

2013

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Kimaya Shanell Hudgins

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Abstract

Educators are beginning to work with students whose lives have been immersed in the 22st century media culture. Many of these tools include cell phones, game consoles, laptops, iPads, handheld game devices and television, just to indicate a few. This growing technology has been used mainly for entertainment purposes by the 21st century student and seen by others, especially educators, as a detriment to education and the intellectual abilities of these students. This paper describes the potential uses of Short Message Service otherwise known as text messaging in the high school English classroom, particularly how it might encourage interactions and increase engagement in the classroom. Since Short Message Service SMS requires reading and writing, exploration and further research in the ways this technology can assist adolescents in the development of literacy abilities is critical to truly reach the 21st century student.

Degree Type

Open Access Senior Honors Thesis

Department

English Language and Literature

First Advisor

W. Douglas Baker

Keywords

SMS, Technology, Digital Native, 21st Century Learner, Net Generation, Teaching

Subject Categories

English Language and Literature

INTEGRATING CELL PHONES AS TECHNOLOGY IN THE HIGH SCHOOL
ENGLISH CLASSROOM

By

Kimaya Shanell Hudgins

A Senior Thesis Submitted to the

Eastern Michigan University

Honors College

in Partial Fulfillment of the Requirements for Graduation

with Honors in Language, Literature, and Writing for Teachers through the
Department of English Language and Literature

Approved at Ypsilanti, Michigan, on this date April 19, 2013

Abstract

Educators are beginning to work with students whose lives have been immersed in the 21st century media culture. Many of these tools include cell phones, game consoles, laptops, iPads, handheld game devices and television, just to indicate a few. This growing technology has been used mainly for entertainment purposes by the 21st century student and seen by others, especially educators, as a detriment to education and the intellectual abilities of these students. This paper describes the potential uses of Short Message Service otherwise known as text messaging in the high school English classroom, particularly how it might encourage interactions and increase engagement in the classroom. Since Short Message Service SMS requires reading and writing, exploration and further research in the ways this technology can assist adolescents in the development of literacy abilities is critical to truly reach the 21st century student.

Introduction

In a time when technology is so important to functioning in today's society, there has been a significant shift in this generation when compared to others and the students that are a part of them. With this ideal in mind, there is no wonder why the learner from today, who can be referred to as the 21st century learner or digital native (Prensky, 2004, p. 1), acquire knowledge quite differently from the way students did even just ten years ago. Marc Prensky attributes such changes to a phenomenon based on the latest neurobiology research known as neuroplasticity. Neuroplasticity describes how "the brain constantly reorganizes itself all of our childhood and adult life" (Prensky, 2004, p. 1). The brain changes and organizes itself based upon the type of input that is received, and so stimulation changes brain structures.

Such an idea could potentially explain this difference between how are students is learning now versus how older students learned before. "Our children today are being socialized in a way that is vastly different from their parents" (Prensky, 2004, p. 1). Prensky goes on to list an overwhelming amount of data to show such a difference: 10,000 hours playing videogames, over 200,000 email and instant messages sent and received, over 10,000 hours talking on digital cell phones; over 20,000 hours watching TV, over 500,000 commercial seen and unfortunately at the very most 5,000 hours of time dedicated to reading books, and all of this is before a child even goes into college" (p. 1). The stimulation and experiences this new generation of students receive is quite different causing them to have a different brain structure.

This thought pushes, not only for a crucial restructuring of how teachers teach, to ensure they are realistically meeting students where they are, but also to appeal to these students' new and creative learning styles. Even the way teachers think about approaches and pedagogies they would traditionally use in their classroom must change. The 21st century learner is unknowingly

pushing for a change, a change that will cause schools to proactively and progressively restructure the traditional school setting.

In comparison to a more historical perspective for education progression, Kellner (2000) states that, “to dramatize the issues at stake, we should seriously consider the claim that we are now undergoing one of the most significant technological revolutions for education since the progression from oral to print and book based teaching” (p. 1). The culture of our society is quickly changing due to this technological revolution. Kellner (2000) goes on further to explain, that the transition to print literacy and book culture had involved a dramatic transformation of education this technological revolution too demands a major restructuring of our educational system today, with the incorporation of newly developed curricula, pedagogy, literacies, practices, and goals (p. 1). We now exist in an increasingly diverse, globalized, complex, and media focused society. “Students are growing up in a different world – a world of ubiquitous technology” (Tomita, 2009, p. 185), and these emerging technologies can and will provide unlimited possibilities for exciting new discoveries and developments into teaching pedagogies.

This rapid increase of the use of technology over the past decade has led to changes in the ways our young people gather and process information. This presents an interesting challenge for teachers in educating the students of today. Traditional classroom pedagogies that do not offer flexibility, immediate feedback, amongst other things that appeal to the 21st century learner, may not be enough to fully engage students. If hopes of creating a successful learning environment for intellectual stimulation and critical thinking skills to develop is the goal, integration of technology in the classroom is a road less taken we will have to cross more often. “Technology provides a vehicle to foster the development of communities, where learning is infused with social interactions among students with teachers, and with others who have traditionally been

considered outside the traditional structure of the school” (Tomita, 2009, p. 189). With this emerging technological revolution, educators must come to terms with the fact that the typical student that is born into a society like this is quite different, especially as a learner. In his article “Text Messaging and Implications for its use in Education” (2009), Tomita explains that, “in a rapidly changing world students will need to understand and master the use of 21st century technology tools to effectively communicate and collaborate together (p. 190). Such a statement speaks to the claim that educators must incorporate and teach with these tools so students fully understand the power these tools hold for their future success.

Related Literature

The beginning of accepting learners as different as they are today began with eLearning. ELearning allows students to access the educational curriculum in places outside of the traditional classroom setting with the use of technological devices. ELearning, a phenomenon that has been an important piece in reforming teaching pedagogies has opened the door to another facet that can be categorized under the category of eLearning, which is mLearning. Mellow (2005) states that the 2004 Mobilelearn conference in Rome says that “mLearning is a sub-set of eLearning--as such it needs to be considered within a blended learning strategy in the same way that any education institution or corporate training department needs to view all other learning delivery methods” (p. 471). “The ‘m’ in mLearning generally refers to mobile the delivery of content and learning interactions via mobile devices” (Mellow, 2005, p. 469). With the exclusion of laptops, this type of learning would include tools such as cell phones, iPads, iPod touches, and any other tablet device that is considered both portable and mobile (easily transported). In an environment where mLearners are present, they “typically view content and/or lessons in small, manageable formats” (McConatha & Praul 2007, p. 1). An mLearning methodology gives educators a chance to reach today’s students and make learning truly collaborative and interactive for students.

Kellner (2005) explains that traditional or modern education “emphasizes submission to authority, rote memorization and what Freire called the ‘banking concept’ of education, in which learned teachers deposit knowledge into passive students, inculcating conformity, subordination and normalization” (p. 2). This means, the idea of teacher is the all-knowing expert, the student is the amateur with little to no expertise, in other words, teacher speak, student listen, absorb, and repeat. Which for ostensible reasons leaves little to no room for creativity. As educators, we

should want to enhance the creative minds or outside-of-the-box thinking our students possess. Educators must teach their students to be critical thinkers, so they can take their creative thoughts and process them, turning them into discoveries, inventions, and so much more.

“In a traditional classroom environment, the instructor is solely responsible for interaction with the students. The instructor chooses to ask questions and decides which students are allowed to comment on the lecture” (McDonald, 2010, p. 45). With the traditional pedagogies of teaching, educators will unfortunately neglect the 21st century learner because these individuals take in information quite differently than in the past. There is difficulty in shifting from the traditional pedagogies because, “part of the challenge we encounter is due to the differences between students of the 21st Century and the faculty members at the front of the classroom. The chart offered by Rodgers et al. (2006, p. 3) below illustrates these differences:

Students	Faculty
Multitasking	Single or limited tasks
Pictures, sound, video	Text
Random access	Linear, logical, sequential
Interactive and networked	Independent and individual

Taking a closer look at these differences, the impact will unfortunately have a negative result on the learning of these 21st century learners. These new learners have traits and characteristics to their learning that their teachers may not necessarily be comfortable or familiar with. Our students are in a world of ubiquitous technology, where they have quick access to information in multiple different forms from audio, video, and condensed text. With such information, teachers can engage students and keep them interested in learning; therefore, faculty must “abandon the

notion that a lecture and reading assignment are enough to teach a lesson” (Rodger et al., 2006, p. 3). The teacher’s role in the classroom is shifting away from an independent and separated role to a more collaborative one with their students.

The direct style of traditional teaching lacks interactivity and immediate feedback, which is so important to this generation of students. This antiquated style of teaching is ineffective for the 21st century learner. With the technological revolution, there is a definite need for a thorough restructuring of the education system and in efforts to learn how we really need to reach our students. “Furthermore, the technological revolution of the present era makes possible the radical reconstruction and restructuring of education and society argued for in the progressive era by Dewey and in the 1960s, and 1970s by Ivan Illich, Paolo Freire, and others who sought radical education and social reform” (Kellner, 2005, pg 1). Students are different now and the divide is a digital one. The divide exists between the two different generations of teacher and student, which must be confronted. To do so, educators must become familiar with the characteristic differences with learning and processing, as well as the everyday life experiences of these 21st century students.

According to Holzen et al., (2006) in the article “Teaching the 21st Century Learner” the 21st century learner can be difficult to relate to by traditional or older educators because of the different relationship they have with information, interactions, and learning, explaining:

The 21st Century Learner has many education traits that older educators may not be familiar or comfortable with. These traits include gravitating toward group activities, thinking it’s cool to be smart, busy with extracurricular activities, identifying with their parents’ values and feeling close to them, respecting social conventions and institution being fascinated with new technologies, and being comfortable with racial and ethnic diversity. (p. 2)

Education needs to be relevant to the demands of the new millennia. Teachers and school systems must attempt to close the digital divide that separates teachers from their students. By

doing so they will have the opportunity to explore and acknowledge the positive impact mLearning will have for their classrooms, “educators need to be fleet of foot and adapt their material and methods of teaching to best fit this new breed of learners” (Mello, 2005, p. 470). MLearning is considered to have potential for growth in education and as a nation the use of technology in our schools, in our classrooms has to be considered. This is no easy task to accomplish; it brings challenges and requires not just teachers but those at the state and national level to find a way to successfully integrate technology in the educational system. “This Great Transformation poses tremendous challenges to educators to rethink their basic tenets, to deploy the media in creative and productive ways, and to restructure schooling to respond constructively and progressively to the technological and social changes that we are now experiencing” (Kellner, 2005, p. 1). Efforts thus far have been made at a national level to include technology in the educational standards.

The Common Core Standards is an example of how the importance of technology in the classroom is showing up in education. The Common Core Standards is a state-led initiative coordinated by the National Governors Association Center for Best Practices and the Council of Chief State School Officers (CCSS). These Common Core Standards were developed in collaboration with teachers, school administrators, and experts, to provide a clear and consistent framework to prepare our children for college and the workforce (CCSS). These individuals see the significance of technology being an integral piece worth educating our students about. The standards have been adopted by over 45 states, including the District of Columbia and the US Virgin Islands. The integration of technology and media standards in these common core standards shows the significance this area has had and will continue to have on our society.

Technology is a world that our student are living with, and fostering that environment will help lead to a more interactive classroom.

Due to this technological revolution the 21st century learner is a quick thinker and expect quick responses, “the hypertext minds of 21st Century Learners crave interactivity, [they] are good at reading visual images, have strong visual-spatial skills, tend toward parallel processing and inductive discovery, look for fast response times which leads to short attention spans” (Holzen et al., 2006, p. 2). Interactivity in the classroom helps promote a more active learning environment and “the presence of interactivity in the classroom is reported to yield benefits in relation to the promotion of more active learning environments, the building of learning communities, the provision of greater feedback for lecturers, and contributes towards students motivation” (Markett et al., 2006, p. 281). This type of interactivity in the classroom can be obtained through the implementation of different technological tools that are beneficial for the classroom. Since this new interest in implementing more technological tools in the classroom, standards have been put in place to help carry this learning opportunity into the classroom.

Reasoning for the implementation of standards, regarding technology into the Common Core Standards is stated as:

New technologies have broadened and expanded the role that speaking and listening play in acquiring and sharing knowledge and have tightened their link to other forms of communication. The Internet has accelerated the speed at which connections between speaking, listening, reading, and writing can be made, requiring that students be ready to use these modalities nearly simultaneously. Technology itself is changing quickly, creating a new urgency for students to be adaptable in response to change. (CCR p. 48)

With such a difference in the way our students are thinking and expected to be thinking, this idea of technologies in the classroom inexorably affects the education field. Instead of having emphasis placed on the amount of information memorized and absorbing, emphasis must be

placed on the importance of making connections, thinking through issues and solving problems; molding critical thinkers to ensure they will be successful through college and in their career.

Students who are said to be college and career ready in reading, writing, speaking, listening, and language will need to be able to use technology and digital media both strategically and capably. For example: “Students [need to be able to] employ technology thoughtfully to enhance their reading, writing, speaking, listening, and language use” (CCS p. 7). To assist the quick and fast paced mind of our students, there is technology we can utilize that could help in reaching these learners to ensure college and career readiness.

Cell phones are popular devices that could be used to reach diverse learners. The rising popularity of Short-Message-Service (SMS) or text messaging is defined as “the act of typing and sending a brief, electronic message (less than 160 characters) via a wireless network to another person so that they can view the short message on any number of mobile or handheld devices” (Ruby & Ruby, 2011, p. 298). SMS is one of the most popular communication tools, with “2.4 billion users worldwide. Around 90% of teens exchange SMS with their peers, with an average character length of 71 characters (Tomita, 2009, pg. 186). This popular form of communication is used daily by Americans of all ages, but predominantly used by ‘digital natives,’ a group who are deeply involved in the American school system – its students, who are apart of the ‘net generation.’ Marc Prensky coined the term digital native in his work “Digital Natives, Digital Immigrants”, published in 2001. These “digital natives” are born during or after the general introduction of digital technology, and with these individuals interacting and growing with digital technology at such an early age, hold a greater understanding of its concepts. ‘Net generation’, a term coined by Diane Oblinger refers to individuals who were born in or after 1982 who have never known a world without computer technology.

Using SMS, as a form of communication requires a different set of skills, the literacy skills these students are using by texting include both reading and writing. Something more here needs to be explored. Exploration of techniques on how to use tools students can participate frequently with such as texting can have a significant impact on the engagement in the classroom. Activities such as text messaging can be utilized for input while simultaneously allowing students to communicate with the class, in a new and exciting way. “Teachers can capitalize on teens affinity for mobile phones to use them in the classroom to support content creation, student-centered learning and collaboration, as well as authentic learning and the differentiation of instruction” (Orthober & Thomas, 2011, p. 56).

This technological revolution is not just for the enhancement of everyday life, but in the education field as well. The article “Teaching the 21st Century Learner” (2006) speaks to the idea of the relationship change student’s have with learning and retaining information in comparison to those who went to school 10-20 years ago. It further explains, “those born after 1982—have a different relationship with information and learning than do previous generations, as a result of their access to the internet and computer-enable technologies” (Holzen et al., p. 1). Challenges that arise are problems such as trying to create or find ways to implement SMS technologies in the classroom, productively and creatively to appeal to the technological and social changes of today.

Dissenting opinions discuss challenges that say the integration of technology of schools requires money, time and support for training and providing access. Fortunately, Markett et al. (2006) challenge such an issue by stating, “within an education setting, using mobile phones as an interactive tool requires minimal technical and financial support: the majority of students possess the needed hardware and software and communication occurs via existing mobile

networks, which are maintained independently by mobile service providers” (p. 282). Meaning, there is no technology training necessary and the cell phone should not be an intimidating device to use.

Dissenting views also have valid concerns of whether or not SMS or text messaging is harmful to a student’s grammatical development, since those messages are, “compact, and often times riddled with acronyms or purposely incorrect spelling designed for speed-of input” (McConatha and Praul, 2007, p. 4). However, such an assumption is countered with an explanation of a classroom that used mobile devices and came together to share content and messages (McConatha and Praul, 2007, p. 4). Educators have to understand that these are teaching opportunities to assist our students if such a grammatical mistakes do arise, “literacy is not limited to only typographic literacies, but includes digital literacies as well. Both require different skills, each specific to its intended audience” (Tomita, 2009, p. 190).

Other opponents views state that, “this type of communication is destroying the way our kids, read, think, and write” (Tomita, 2009, p. 188). Critics also say that SMS tools do not require critical thinking skills or analysis and that this activity is destroying the idea of the written word. In contrast to these claims, “researchers have indicated that SMS is an area for further exploration in education, suggesting possible areas of investigation such as: in class discussions, two-way service interactions, creative ‘free spaces’ for text-based play, language learning vocabulary and study support, and learning support (Markett et al., 2006, p. 282).

Tomita (2009) shows more through research done by Dr. Beverly Plester, a research psychologist and professor at Coventry University, that states, “new research shows a stronger causal relationship between text abbreviations and literacy skills”(p. 188). This idea shows the skills these students possess with English are greater or better than assumed. Students are writing

frequently everyday through texting and it gives exposure to written word. “Plester argued that text messaging (SMS) provides more exposure to written word, which positively relates to greater literacy attainment” (Tomita, 2009, p. 188). Teachers just need to be willing to tap into this knowledge they possess and use it to have more in-depth conversations about creating and sharing writing. However, more research needs to be conducted to speak about the effects text-messaging tools have on literacy skills to make definite claims either way.

In Tomita’s article “Text Messaging and Implications for its use in Education”, he shows his readers that text messaging is encouraging and has students writing more now, than any other generation in the past. He explains how this allows educators to communicate and facilitate unusual but useful discussions about topics such as writing to and for an audience or community. It also helps promote discussion about writing for a purpose and in a specific genre. This new outlet simply puts a creative yet productive twist to the typical English classroom discussion (Tomita, 2009, p. 184). With this creative tool, there are varieties of ways that SMS technologies can be implemented and used in the secondary English classroom. If implemented successfully ways these techniques can encourage students to increase interactivity in a new and interesting way within the class.

Implementation of SMS technologies has occurred frequently at the college level in a variety of courses. Due to the enormous sizes of lectures, professors in the UK decided to implement the usage of cohort texting during the class period, to integrate a different type of communal and interactive experience among students. For some classes at the college level, it is common to have an amount of students exceeding 100 in one lecture. This can be both intimidating and frustrating for some students (Bradley et al., 2010, p. 2), and consequently does not meet the student’s needs. This large style of lecture is not very appealing to every learning

style and professors in the UK have created an alternative to make the classroom more interactive with the use of 21st century technologies such as SMS.

SMS technologies as a method of interactivity increase engagement and excitement within the lecture for the material presented to the class. "The project team involved with this experiment aimed to use TxtTools to support the staff in their efforts to engage students and energize the lecture" (Bradley et al., 2010, p. 2). The goal of this would be to enable all of the students to actively engage in classroom discussion by asking questions, which would come in anonymously creating an unthreatening and unintimidating environment. Each student would be able to ask questions throughout the lecture as they arise. The student's questions would automatically scroll up on a list on the computer screen for real time analysis and response, the teacher would then choose to either discuss those questions during the lecture it was asked in or save them to address them for next class, via email, or any other outlet that is seen fit. This project would appeal to different learners and offer students a new learning encounter that would create a well-rounded class experience for all those involved.

After this study was completed, the conductors of this study found that eighty-six percent of the students said that they liked using TxtTools, "students appreciated the fact that they could ask a questions without disrupting the lecture [anonymously]" (Bradley et al., 2010, p. 9). The use of text messaging in class saved time for both the students and the lecturer. Sixty-four percent of the students thought that text messaging helped them to actively interact with the learning material, allowing the students to ask immediate questions and state concerns as they arose without disrupting the lecture and the flow of the class. This shows how beneficial the implementation of SMS technologies such as TxtTools can be if implemented in the classroom.

Students from this study also felt that when the professor displayed the anonymous questions that were sent in by the students during class, it encouraged more students to actively engage in the lecture. It also offered a variety of perspectives that were not always available. This activity quickly showed how, and what everyone else processed and understood in the lecture. If there were major misunderstandings, the professor would observe them and address the questions that showed obvious confusion of a topic, which the students really appreciated.

Seventy-nine percent of the students and the lecturer in this case study felt that the usage of TxtTools helped students comprehend the material better, being that the SMS aspect of the class added a different dynamic to the class environment. It increased interaction with the material rather than just listening and absorbing, making it more exciting and relatable so students remembered and comprehended more. TxtTools also helped enhance the students learning experience. For students who are scared to ask questions it gave them an outlet to do so anonymously and helped create a more comfortable, easy flowing and less chaotic learning environment. The only place of concern fell within thirty seven percent of the class. This thirty-seven percent were worried about the cost sending and receiving text messages would have on them financially; that is if the student did not have an unlimited text-messaging plan through their service provider. Overall the implementation of this program was a success and showed many positive aspects of how it could create an inclusive and interactive learning experience. If this type of technology can work at the college level, further investigation of the success of using SMS technologies in the high school English classroom should be the next venture of exploration.

Integration at the secondary level can happen in a number of different ways inside the English classroom. Educators can also encourage the students to use this form of shorthand while

journaling, taking notes, writing informal emails, or on other micro blogging sites such as Twitter. Teachers can also allow students to write first drafts and brainstorming using their phone to text into a note section or any type of note taking application on their cellular device. This encourages students to get their ideas out in a method that is familiar to them. As long as the expectations of the final draft papers and other assignments are clear, allow them to create however they find it helpful to them. These students have a different relationship with learning and information, so they should not be restricted to one way of producing and/or creating information required for class. Restrictions can stifle creativity, since it leaves less room for exploration for students.

There are both learning and teaching opportunities arising with the popularity of text messaging. As an educator of the 21st century student, I have to grab onto those opportunities and use them to help students and teach them about the concepts they are already unconsciously using. All of these practices can help motivate students to do more in the classroom, because it becomes related to something they already can utilize.

After seeing studies where the implementation of texting and materials such as TxtTools in the college level classroom, I began to ask questions about implementing this type of program at the secondary level, specifically in high school. Would the implementation of SMS technology have the same impact on the secondary education level of student? Could using SMS technologies hinder or help the interactivity of the high school classroom? How could we implement this program without harm to the overall communal experience of high school? There are many ways we can implement and make use of the technologies our students are consumed. Educators just have to find a way that this technology can be organized around student learning.

Peter Mellow (2005) in his article “The media generation: Maximise learning by getting mobile”, discusses three models for SMS mobile phone use with mLearning that are described below:

- i. A ‘Push’ system, where the institution pushes out messages to all students in a course. Cost is to the institution and using an example of a paper with 200 students receiving four text messages a week, the cost would be \$1,000 a semester. This may be used for course announcements (e.g., exam room change, tutorial cancellation). However, with study notes, not all students would want to use the information contained in that message and it could be perceived as ‘mobile phone Spam’. The question also arises; do we require informed consent to deliver these messages to students?
- ii. A ‘Pull’ system where students order specific information based on a menu of all listed content on a webpage or a paper handout. Cost is per message to the student. This is similar to ordering a ringtone or a screen tattoo for their phone.
- iii. An interactive model where questions are either sent out or order, then answered, and replied to by the student to check the answers and receive feedback. This is the most expensive model as it may require many messages back and forth, leading costs to rise. (p. 471)

Each of these models is a suggestive way to incorporate SMS technologies in the classroom and can be used as a base model for an educator to begin working with such technology.

Collaboration with your students can be useful in deciding which method they would prefer to ensure the technology is used effectively and purposefully. MLearning can be a powerful method in engaging students in the classroom. Now this is not saying that this method is the main and

only one to use in the classroom. MLearning methodology should be employed as a secondary or assistive tool to utilize and incorporate into lessons and classroom culture. It can be used to enhance and broaden the learning experience for the student so the information is relatable and meaningful to them as well.

Using these tools can create a positive learning community. Peter Mellow (2005) states that, "phones are no longer toys; they are powerful communication tools, if we choose to use them" (pg. 470). This type of technology offers so much more to our students than just a device they talk to friends or family members on. This is a device that can change the structure of the classroom, appealing to the digital native and their urgency for immediate feedback. These cellular devices give teachers another way to creatively engage and communicate with their students. These tools also generate an opportunity to enhance teaching and learning in a way that will build an amazing collaborative experience for teachers. This experience will be alongside of their students, as teachers continue to explore and navigate their way through using such devices in their classrooms.

Learning should be circular instead of a direct line of teacher pushing knowledge to student. Students have so much knowledge and understanding of these tools. This would be an optimal time to gauge a student's critical thinking skills. Allowing our students to have a significant hand in their learning will assist in creating something that is both relatable and engaging, creating a chance for interaction in multiple forms. "When one considers constructivist learning theory's emphasis on communication and technology's ability to promote student to student, student to content and student to teacher interaction text messaging has great instructional potential" (Thomas and Orthober, 2011, p. 55). Most learning pedagogies from constructive learning theories can be adapted for a mobile learning environment.

One characteristic of being an effective teacher means the teacher has an open mind and is an advocate of life-long learning. This integration of technology into the classroom gives educators the opportunity to combine pedagogies creating one that involves ones they are comfortable with paired with mLearning methodology (one that you may not be as familiar with). Teachers have to be adaptable and be willing to adjust materials and methods they have used for teaching to best fit a particular group of students, which is something most teacher do on a class to class, semester to semester and so on basis. Specifically, Peter Mellow (2005) discusses the idea of chunking, a method teachers use on a day-to-day basis. Cellular devices “are suited for ‘chunking’ due to their smaller screen size and storage capacity. The distillation of material in ‘knowledgeable bytes’ to be consumed by the learner, offer true flexibility of ‘time, place and pace’. The diversity of media that can now be delivered by these devices adds more depth to their application” (pg. 470).

Educators have to make the information that is taught relatable and creative so students truly remember and learn, not just memorize, regurgitate, and repeat what is forcefully put into their minds. In Mark Windschitl’s (2002) article, “Framing Constructivism in Practice as the Negotiation of Dilemmas”, he gives examples of what education reformers who were advocates of progressive schooling have done in attempts to create the best learning experience for students. Windschitl (2002) states that John Dewey, an American philosopher, psychologist, and educational reformer, “intended that educative experiences be social, connected to previous experiences, embedded in meaningful contexts, and related to students’ developing understanding of content” (p. 134), demonstrating that even 50-60 years ago educators were working towards creating pedagogies that consisted of student based interest learning. SMS is a form communication related to reading and writing, and as educators, it is their job to teach

students to be able to distinguish between the texting community and the formal community, not threaten students with poor grades to fix something teachers are not truly teaching them how to fix or differentiate.

It is essential for educators to seriously consider this new age, as it is already demanding a major reconstruction of the traditional classroom and popular pedagogies of teaching. A reformation of teaching pedagogies is in no means an easy task for any educator but the key to doing so is to understand the strengths and the weaknesses of the technology used. With knowledge of those strengths and weaknesses, decisions on how to combine other pedagogical practices that can fill in the gaps to achieve specific and learning goals can be made.

Suggestions to better implement such programs at the high school level would be to use them at the beginning or at the end of the class period. Since programs such as TxtTools can always be accessed, students could even send questions they have throughout the day and night about homework, essays or projects. There would need to be some type of response etiquette set up at the discretion of the teacher and the students, a community that is created, understood, and respected amongst those within. Every individual is different so if the classroom can come to an agreement about appropriate times to ask and give appropriate times for response, making the interactive approach better for those involved. Guidelines and restrictions would need to be put in place as well; also at the discretion of the teacher.

Creating a community in the classroom where students and teachers can frequently communicate is a positive thing. If offered as an option to students despite the separation by 3:00 PM, it has the potential to, depending on the implementation to enhance the overall learning experience of the students as well as the classroom. Using this type of technology in the

classroom as a resource will also get students excited about learning because they are given things to do that appeal to them, using materials and tools that are relatable and personal to them.

According to the article "Using short message service to encourage interactivity in the classroom", "interactivity in the classroom can promote an active learning environment, facilitate the building of a learning community, provide feedback and increase student motivation" (2006, p. 57). Activities that can exhibit this type of interactivity include, but are not limited to reflection and discussion as well as assessment. Software and programs that allow students to respond to a question for class discussion and respond to each other as they continually brainstorm and think is supported by the simple nature of texting. It gives students time to process their thoughts, practice analysis, and respond in an immediate fashion in multiples. That way, classrooms are not only hearing the student who always raises his or her hand but also receiving feedback from multiple people in the classroom simultaneously. With this ideal, conversation can develop and flow without any awkward pauses or extra prompting, "it encourages shy, non-participatory or self-conscious students, increases learner-content interaction, promotes classroom accountability, and encourages student interaction" (Markett et al., 2006, p. 282). "Some students may not feel comfortable making comments in the classroom, either because a student is shy, or because of students who dominate classroom discussion" (Thomas & Orthober, 2011, p. 57). Texting can help motivate students engage more in the classroom, giving them a space for all students to participate in classroom discussion in multiple shapes and forms.

In more detail, another facet worth exploring with use of cellular devices is assessment. "Mobile phones can be an effective means of testing student performance; students who took tests by mobile phone performed comparably with students who did so by conventional methods

(Thomas & Orthober, 2011, p. 57). Services such as Class Pager will allow you to send group text messages to your students and students respond back without either party seeing each other's real cell phone number. Services such as Socrative or Flubaroo allow you to give multiple choice, short answer quizzes, ask for reflective short answer responses, and exit tickets.

Subscribers of Poll Everywhere can poll student's responses to questions, which can also be used to create quizzes. Using programs such as these are designed so well that they provide adequate data representation, whether it is through a graph or excel document that you can analyze and keep forever in a paper or paperless formats. You can use such data to display growth to colleagues, parents, administration, and most certainly your students so they can see where they started and how far they have come. If anonymity is a concern, students have the opportunity to include their name or not as they submit answers, in some cases a name to a response would be necessary but this too is something left to the discretion of the teacher and his or her classroom to decide.

These are the tools that will help to transform the ways teachers teach having a positive impact on the ways their students learn, transforming the entire student-teacher learning community in the classroom. "Rather than attempting to stop students from using the technology, can instructors co-opt their current usage pattern into a more positive, curriculum oriented approach?" (McDonald, 2010, p. 45). Consideration and exploration of other programs and how they specifically impact the classroom learning community is significant to understand what purpose each program can serve in a classroom and/or school.

Rationale

After realizing the ubiquitous use of cell phones and how that has had an impact on both our society in a cultural/social context but on education in a school environment. Whether we choose to accept or deny the use of cell phones with our students today has no impact on how this type of technology has affected our learners. As educators, we can choose to focus on the negative or take the “problem” and use such an elaborate tool such as a cell phone and use to help our students in a productive and meaningful way. As an educator, it is important for me to research all the possible techniques to reach my students to ensure they are successful in the learning environment I create for them.

Using cell phones in the classroom is something I personally took a fond interest in because I see the potential such a tool can have in the classroom if integrated appropriately. Not having a classroom of my own caused great difficulty in hopes of trying out such a tool, but fortunately my student teaching cooperating teacher I worked with gave me the support and students I needed to test out how the cell phone could be useful in the classroom. In hopes of using, a program that would allow me to successfully integrate cell phones in a productive, useful, and meaningful way so that it would not hinder or puncture the students learning in any form.

Permission to work with two Advanced Placement Literature classes for the study shaped my ideas of how and what I would do for integrating the cell phone in the classroom. At the end of the school year, each Advanced Placement student is required to take the AP exam in that subject matter which would potentially allow students to gain college credits that would transfer into the University they choose to attend after high school graduation. The goal was to create something that would help the AP students but also help guide me in finding a way to use cell

phones in the classroom successfully. In January, students took an initial survey that allowed me to see which students would have access to the program I would use for this project. After my own personal trial and errors with researching programs that were free and would allow 40+ more students to participate in the program that was best fitting for these purposes is a program referred to as Socrative.

Description of Socrative

Socrative's mission is that, "we are a team of educators, entrepreneurs, and engineers passionate about improving education. We believe in super simple tech tools to enhance classroom engagement, assessment and personalization" (socrative.com). Socrative is a student response system that allows teachers to engage their classrooms through a series of educational exercises and games via Smartphone, laptops, computers, and tablets. It is a very simple and easy program to use and understand. It only takes teachers about three minutes to sign up and less than 30 seconds for classes to load and begin the work. The website is simply socrative.com, or you can download the app for your Smartphone through your applications store. The site has systematic video demonstrations as well as written directions to get you started as the teacher. After creating an account you are given a six-digit classroom number that your students will use to login when they access the Socrative student option. Below (Figure 1), you will see the main screen options for the teacher and the main screen for the student to join the room with the six-digit number you were given during the teacher registration.

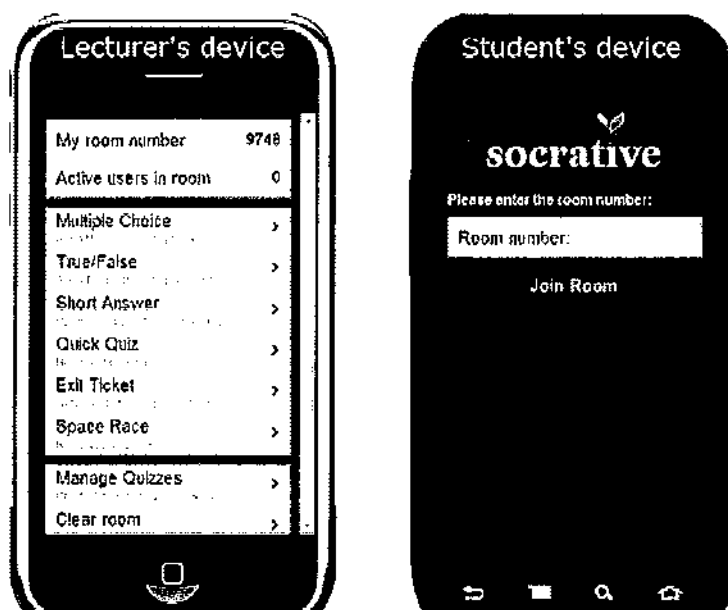


Figure 1. Home screens for teacher and student (myfolio.kent.ac.uk)

Socrative is a simple and smart application program that is accessible to any student who has access to a web enable device (i.e., tablets, Smart phones, and computers). Activities can be completed collaboratively or individually and when beginning an activity the teacher has the option to inform students to type their name in or not. The program does not register phone numbers, so that exchange is never an issue. If there are students who do not have access to a compatible web enabled device, this is not a huge concern because students can share devices (just type in a new name or indicator of new student) if a Smartphone, tablet, or computer is not accessible. Not only is Socrative compatible with multiple devices but also it is compatible with multiple browsers (internet explorer, firefox, safari etc.) and can be downloaded as an app in the application store of Smart phones and tablets. Although Socrative is limited to 50 users per activity, this should not be an issue at the secondary level, or even in smaller college classrooms. At the end of each activity, the teacher can clear the room and start a new activity with new participants if you have multiple classes during the day.

With Socrative, the teacher has three options to create activities. There are single question activities that allow multiple choice (Figure 3), true/false, and short answer (Figure 2) responses. With the single question activities, a question can be asked in any of these formats for a quick response with displayable results as they come in. The second options are quiz-based activities. This is where a teacher can choose to start a pre-made or shared quiz, get an end-of-class comprehension check with an exit ticket (Figure 5), or lastly use Space Race (Figure 4). Space Race, adds a fun and competitive twist because it is a game option that allows teams of students to answer questions in a fast paced manner. The last option is the library of where the teacher creates, edits, and import quizzes that can be shared with other teachers. In this last option, teachers can create, delete, or edit their customized quizzes and space race games.



Figure 2. Short answer question and response (transparentcurriculum.wordpress.com)

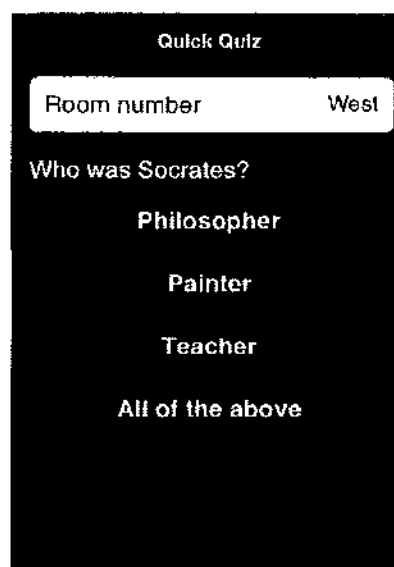


Figure 3. Multiple-choice question (redpencoffee.blogspot.com)

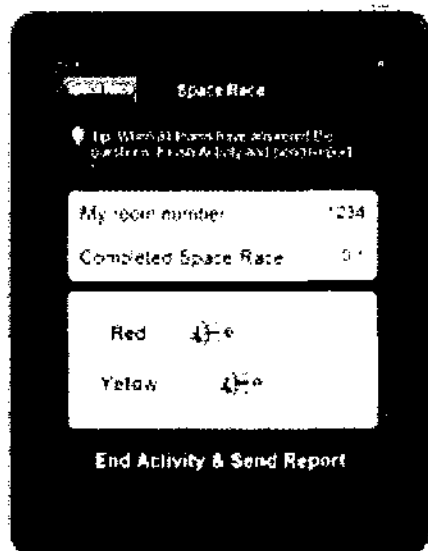


Figure 4. Space Race (Socrative.com)

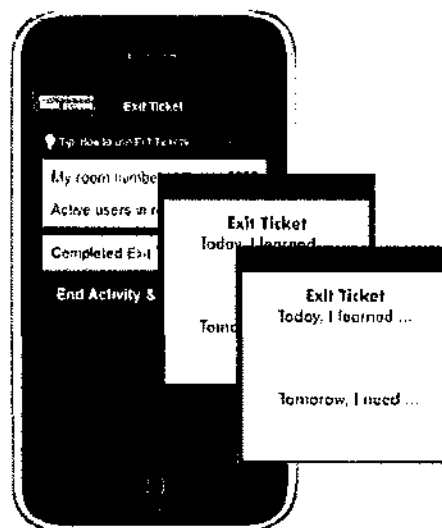


Figure 5. Space Race (socrative.com)

With this program, teachers are allowed to “design [their] own evaluation exercises in minutes by importing questions or inputting them on the website” (socrative.com). The quizzes are saved to your teacher account and can be accessed at anytime, anywhere. A teacher can potentially start an activity no matter where they are, even in the case of an absence. Quizzes can be made in a multiple choice and/or short answer format. Quizzes can be shared with a code that is given for each quiz so you have the option of sharing quizzes with other teachers and vice versa.

The quiz option has multiple benefits for teachers. “Socrative,” quotes Kristina Buenafe, a math teacher at Boston Public High School, “saves me 80 minutes per week in grading time” (socrative.com). The quiz option offered by Socrative saves a teacher grading time because after the activity is completed, the multiple choice questions are automatically graded and an aggregated report can be downloaded and saved. The aggregated report allows the teacher to see each of the questions and answers each student chose. The report also give a percentage score and a total number correct, which is all in an excel file or Google spreadsheet that can be saved to your computer for future reference shown in Figures 6 and 7.

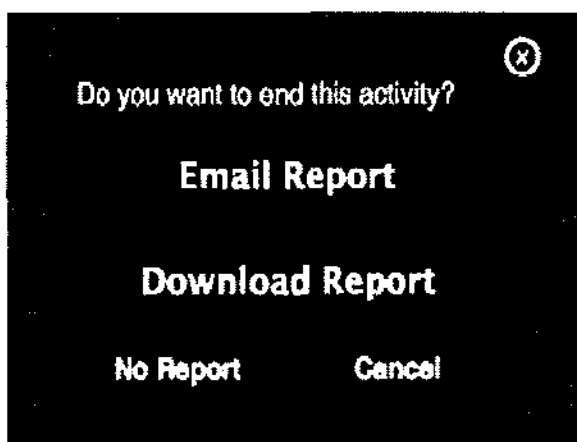


Figure 6 Report option at the end of a quiz (socrative.com)

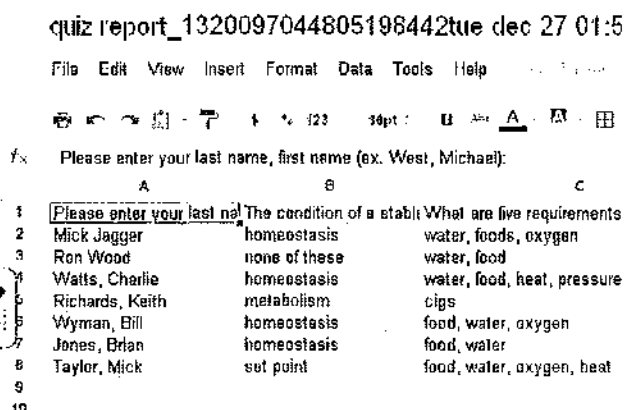


Figure 6 Sample excel report (Source: pdsblogs.org/)

When creating quizzes there is a choice to enable four options before starting the quiz. The first option is the pacing/timing of the quiz, it can be student paced so students can answer questions freely at their leisure, progressing forward at their own pace, or you can do a teacher paced quiz shown below in Figure 8. The teacher paced quiz allows for the teacher to be in control of how long each student spends on each question because it gives you the authority to skip to the next question. The second option is to enable feedback immediately, which lets the students know if they got each question right or wrong before going to the next question. The third option allows the teacher to enable an explanation, so if a student clicks the wrong answer they will get a reason why that answer is incorrect shown below in figure 9. The fourth and final option is for you to randomize answer choices, so no quiz is the same.

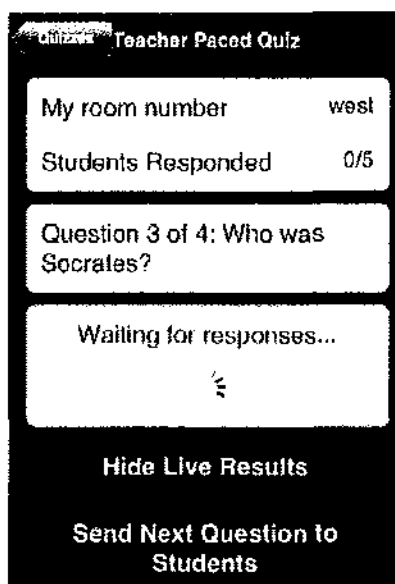


Figure 8. Teacher screen
(Source: itunes.apple.com)

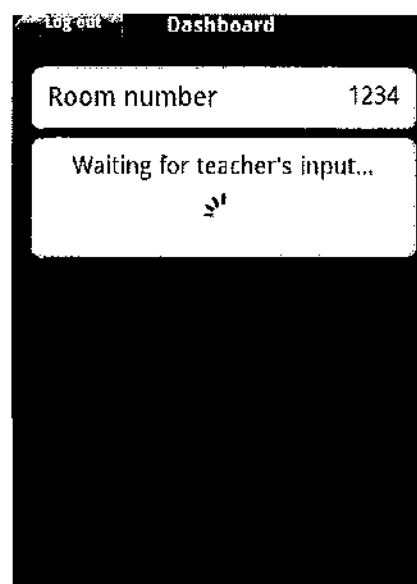


Figure 9. Student screen
(Source: www.androidpit.com/)

Overview of the Study

At the beginning of the second semester at a southeast Michigan High School, students in two, Advanced Placement (AP) Literature classes. Forty-four students agreed to participate in this study with parent permission/signature on a letter sent home that was approved by the school district.

The Advanced Placement Literature exam is a test that happens at the beginning of May. The test has two sections: the first, is a 60 minute portion that consists 55 multiple choice questions that are divided among four readings and the second section is a 120 minute free-response section where students write three essays (collegeboard.com). This information for the AP Literature exam would be the basis of where the activities in the study came from.

After research and deliberation, Socrative was chosen to be the best-fit program to use for this study. Due to the location of the classroom being on the bottom floor of the school, typical service from cell phone carriers was non-existent. Therefore, a program that allowed us to strictly text was out of the question. Students did have access to the wireless Internet password so those with appropriate devices were able to log on to the student section of website or download the app and still participate. For those student who had absolutely no access to a Smartphone, tablet, cell phone with Internet, or iPod touch had the choice to share with a classmate or utilize extra devices the teacher or I had that would allow that student to participate.

The quizzes and quick exercises option is the format used with the AP Literature classes. After figuring out how students would participate with their devices, the implementation of the program was quite simple. A past version of an AP Literature multiple-choice exam from collegeboard.com was taken chunked into smaller parts by the types of reading students would encounter and have to analytically read. The questions were geared towards the content, style, and form of each passage. The passages and questions were taken directly from an 84 page AP

Literature and Composition and AP Language and Composition course description document that contained a practice exam from College Board's website. During the first 12 minutes of class after attendance was taken, students would stay in their seats and receive a reading, via email from a past AP English exam. There would be a total of 12-chunked quizzes given, divided into two quizzes a week, for a total of 6 weeks.

The students would have 12 minutes to both read the passage and answer the 10-12 questions about said passage that followed. The teacher would time the students and if they were not finished, they were still allowed to complete the quiz but they had to keep personal track of what question they were on when the time allotted was up to track their own progress. The purpose of this format helps the AP students train for the strenuous time restraints there are while taking the AP Literature exam. The total time given for this portion of the test is 60 minutes. With four passages in this section that allows for about 14 minutes per passage, so to train students for a shorter goal to complete a passage is a great way to practice.

Socrative's quiz option was used as a training device to help students read and answer questions. The student would have immediate feedback for their answer choice. At the end of the 12 minutes the class would have a 5-6 minute discussion about the scores students had received. This is the time when questions that multiple students got wrong were discussed. Due to the immediate feedback technology, Socrative has, the teacher is allowed to follow along each student's progress, observing how many he or she have gotten correct or incorrect. At the end of quiz the teacher could download the results in an excel chart or Google spreadsheet and display to the class.

For the quick exercises, students had the opportunity to respond in a short answer format, asking questions or stating concerns as we began to train them to test for the AP exam in May.

We would then look at the results from those responses as a class and discuss accordingly. We would discuss the best testing techniques for the AP exam. Reading strategies and multiple choice question strategies were discussed to help students improve their time and ability to confidently answer each question in the time allotted for the exam. The majority of the discussion focused on strategies students could try out the next class period, in hopes to find the strategy or strategies that would work best for them come May for the AP exam.

Participants and Setting

The ages of the forty-four students in the two classes ranged from 16-18 years old. There were 16 males and 28 females. Participation was voluntary, and all of the students (along with their parent's permission) agreed to participate (note: Human Subjects approval was secured, see Appendix C). Those students who consented to participate and received parent/guardian permission to do so were given the classroom code number and given the website URL before when the activities began. The setting for the study was a medium sized urban high school with a little less than 850 students in the Midwest of the United States. The school year consisted of two semesters (four total marking periods). This specific high school was on block scheduling where most classes met every other day for about 98 minutes, unless you were in an advanced placement class, which met everyday of the week.

This specific class was chosen because it was one with upperclassmen, and the likelihood of them having the necessary devices was higher versus my sophomores. At this particular school, due to a paper shortage it was common to see students using their cellular phones in class, in the hallways, or at lunch. Students would utilize their phones to do things such as check emails to receive assignments, worksheets, or guided questions in efforts for paper conservation.

Data

Data was collected from four sources: (a) the initial survey (Appendix A) that was given prior to the activity beginning to gain knowledge about the classroom demographics and access to the tools necessary to complete the study; (b) the post survey (Appendix B) completed after the study concluded for the needs of this paper; (c) an open class discussion each class had about the study, (d) and finally a follow up after school session. Six students (two from one class and four from the other) signed up to voluntarily come and discuss more in detail about specific information or concerns that came up from the larger class discussions. For the large and small group discussion patterns, main ideas, and trends from the conversations were kept track of in a journal format.

Data Analysis

The data that was collected was analyzed using a qualitative research approach. Analysis consisted of organizing the data from the surveys and discussions into manageable pieces and searching for themes to emerge between them. The analysis revealed interesting results, especially in regards to the correlation between the amount of students who both enjoyed and found the Socratic activity to be useful and the amount of students who would like such activities to be incorporated in other classrooms of different subject matters. The findings also revealed an interesting result among the importance of anonymity for using such tools in the classroom. Each of these findings will be discussed in the finding sections.

Findings

At the conclusion of the study, all forty-four students in the two classes completed both surveys. Results of the questions from the survey before the study are in Table 1. The student’s responses described demographic information as well as how much texting and/or cell phone usage is a part of the student’s lives. After the first survey (Table 1) was completed, it was concluded that 98% of the students used text messaging. It was also found that 68% of the students used text messaging hourly and 23% used text-messaging daily. The majority of the class—95% had a cell phone, and 78% of these students received 20 or more text messages a day and 68% sent 20 or more text messages a day. This speaks to the significant and importance cell phones and text messaging holds to these students.

Table 1: Survey for demographics given before study

Question/Statement	Number of students	Percentage of students (44 total)
My age is:		
16	2	5%
17	32	72%
18	10	23%
My gender is:		
MALE	16	36%
FEMALE	28	64%
Do you have a cellular device (i.e. mobile phone)?		
YES	42	95%
NO	2	5%
Do you use text messaging?		
YES	43	98%
NO	1	2%
Do you have an unlimited text message plan?		
YES	40	91%
NO	4	9%
Do you have a smart phone (i.e. Android or iPhone)?		
YES	33	75%
NO	11	25%
Do you think using your phone in class can be		

useful?		
YES	41	93%
NO	3	7%
How often do you send text messages?		
HOURLY	30	68%
DAILY	10	23%
WEEKLY	2	5%
I DON'T TEXT	2	5%
How many text messages do you receive daily?		
5 OR LESS	4	9%
10 OR LESS	3	7%
20 OR LESS	3	7%
20 OR MORE	34	77%
How many text messages do you send daily?		
5 OR LESS	4	9%
10 OR LESS	1	2%
20 OR LESS	5	11%
20 OR MORE	30	68%
If you answered no to "Do you have an unlimited text message plan?"		
Question/Statement	Number of Students	Percentage of students (4 total)
Do you have access to an iPad?		
YES	0	0%
NO	4	100%
Do you have access to an iPod touch?		
YES	1	25%
NO	3	75%
Do you have applications that allow you to text off either of the above devices?		
YES	1	25%
NO	3	75%
If you answered no to "Do you have a Smartphone (i.e., Android or iPhone)?"		
Question/Statement	Number of Students	Percentage of students (11 total)
Do you have access to an iPad?		
YES	2	18%
NO	9	82%
Do you have access to an iPod touch?		
YES	5	45%
NO	6	55%
Do you have applications that allow you to text off either of the above devices?		
YES	4	36%
NO	7	64%

Access was of small concern with two out of the forty-four students (5%) who did not have a cellular device. Of those students who did have cellular devices four of the forty-four students (9%) did not have unlimited text messaging through their wireless carrier. With the issue of students not having unlimited text messaging and the complication of having service due to the location of the classroom another mode of using the cell phone in class was important to the success of this integration. This issue is one of the significant reasons why Socrative was chosen as the appropriate program to use for this study, so that complications with service plans was not an issue, due to the fact that this program simply requires internet access or an app download. Gaining access to the Internet would be a simple task to complete because of the students' ability to log onto the school's wireless Internet source. This would be an unproblematic task for the 75% of students who had Smart phones, those who did not have Smart phones, an iPod/iPad/tablet were given such a device by the teacher that she and I had so students could complete the study, which was approximately four students. If a student were absent, he or she would have the opportunity to participate by taking the quiz later.

At the conclusion of the study, a second survey (Table 2) was given. Students were asked to read a list of statements and rank their experience on a scale from one to five. The rankings were as followed: (1) strongly agree, (2) agree, (3) neutral; meaning students neither agreed nor disagreed, (4) disagree, and (5) strongly disagree.

The results show that all of the students (44 of 44) found the activities integrated via Socrative to be useful, and 28 out of the 44 students enjoyed participating in the activities. The results also show that 38 out of 44 or 86% of the students agreed or strongly agreed and that taking quizzes in this format was more efficient and convenient. Overall, students did not feel that they participated more in discussion but also did not feel that participated any less either.

One hundred percent of the students valued the immediate feedback the program provided for them and while it did not affect how much or how little they participated, it did enhance discussions in the classroom. All of the students wanted to continue participating in the Socratic activities in English class, but inconsistencies arose when students were asked about integration in other classes across different subject matters, where 22 felt neutral, 14 disagreed, and only 7 agreed with cross subject integration. Other discrepancies or inconsistencies fell in the statement about anonymity, contrary to popular opinion, the students did not value the anonymity the program could provide.

TABLE 2: Survey results after study was conducted

Statement	Strongly Agree (1)	Agree (2)	Neutral (3)	Disagree (4)	Strongly Disagree (5)
1. I enjoyed participating in the Socratic activities	21	17	6	0	0
2. I had a clear understanding of my expectations when using this tool in class with my phone or device	37	7	0	0	0
3. I found the Socratic cell phone activities to be useful	38	6	0	0	0
4. I would like other teachers to implement this type of technology in my other classes	1	7	22	14	0
5. I would like to continue using the Socratic cell phone activities in the class	36	8	0	0	0
6. I participated more in discussion	0	10	11	20	3
7. I participated less in discussion	0	0	3	22	19
8. I prefer the anonymity in the program we used	0	0	0	29	15
9. I would use this technology different in the classroom	0	1	32	12	0
10. I would use this technology no different than how my	0	12	32	1	0

teacher did in the classroom					
11. Taking quizzes using this program was more efficient and convenient	3	35	5	2	0
12. I valued the immediate feedback from the program	15	29	0	0	0
13. This technology tool enhanced discussion in the classroom	9	22	13	0	0

From both the big and small group discussion data shows that the reason why students did not agree with integrating these activities in other classroom across subject matters was one that dealt with the understanding of *transfer* and how to do so. The majority of students' answers when asked for clarity about this discrepancy were as followed: "my teacher would never do that"; or, "I don't know how this could work with math"; or, "yeah right that teacher doesn't even let us use the computers in their class". All of such statements are evidence that the students do not necessarily feel like such activities could *not* be or should *not* be used in other classroom across subject matters; rather, the disagreement lays within the students understanding of the already set classroom culture, or the apparent inability to transfer how such activities could be used in different subject matters.

The other discrepancy that was discussed is the idea of anonymity. Students were not fond of information being anonymous displayed, they requested ownership and wanted their name to be next to their score. When discussion around this topic began, it was determined that when it was anonymous it takes the competition out of it. These students wanted to compete with each other for their own academically competitive needs. If their name was not displayed, they did not know whom they had to beat or whom they had already beaten with their scores.

Discussion

Most of what the students' surveys and group discussions revealed is supported by the research in integrating technology and mobile phones in the classroom. Tomita states that, "technology provides a vehicle to foster the development of communities, where learning is infused with social interactions among students with teachers, and with other who have traditionally been considered outside the traditional structure of the school" (2009, p. 189). Tomita's (2009) statement supports the positive impact this type of technology can have for students. The majority of the students who took part in this study possessed a mobile phone, found the activities to be useful, effective, engaging, and convenient. Students also valued the immediate feedback and felt that the activities helped to further and enhance classroom discussions on the related topics. This finding is supported by research that speaks to the 21st century learner's learning styles, "the hypertext minds of 21st Century Learners crave interactivity, [they] are good at reading visual images, have strong visual-spatial skills, tend toward parallel processing and inductive discovery, look for fast response times which leads to short attention spans" (Holzen et al., p. 2).

The classes used in this study were two upperclassmen courses with what is said to be the most academically astute students. Since it is an advanced placement class could have had a tremendous impact on some of the results for this study. Specifically, when it comes to the discrepancy about anonymity. These students were very competitive. They enjoyed challenging and competing with each other and prided their selves on their ability to beat out their classmates. Though it was a friendly competition, it was a constant competition nonetheless. This competitive nature is not as commonly outright and may have had a significant impact on their devalued sense of anonymity. This could hold especially true if compared to a general education

English Language Arts class or a lower level class, such as a freshman English course. This thought could hold true with the non-increase for participation for students in class after the use of Socrative. Students at this level are already expected and do fully participate in class discussion. Since the class is supposed to resemble a college level course, engagement is already quite significant as well as participation. Perhaps, if this study were done with a non-AP course group of students those numbers would change significantly.

This study was looking to gauge the amount of interest and engagement students would have in class with SMS technologies. However, other facets could have been explored to further the understanding of the academic impact it had on the students. This study combined the surveys from both AP Literature classes as one entire class. Something to further explore would have been to split the two classes and compare and contrast the differences between the two AP Literature courses. The study could have been broken down even further into separating female and male results within each class to do a comparative focused study on the academic differences between the two as well. However, this was not done for the fact that this study was done to understand interest and gauge engagement of how a program such as this could begin to be used in the classroom.

Other discrepancies dealt with the lack of access to the necessary devices and a strong wireless Internet signal. This played a significant part in finding a program that would suffice for this study and how the study would play out. One of the biggest concerns was that if the wireless Internet connection happened to be low that day at the school, it would affect the students' ability to progress through the quizzes. In addition, students' personal access to the tools needed for this study could potentially cause an issue if extra devices were unavailable. The tools needed to participate in some of these activities are quite expensive and students should not be expected

to have such items. But it is through programs like Socrative that allow students access through a number of different outlets so everyone can participate no matter what type of phone or smart device they possess.

For other programs, if these devices are required it places a limit on what can be done in the classroom for instructional purposes. If all students had complete access to a smart phone or similar device, perfect wireless Internet access the possibilities could be endless. There are always alternative routes to provide materials for students who do not have access to such devices. Lack of access will consistently be an issue, depended upon how each program will be integrated into the classroom.

Conclusion

Technology is a tool that can be used to add interactivity in the classroom to increase engagement of the 21st century learner or digital native. Technology creates an outlet for creative and customized instructional opportunities; its uniqueness provides a relatable aspect for students that can help increase productivity, motivation, and engagement in the classroom. Educators today must step outside of the traditional teaching pedagogies and take advantage of the world of opportunities that are linked to creativity technology can provide. In particular, the use of cell phones in the classroom can be a stepping-stone in integrating a relatable tool in the class for students. Orthober (2011) states that, “students are obviously motivated to use their mobile phones, and early research...indicates that students find their use for school work to be beneficial” (2011, p. 68). From the study conducted in this paper the use of cell phones in the classroom is a trend that has a positive outcome for classroom discussion and engagement.

Dissenting opinions, challenge the integration of tools such as cell phones in the classroom because it is assumed that text messaging inhibits the literacy, writing, and students’

grammatical understanding. Despite such opinions, there is not enough research to support such claims, and so more research must be conducted to make that assertion. Not only is there a lack of research to support these dissenting claims, but also there is research that provides positive feedback on the integration of using cell phones in the classroom, such as this study and many others. Ignoring the need for adapting to different learning styles is a disservice to the students. There is scientific research that supports the claims that these students learn differently not by choice, but because of a concept known as neuroplasticity.

The brain frequently changes throughout life due to the environment, experiences, behavior, and many other factors. The student of today is growing up in a world of ubiquitous technology, with a rapid-fire style of communicating and instantaneous access to a variety of information. These differences in our world undoubtedly have had an impact on the way the digital native learns and processes information. Educators have to bridge the gap between past and future so we can presently appeal to the student of today.

In regards to specifically using the cell phone in the classroom for educational purposes, there is research that supports the ability and potential it has to create an, engaging, and collaborative learning community. Although it is not research, there are also educational blogs created by teachers who share and give honest feedback on a variety of things they have done in their classes for example, www.scoop.int/educational-technology-for-teachers. This blog was curated by Donna Browne, who discusses technology that is new and helpful in the classroom. These teachers share and communicate the effectiveness using cell phones and/or text-messaging activities have had for their classes. Further research on the impact using cell phones in the classroom has on learning growth for a student should be done in effort to continually support the integration of technology in the classroom. There is research that discusses using technology,

specifically cell phones in the class as a student response system at the post-secondary level, which speaks to the potential cell phones have as an educational tool. Significantly, more qualitative and quantitative research at the high school and/or middle school level would be useful. Research at this level would be ideal to see how the cell phone as a classroom tool works at the secondary plane and how this technology affects that population of students.

Integrating and using technology in the classroom is challenge as we move forward in attempt to finds productive, meaningful way for integration. The first step to doing so is to explore the programs, such as Socrative and materials that are out there and see in what way they may fit with your students. The next step is to share that information with others. The cell phone is a mobile device that is important and a key tool to utilize in reaching our students. Mellow (2005) references Marc Prensky when he explains his thoughts on how it is our jobs as educators to adapt materials to our students and using the cell phone in class is no different than what we are already doing everyday.

And despite what some may consider cell phones limitations our students are already inventing ways to use their phones to learn what they want to know. If we educators are smart, we'll figure out how to deliver our product in a way that fits into our student's digital lives and their cell phones. And instead of wasting our energy fighting their preferred delivery system, we'll be working to ensure that our students extract maximum understanding and benefit from the vast amounts of cell phone-based learning they will all, no doubt, soon be receiving.

(Mellow 2005)

Creating a collaborative learning community with other educators and schools will help ease the challenge as we explore such technological reformation together.

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APPENDIX B PAGE 1

Survey Questions for whole class (After)

Directions: On a scale from 1-5 (1 being strongly agree and 5 being strongly disagree) please rate the following questions.

1. I enjoyed participating in the Socratic activities

1	2	3	4	5
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

2. I had a clear understanding of my expectations when using this tool in class with my phone or device

1	2	3	4	5
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

3. I found the Socratic cell phone activities to be useful

1	2	3	4	5
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

4. I would like other teachers to implement this type of technology in my other classes

1	2	3	4	5
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

5. I would like to continue using the Socratic cell phone activities in the class

1	2	3	4	5
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

6. I participated more in discussion

1	2	3	4	5
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

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7. I participated less in discussion

1	2	3	4	5
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

8. I prefer the anonymity in program we used

1	2	3	4	5
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

9. I would use this technology different in the classroom

1	2	3	4	5
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

10. I would use this technology no different than how my teacher did in the classroom

1	2	3	4	5
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

11. Taking quizzes using this program was more efficient and convenient

1	2	3	4	5
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

12. I valued the immediate feedback from the program

1	2	3	4	5
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

13. This technology tool enhanced discussion in the classroom

1	2	3	4	5
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

APPENDIX C

(All headers and names were removed to ensure the anonymity of all involved.)

Kimaya Hudgins
khudgin4@emich.edu

December 11, 2012

Hello Families,

My name is Kimaya S. Hudgins and I am a senior at Eastern Michigan University studying Special Education, Secondary Literature, Language and Writing, and Teaching English to Speakers of Other Languages. I am Ms. Apple's student teacher for her 10th grade classes. I have had the pleasure of sitting in on your child's AP English classroom and have had the opportunity to get to know many of the students in both classes. I have very much enjoyed my time at Michigan High School working with all of the students.

As an Honors student at Eastern Michigan University, we are required to complete a senior thesis to graduate with honors. This thesis should contribute to my work in my major and/or minor. I have decided to complete my thesis for my minor in Secondary Literature, Language, and Writing and have been working on my thesis for the past 18 months. My hope with writing my thesis is to explore how to be a better educator and how to incorporate 21st century technologies to improve student learning. With that in mind, I would like to ask permission to have your student be an important piece of my research data.

I will need students to participate in response systems activities with use of their Smart Phones, iPad, iPhone, iPod touch, or any other tablet device. After we complete these activities in approximately three to four school weeks, I will then ask the students to complete a survey and have a group interview with three to four students. All of the data I collect will be in my research analysis to speak to the success of the response system activities I have chose to integrate into the classroom.

I do not foresee any known risks with your student's involvement in this voluntary project. It is one for which you agree to participate. Your student's completion of this process is 100% voluntary and will have no negative impact on your child's grade. If you choose not to finish the process once started, you will not be penalized in any way and you will not have to provide a written or verbal reason for no longer continuing with the process once started. In my research report and analysis, every student, the classroom, school, and teacher will have a pseudonym so there is no way to trace responses back to your student.

I would greatly appreciate you allowing your student to participate in my study. If you and your student could please sign below to ensure both of you agree to and understand the terms above. If you have any questions, please do not hesitate to contact me.

Thank you,
Kimaya S. Hudgins
Kimaya S. Hudgins

Parent Printed Name

Name Parent Signature

Date

Student Printed Name

Student Signature

Date