in to today's smartphones or can be purchased or found for free online. These applications and tools are similar to what can be found on a laptop or desktop computer. All in all, there are more than 1.2 million apps available, over 10 percent of which were said to be educational or reference apps (5 Benefits of Using Cellphones. 2012). Smartphone applications are cost-effective, easily accessible, and do not add no extra weight to an already bulging backpack.

Cellphones and Smartphones typically have a camera that can be used as a memory aid. Rather than taking lengthy notes, a students can take a picture of important information and use later for studying. Taking pictures of relevant information can assist those students who are visual learners as well as those students who might have been absent when the information was presented. A smartphones recording capabilities can also be used for voice memos, reminders or lectures that a student may later use as a reference. Students can also multitask by allowing their

phone to record a lecture while taking their own notes on paper. The information recorded or photographed can be retrieved and studied anytime the student has access to their phone. Cellphones and smartphones in the classroom allow students take more responsibility for their own learning. An EDUCAUSE survey conducted in 2014 indicates that 95% of the students surveyed own smartphones and 77% indicated they use it for learning purposes (Rodriguez, 2015).

Learning beyond the classroom. Incorporating cellphones and smartphones inside the classroom also allows for learning outside of the classroom**.** Likewise, what the students do outside of class is very much the same as the work they do inside of class (Norris, Hossain, & Solowau, 2011). Smartphones can also increase collaboration by allowing students to participate in group projects with their individual devices. The accessibility of application, tools, and online textbooks at any time also allows the student to fulfill homework requirements, study, and continue learning after school hours.

When a student demonstrates enjoyment and engagement inside the classroom, they are more likely to study outside of the classroom. The inclusion of cellphones and smartphones in learning assists in this engagement as it is a tool most students already enjoy using. A cellphone or smartphones portability plays a crucial role the consistency of its use. The weight and size of a smartphone is negligible, it literally fits in the palm of an individual's hand, and since toting it requires almost no conscious effort, students tend to carry them around constantly (Norris, Hossain, & Solowau, 2011). Learning can take place at any location a student has use of their cellphones or smartphones and the use of a computer becomes obsolete. Mobile learning enables teachers and learners ubiquitous and seamless access to information (Kukulska-Hulme et al.,

2009; Seppälä & Alamäki, 2003), and convenience, expediency, and immediacy are valuable to teachers and enhance students' learning (Kynäslahti, 2003).

Disadvantages of Smartphones in the Classroom

Using cellphones and smartphones in the classroom also has its disadvantages. Traditional lecture method allows transfer of knowledge to a large number of students simultaneously. It puts the responsibility for the class' content, organization, and pace in the hands of an experienced and knowledgeable person. It may also help students who need external structuring to complement other learning sources (Ben-Av, 2016). When using cellphones or smartphones, students become too dependent on these devices to an extent where they no longer use their thinking abilities and to answer simple questions, instead they grab their cell phones (Rodriguez, 2015).

Many educators find it difficult to compete with an entertaining YouTube video vs. a traditional classroom lecture. Frustration arises when teachers and administrators are left to make a choice between implementing the approaches of teaching in this new digital age, and the reality that sometimes mobile devices can distract and compromise the focus of the students. The various perspectives and differences of opinions of when and how a cellphone or smartphone should be used amongst school districts also creates confusion, and fuels the uncertainties educators, parents, and community members might have towards the effectiveness of cellphones and smartphones in the classroom.

Educators are also concerned with a rise in cyberbullying and other inappropriate use of cellphones and smartphones in the classroom. The use of cellphones and smartphones in the classroom allows for cyberbullying during school hours. The use of phones in the classroom also

allows for inappropriate texts, messages or interaction amongst students that cannot be directly monitored or noticed. Cheating can also be problem as students have easy access to a device that can assist them with searching for an answer via the internet, or look back at saved notes or photographs of the material being assessed.

Cyberbullying. Bullying was once limited to physical or verbal abuse. In this technological age, cyberbullying has surfaced. Cyberbullying includes mean or threatening text messages and emails, as well as embarrassing pictures and videos. Cyberbullying also includes creating fake profiles or sending mean and threating messages via social sites.

Cyberbullying is a serious issue with teens in middle and high school. Although most cyberbullying happens at home, allowing the use of cellphones and smartphones during school hours, opens up the doors for cyberbullying to occur. When students have access to their phones in the classroom, they can easily take a picture of a student without permission, and can later use that picture to embarrass that student or to embarrass a teacher. Cyberbullying might be more difficult control when students have free use of their phones and when it happens in class, it is a serious matter that teachers cannot ignore. Cyberbullying humiliates and can also traumatize the victim. If it occurs during school hours, it can be detrimental to the reputation of the school.

Cyberbullying cannot be completely prevented unless smartphone use is being monitored very closely. The risk for cyberbullying should not be a reason to rule out the use of mobile devices in the classroom. It is important that teachers continuously emphasize the rules and importance of internet etiquette, respect, and simply teach students right from wrong. It is important to teach students to be good digital citizens and follow through with consequences in the event internet and behavioral policies are violated.

Distraction. High levels of smartphone use by teens often have a detrimental effect on achievement, because teen phone use is dominated by entertainment, not learning, applications (Barnwell, 2012). Teachers, while accepting the benefits of mobile learning, raised concerns about potential ethical issues such as cyber-bullying, privacy, archiving and record keeping, sharing classroom experiences and artifacts, parental and student informed consent, and e-safety (Aubusson et al., 2009; Cushing, 2011). Educators should work with children to understand the capacity of smartphones for learning and civic engagement, rather than being a classroom distraction (Clayton and Murphy, 2016). Teachers should also emphasize the educational value of smartphones and encourage students to use it as a powerful educational tool.

However, if teachers encourage use of the smartphone in their classroom through "engaging instruction and the continued teaching of digital responsibility, they can move students from being digital natives to digital learners" (Amling, 2015).

Research Questions

In this study, the effectiveness of smartphones integration and their impact on student engagement and motivation in a secondary classroom will be examined. The following questions will be asked:

- What are the positive effects of smartphone integration in the classroom?
- What are the negative effects of smartphone integration in the classroom?
- Can smartphones in the classroom be used as a valuable learning tool?
- Does student engagement significantly increase with the use of smartphones?

Study Design

A lesson incorporating the use of smartphones will be administered and will be compared to a similar lesson that does not require the use of a mobile device but the practice of traditional methods of teaching. Smartphones will be used as an aid to complete and enhance the lesson in order to determine if there is an increase in student engagement and motivation. Teachers administering the lesson are technology oriented and are trained and experienced with the incorporation of technology in the classroom. All 30 students being observed hold intermediate technological skills but are from various secondary grade levels. The various grade levels will serve as variables in examining the success or failure of smartphone integration and student engagement and motivation in the classroom.

The presented information will be similar to prior assignments using traditional methods of teaching as well as other technological tools, like computers. For this study, students will be using their personal cellphone devices and are aware of the smartphone use policy in the classroom. Students are also aware of the consequences in the event these policies are violated.

Methodology

The research conducted will be used to determine the effectiveness of smartphones in the classroom. The research will also determine if smartphones in the classroom successfully engage and motivate secondary students in the lesson without posing as a distraction. The research will determine if smartphones in the classroom assist as an overall valuable learning tool.

A quantitative and qualitative study is being used to examine the effectiveness of smartphones in the classroom. The following methods of data collection will be used: (1) pre-

intervention and post-intervention student surveys will be conducted using a Likert scale format, (2) Likert scale pre-intervention and post intervention surveys will also be used for instructor and observer feedback, (3) teacher and observer observations of student engagement during both traditional teaching time and during the integration of smartphone use, (4) teacher and observer journals, (5) brief Likert scale surveys about smartphone integration (6) observation of completion times between the two methods of instruction. A pre-test and posttest analysis will be used to determine the results of the pre-intervention and post intervention Likert survey results as well as the completion time between the traditional method of instruction and that of the one using smartphones integration. The grade level of each student will serve as a variable.

Data will be collected while the researcher actively engages as a participant. The researcher will also observe and record behaviors as a non-participant. The pre-intervention and post-intervention survey given to all students and teachers will measure changes in students and teachers attitudes and beliefs regarding the implementation of smartphones in the classroom and their impact on student engagement and motivation. A Likert scale survey will also be given to students and teachers to compare the advantages and disadvantage of using smartphones in the classroom. Teachers will have the opportunity to state needed changes, areas of improvement, and other necessary feedback (via journal entries) that will assist in producing an effective and successful lesson. Learners will also be given the opportunity to evaluate, and provide preference and feedback for smartphone inclusion of the lesson. The researcher will serve as the primary instrument for observation and data collection

The observation and data collection will take place for two weeks. One will include traditional methods of teaching and one week will include smartphone integration. Learners will be observed throughout the course of the lesson to identify needs, motivation, and engagement

during traditional teaching time, and when incorporating smartphones. Teachers will be observed to compare interaction, knowledge, comfort levels, preference and overall engagement between the two lessons.

Further observation will be placed on the samples using smartphones. This observation is to effectively decipher whether the smartphone is being used as instructional tool and not a distraction. The data produced would be compared between the two samples and a conclusion on the effectiveness of smartphones in the classroom will be based on the overall achievement results of the lesson presented. The data will also allow for the determination of the possibility of future lessons incorporating smartphones. The overall benefits and disadvantages of smartphone use will be analyzed using the provided feedback.

Discussion

The study will take place in a classroom setting during normal classroom time. The participants will be 9th – 11th grade business students. The students will use their individual smartphone device. Using personal devices will assist in the evaluation of smartphones being a distraction. The use of personal devices also decreases the likelihood of technical issues arising due to the familiarity between the student and the device. Although each student will demonstrate their own individual knowledge and understanding, collaboration, assistance and feedback from other students is encouraged. Teachers will act as facilitators and will provide learners with instructions and assistance but will allow students to demonstrate their understanding and knowledge using their own ideas and creativity

Limitations of the Study

Limitations of the study include a small percentage of students to be observed. Only two educators in the district, one being the researcher, are considered tech savvy and are confident in their technological skills. Most teacher's district wide do not support the use of technology in the classroom or they do not implement it correctly. Lack of quality technological training has been provided to teachers at this district. This study will hopefully provide data that will encourage this district to pursue a more technological inclined attitude in the classroom and to promote 21st century learning.

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