TECHNOLOGY INTEGRATION: KEY COMPONENTS FOR

EFFECTIVE IMPLEMENTATION IN SECONDARY

ENGLISH/LANGUAGE ARTS CLASSROOMS

by

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INTRODUCTION

The term "digital natives" has become as ubiquitous as the technology they use. Coined by Mark Prensky in 2001, it is now a common phrase, used in both casual and professional conversations, that refers to the generations born into a world saturated with technology. Because a growing digital native population reflects a shift in the ways in which adolescents learn and communicate, the concept pervades the field of education in particular. For example, according to the Digital Future Report of 2011 (Center for the Digital Future 2011), 96% of individuals ages 18 and under who use the Internet claimed that their online activity had some level of importance for their schoolwork. Because a multitude of studies reveal similar findings, teachers are scrambling to integrate technology as a way to engage, entertain, and relate to students of this generation.

However, controversies arise over the potential negative impacts of extensive technology usage, including concerns over a "moral disconnect" in digital communication (Fodeman & Marje, 2009), lower academic performance (Austin & Totaro, 2011), and an inability to engage in valuable face-to-face conversations (Fodeman & Marje, 2009). For this reason, educators must be wary in their acceptance of all technology while simultaneously seeking ways to effectively incorporate it into their classrooms. This task is particularly relevant for Secondary English/Language Arts educators because of their role in developing students' understanding of and skills relating to communication. These teachers are responsible for instructing students how to effectively communicate using multimodal means and how to thrive as critical consumers in a digital world. For this reason, Secondary English/Language Arts teachers must assess and potentially revise three distinct areas in order to effectively integrate

technology in their classrooms: their attitudes toward technology, their perceived role of the teacher, and their expectations for students. These three components form the foundation for effective implementation in secondary English/language arts classrooms.

**Purpose of the Study**

This study was intended to highlight what educational technology experts believe are the necessary components of classroom instruction required for effective technology integration in Secondary English/Language Arts classrooms. Through interview methodology, the researcher contacted teachers and specialists about their personal experiences using and integrating various forms of technology into the classroom and/or about their research findings regarding the use of technology in academic settings. Based on the data from these interviews, the researcher identified three key components necessary for the effective use of technology in the classroom: a transformed view of technology as a tool that requires focusing less on the technology itself, and more on how it mediates learning; new roles for the teacher as a learner and facilitator; and modified expectations for students relating to their critical understanding of technology. The researcher compiled and extended existing research in order to analyze a series of typical Secondary English/Language Arts lessons through the lens of the three components characterized in this study.

**Research Questions**

This research study attempted to answer the question, "What are the key characteristics of effective uses of technology in secondary English/Language Arts classrooms?" Some of the sub questions included:

1.  What are characteristics of effective and ineffective uses of technology?

2.  What changes must teachers make in their attitudes toward technology in order to effectively integrate technology in their classrooms?

3.  How should teachers adjust their perception of their role as educators to take advantage of technology's full potential?

4.  What should teachers expect from their students when using technology in the classroom?

## REVIEW OF RELEVANT LITERATURE

In the same article in which Prensky (2001) introduced the concept of "digital natives," he also referred to teachers as "digital immigrants," emphasizing the fact that teachers and their students come from different worlds.  Although upcoming teachers may be considered digital natives by their own educators, they will nonetheless remain digital immigrants in comparison to their students.  Even if educators share the same technological knowledge as their students, they cannot understand the subtle nuances and social norms associated with the use of those same tools in their students' world.  For this reason, effective technology integration in Secondary classrooms is a complex and demanding undertaking.

For the purpose of this study, the "effective" use of technology refers to the act of integrating technology in the classroom in such a way that engages students, improves the quality of learning, and makes the most of time, cost, and skill level.

**Criticism of Technology in the Classroom**

As Greek culture shifted from the oral preservation of information to written documentation centuries ago, Plato argued against this new form of communication.  His

critiques parallel the same forms of argument being made against technology today. For example, Plato claimed that writing damages memory, deteriorates the mind, and reduces the ability to learn. Ong (1986) contends that "Plato's objections against writing are essentially the very same objections commonly urged today against computers by those who object to them" (p. 27). Just as writing eliminated the need to memorize, so does immediate access to information on the Internet reduce the need to remember information. Just as writing allowed individuals to refer to outside sources rather than what they knew or had memorized, so does crowdsourcing remove the focus from one specialist to a collective intelligence. And, just as Plato argued that writing limited the ability to learn, today one could argue that students' obsession with video games and fast-paced movies make it more challenging for them to focus. Plato's line of reasoning suggests what Ong (1986) directly states: "Technologies are not mere exterior aids but also interior transformations of consciousness" (p. 32). In other words, technology threatens the current system of education because it alters the ways in which students think and communicate, which ultimately transforms how they learn.

More practical challenges relating to technology use in the classroom draw attention to the time-consuming process of learning about and integrating technology, the high cost of acquiring technological devices, and the lack of teacher training in this area (Sweeny, 2010, p. 122). Jenkins (2009) highlights three areas of concern: the participation gap, the transparency problem, and the ethics challenge (p. xii-xiii). The participation gap refers to the unequal access to technology and the benefits it provides. Jenkins cautions that adolescents oftentimes fail to acknowledge that technology and the media shape the world, which he refers to as the transparency problem. Finally, the

ethics challenge points to the moral dilemmas brought about because of technology and

the responsibility that adolescents must take as producers of media.

**Support of Technology in the Classroom**

Despite these challenges, Jenkins (2009) and many other scholars recognize the

need for technology in the education of adolescents today. In 2006, Swenson, Young,

McGrail, Rozema, and Whitin reported that adolescents live "media-saturated lives,"

spending 6.5 hours per day using some form of media (p. 360). As technology advances,

this number is expected to climb at an astounding rate. For this reason, Davidson (2011)

argues, "Learning to think in multiple ways, with multiple partners, with a dexterity that

cannot be computerized or outsourced, is no longer a luxury but a necessity" (p. 77). As a

result of the ever-progressing nature of technology, the role of the average citizen has

been transformed. Sweeny argues that "[r]ather than merely being consumers of

information, the broader public can now be producers and collaborators as well"

(Sweeny, 2010, p. 122). Regardless of whether or not educators support the important

role technology plays in the lives of their students, technology *does* pervade their

students' lives, and educators should, at the very least, be willing to instruct students how

to behave as responsible citizens and critical consumers.

Students must learn that their posts and comments on a social network site could

have serious impacts on their relationships and on their future. They must be taught to

respect the privacy of individuals when making videos. They must acknowledge that

they are responsible for the anonymous comments they post on a forum. They must

understand the necessity of citations and the complications of copyright issues.

Essentially, adolescents need to recognize that their actions in a virtual world have effects

on the real world. Jenkins (2009) explains, "Although youths are becoming more adept at using media as resources (for creative expression, research, social life, etc.), they often are limited in their ability to examine the media themselves" (p. 20). Educators should encourage students to analyze their own media and technology use through a critical lens.

Furthermore, educators can instruct students how to use technology in the most efficient and effective way. Contrary to Plato's concern that technology replaces basic human abilities, Jenkins (2009) argues that with technology, "[y]ouths must expand their required competencies, not push aside old skills to make room for the new" (p. 28). Modern technology enables students to use their brain capacity and energy to focus on accessing, sharing, and creating knowledge with others, rather than simply memorizing it. This idea that shared knowledge among many is greater than specialized knowledge from one expert, a concept also known as collective intelligence, may threaten the traditional role of the teacher. Davidson (2011) states, "We were inverting the traditional roles of teacher and learner, the fundamental principle in education: hierarchy based on credentials" (p. 64). These transformed roles of teacher and student are crucial for educators pursuing beneficial views and uses of technology in the classroom. Supporters of technology use in an educational setting argue that effective technology integration allows both educators and their students to focus on deeper level critical thinking and engage in more valuable activities by providing support for basic skills.

However, Davidson (2011) cautions about iPods, "[They are] an unnecessarily expensive toy that does not become an academic tool simply because it is thrown into a classroom" (p. 61). This statement expands beyond iPods to all forms of technology. In their desperate attempt to engage students, please school administration, and satisfy state

requirements, teachers may be tempted to incorporate technology simply for the sake of doing so.  For example, teachers who ask students to fill out a digital copy of a worksheet in a word processing program rather than fill out a printed copy by hand have not adjusted the activity according to the principles of technology use, but merely translated a traditional activity onto a technological device.  To effectively integration technology in the classroom, teachers must first examine the curriculum and identify learning goals before deciding which forms of technology, if any, would improve the students' learning.  Young, Hofer, and Harris (2010) recommend "matching technology integration strategies to planning methods, rather than asking teachers to plan instruction that exploits the opportunities offered by particular educational technologies" (p. 30).

**Necessary Components for Effective Technology Integration**

Regardless of whether or not educators like or agree with technology use, they will have to learn how to incorporate technology into the classroom because technology has altered the ways in which students think, communicate, and learn.  Those who wish to effectively implement technology in the classroom need to analyze, and potentially transform, their current assumptions and beliefs about technology use in order to help prepare responsible citizens and leaders in the digital age.  They must focus on learning goals and how to use technology as a tool to meet these goals, rather than on the technology itself.  They should also strive to adapt their role as the expert teacher into a facilitator and co-learner.  As a result, teachers must maintain appropriater expectations for their students and their role in the classroom, as they learn about ethics and responsibilities in the digital world.

The present study aimed to identify and clarify three key components of required for effective technology integration in Secondary English/language arts classrooms: a transformed view of technology, new roles for the teacher, and modified expectations for students.

## METHODOLOGY

**Participants**

The representative population for this study was two specialists in the educational use of technology. Both were currently working as educators and were chosen based on their background knowledge of, and professional experience with, technology in an educational setting.

**Demographics**

The population for this study includes Participant A, a female professor at a local private university, and Participant B, the technology director of a local private high school actively incorporating technology in the classroom. Participant A has a PhD in Rhetoric and Composition and has worked extensively with new media writing at the college level at multiple universities. She specializes in both writing and technology, as well as both topics combined. Participant B has a degree in Psychology and a minor in Theology but has specialized knowledge as the technology director in an all-level college preparatory school, where he has worked for thirty-six years. At the time of this study, this private school is the only exemplary rated high school in Texas able to teach any part, or all, of its coursework, online.

**Data Collection Procedures**

  The researcher personally contacted the participants, and once they consented to participate in the study, individual interviews were scheduled at mutually convenient times. The interviews lasted approximately 60 minutes and were held with each participant in their respective offices. An audio recorder was used to tape the interview and a computer to record additional notes. The researcher then transcribed the interviews in order to study, analyze, and accurately represent the participants' responses.

  Participants were asked to share their academic and professional backgrounds, their personal philosophies regarding the use of technology in education, and their experiences, both successful and unsuccessful, implementing technology in the classroom. The full Interview Protocol can be found in Appendix D. An example of a base question with sample follow-up questions is listed below.

- What are your personal philosophies regarding technology integration in education?
  - How have your ideas evolved over time, if at all?
  - What have been some of the major influences on your opinions?

**Data Analysis Procedures**

  After completing the interviews, the researcher transcribed the audio-taped recordings in order to further analyze the content. The researcher looked for commonalities and differences in the responses and after evaluating them, determined how the data answered the research questions.

<u>RESULTS</u>

The researcher created the interview questions to examine the participants' respective views of technology in education, the teacher's role when using technology in the classroom, and expectations for students in such a classroom.  According to the participants, these three factors are necessary for the effective use of technology use in secondary English/Language Arts classrooms.

**Technology as a Tool**

The first key component requires that teachers develop an appropriate attitude toward technology in an academic setting.  When asked to describe her personal philosophy regarding the integration of technology in the classroom, Participant A explained that she views technology as a tool, but not a "transparent tool."  In other words, it influences what its users can do, but is also affected by its users.  She stated, "So we shape it, but it shapes us" (personal communication, April 5, 2012).  Although developers create new technologies, these same technologies in turn alter the way in which people communicate.  For this reason, Participant A strongly advised educators to examine technological tools used by their students, and those used in the classroom, in order to learn about how they shape communication, a critical element of Language Arts.

For example, she compared new technologies to more traditional "technologies" like pens, paper, and books.  Educators instruct students to use these devices because they are valuable tools of communication.  Participant A explained that the same principle applies to technology use.  She claimed, "We [educators] can't decide we don't want to do technology – we just don't have that option anymore" (personal communication, April 5, 2012).  Because technology use is a critical component of communication and

learning, it must play a vital role in the classroom. In other words, "It's really more learning how knowledge-making has changed and communicating has changed,…and not so much how to use the tool to do something we used to do in the past" (personal communication, April 5, 2012).

Participant B stated that he believed technology is "merely another tool" used to accomplish the task at hand (personal communication, April 12, 2012). He emphasized that just as with any other tool, the user of technology determines the effectiveness of the tool itself. In the classroom, this responsibility lies with the teacher. He quoted Chris Lehmann, the founder of a renowned science and technology high school in Pennsylvania: "Technology has got to be like oxygen…ubiquitous, necessary, and invisible" (personal communication, April 12, 2012). In this perspective, the teacher, rather than the technology, becomes the focus. Participant B stressed the idea that teachers should strive to replicate real world experiences in the classroom to prepare students to become good digital citizens. He explained, "The reason we do some of the things we do at [our school] is because the world *is* unfiltered, so we've got to be able to help our students function in that structure" (personal communication, April 12, 2012). Participant B reasoned that rather than merely using technology as a tool to engage and entertain students, teachers must integrate technology to prepare students for their lives as responsible citizens in a digital age.

**Role of the Teacher**

If technology is merely a tool for more efficient and effective learning, the teacher's role is critical to its success. For this reason, the role of the teacher is the second critical component of effective technology integration in the classroom.

Participant A emphasized that the way educators teach stems from their personal philosophies about the role of the teacher in the classroom. By adjusting their attitudes about their role in the classroom, educators will ultimately modify how they teach. At the most fundamental level, in order to effectively engage with technology as an educator, a teacher must be willing to be a beginner. Contrary to the traditional view of the teacher as the specialist, the holder of knowledge, this mindset requires teachers to see themselves as participants in the process of learning. Many teachers avoid this position to evade the vulnerability that comes with making mistakes and losing some control of their students.

Participant A argued that teachers need to actively confront their fears to find success with technology use in the classroom. For example, Participant A pointed out that many educators fear Wikipedia, and consequently avoid it by instructing students never to use it and refusing to learn more about it. However, Participant A suggests, "Why be afraid of Wikipedia? Isn't it much more interesting to actually look at Wikipedia, look at the sources…critically?" (personal communication, April 5, 2012). This willingness to acknowledge challenges and invite students to participate in overcoming them and learning from them is a key characteristic of a successful teacher in working with technology.

When asked if she agreed that many secondary English teachers are resistant to technology use in the classroom, Participant A explained that educators in the field of the humanities may be naturally opposed to technology because the humanities centers on the "conserving of traditional…methods" (personal communication, April 5, 2012). In other words, technology does not fit in with their identity, as it might for educators teaching

math and science.  For this reason, Participant A recommended that English teachers focus on the creative aspect of technology rather than the more technical component.  These educators should focus on creativity and their students, "and *then* the technology is a way to do that" (personal communication, April 5, 2012).

Similarly, according to Participant B, the teacher is the most important component of teaching.  He argued that teachers' attitudes form the foundation of their success with technology.  In his opinion, English teachers need to be innovative by challenging themselves in order to challenge students.  Participant B believes that effective use of technology in the classroom shifts the teacher from the specialists to a fellow learner.  He also stressed the importance of teachers' familiarity with the assignments they create.  For example, he told a story of a time when multiple students asked for his help in making a video for an assignment.  When he asked the teacher who assigned the video if she knew how to make the video, she responded that she did not.  Participant B insisted that if teachers have not attempted the assignment, they should not assign it.  He stated, "[I]f you don't know how to do it, you're asking your kids to do something that you haven't done…I think that's wrong" (personal communication April 12, 2012).  He argued that teachers must have a basic knowledge of how to complete the assignment before assigning it to students.   While teachers are fellow learners in the classroom, they are responsible for ensuring that the assignments they develop are appropriate and accessible to their students, whether by experiencing it themselves or finding helpful resources for students.

However, he acknowledged that because teachers are learning themselves, they may face some challenges.  Furthermore, it is impossible for teachers to learn how to use

all aspects of technology.  Nevertheless, teachers integrating technology in their classrooms are responsible for presenting students with a variety of options available for fulfilling assignments and encouraging students to find what works best for them.  He admitted, "I'm still trying to push our teachers to say, 'Here is the project – you decide how you're going to present it'" (personal communication, April 12, 2012).  Teachers should then review students' projects to guarantee that students have the necessary skills and resources required to complete the assignment.

Such projects require that educators give students control, another vital component in Participant B's view.  He explained that this freedom not only forces students to become more responsible and independent learners, but also leads to collaboration.  For example, Participant B pointed out that his school requires students to bring a technological device to school, but it does not specify what brand or type of device they must use.  In his words, "There may be a classroom that's got three Macbooks, three Macbook Pros, two Dells, two Gateways, two…Toshibas.  And one kid may have Word and one kid may have Pages, and one person may have Google Docs" (personal communication, April 12, 2012).  While this open environment intimidates many teachers, Participant B believes that such an atmosphere encourages students to discuss problems with one another and work together to face challenges.

In his opinion, teachers' egos are the primary reason why they resist creating such a classroom environment.  He explained, "As soon as you introduce a computer in the classroom, the teacher is no longer the smartest thing there" (personal communication, April 12, 2012).  Participant B's statement emphasizes the difficulty of finding the balance between being knowledgeable about technology and being willing to set aside

pride and learn along with students.  This requires that teachers pursue innovation by finding new ways to teach.  Participant B claimed that teachers should create new teaching techniques instead of simply using the same pedagogical strategies they experienced when they were students.  By doing so, educators help prepare students for the future, rather than teaching students to the past.  He suggested that teachers maintain an awareness of technological progressions to constantly remind themselves that students' worlds are far different from their own world.  Nevertheless, he emphasized the importance of continuing to teach students basic skills, such as patience and face-to-face communication, which are valuable skills even in a digital age.

**Student Expectations**

Although both participants stressed the significance of the teacher's role in the effective use of technology, students are also a vital component of the process.  The students' role, as well as teachers' expectations of their students, creates the third necessary component of effective technology implementation.  This process begins by recognizing students' backgrounds and assessing their experiences with technology.  According to Participant A, students currently have a very "scattered understanding of technology, depending on what they have access to" (personal communication, April 5, 2012).  For example, she described how in one of her university level classes, she asked each student to present information about a different digital tool, and many of the tools selected were unfamiliar to the majority of the class.  Because each student has experiences with unique tools, they must attempt to collaborate with other students and learn from each other.

This collaboration is most fruitful when students become willing to view their own use of technology with a critical lens. Rather than merely accepting that technology is an essential component of their lives or adamantly opposing technology use, students should be guided to analyze the potential gains and consequences of their technology use on different areas of their lives – social, political, academic, and professional.

Similarly, Participant B aims for his students to become "good digital citizens" (personal communication, April 12, 2012). In his words, "They've got to know what's good stuff, and what's bad stuff, and figure that out" (personal communication, April 12, 2012). This will allow them to become active participants in both their learning and in society. However, as teachers provide students with more independence as discussed in the role of the teacher, students need to handle that freedom responsibly.

Furthermore, Participant B argued that students should not only be technologically literate, but also fluent. He described a presentation he once witnessed, in which one image pictured a man with a hammer and wood scattered about, one image of a man with a hammer and a wooden box, and one image of a man with a hammer and a wooden house. The first person represents the "illiterate" because the person had no understanding of how the hammer, the tool, functioned. The next illustration depicts the "literate," because the man understood enough of the tool's function and how it worked to build a simple box. The final image represents the "fluent," because the man was able to go beyond the basics and take advantage of the tool's full capabilities to construct an entire house. Participant B believes that students should strive to be fluent users of technology, not merely comprehending the basic facts about the tool, but having the ability to use the tool in the most constructive manner possible.

<u>DISCUSSION</u>

Unfortunately, both teachers and students oftentimes fail to take full advantage of the abilities technology offers, resulting in ineffective use. When any of the three components described in this study are lacking, technology use in the classroom will most likely fall short of its potential. Furthermore, because the three features are interrelated and overlapping, failure in one area will probably result in failure in all three areas. However, by reimagining technology as a tool, transforming the role of the teacher, and modifying student expectations, technology integration can become an effective way to improve learning and engagement in the classroom.

**Example 1**

For example, Participant A pointed out that many current trends in technology use for educational purposes are merely being recycled. This results in the same monotonous and stifling environment in classrooms where students complete the same worksheets and take the same tests week after week. One notable trend in technology integration for Secondary English/Language Arts classrooms is the use of audio recordings during reading times. Educators initially put this activity into practice because audio recordings were believed to better captivate students' attention, to provide modeling for appropriate oral reading strategies, and to save time by replacing the oftentimes slow, choppy reading of struggling readers. However, because students are so familiar with this activity, they become bored when listening to endless audiotapes, which hinders them from listening to the modeled reading, which then requires the teacher to review the material, resulting in the use of additional time. Teachers follow this precedent because they have experienced it and witnessed it in other classrooms, and may struggle to find a better activity to replace it.

This example highlights a case in which the role of the teacher is downgraded to someone who merely enacts lesson plans, a technician. Participant A noted that, "teachers aren't treated like people who have creative brains and tons of experience and who can generate their own ideas" (personal communication, April 5, 2012). Moreover, because the teacher in this scenario merely follows a set precedent, students are not given the opportunity to explore new possibilities, and they fail to view technology as a constructive and interactive tool. Participant A encouraged teachers to collaborate with one another, find strong tech support, and view themselves as innovators to effectively implement technology. By shifting their role from a teacher who merely follows pre-designed lesson plans and tested ideas to a unique source of creativity and innovation, educators will find and develop more effective uses of technology in the classroom. Teachers may discover that students benefit more from reading aloud without the aid of technology, a decision which would require them to view technology as a tool, rather than merely a time-saver. Educators may even ask students to record themselves reading aloud for an audience in order to motivate them to seek comprehension to better enable them to read with fluency and expression. In this scenario, the teacher's innovation and creativity provides students with the role of producer, rather than consumer, by asking them to utilize technology in a meaningful way.

**Example 2**

Another typical lesson plan for high school English classes requires students to engage in an online discussion in response to a prompt posted by the teacher. For instance, a teacher may ask students to write a two-paragraph response to this prompt: "Describe Tom Joad's relationship with one of his family members in John Steinbeck's

*Grapes of Wrath*." Students are also typically required to respond to two of their classmates' comments.

Unfortunately, this well known assignment constitutes an ineffective use of technology because it downplays the role of the teacher and sets low expectations for students, which contrasts technology's support of a collective intelligence. Participant A criticized many school web applications, because they are designed for institutional control. She acknowledged that teacher or administrative control is not compatible with the effective use of technology. Because technology focuses on collaboration and a collective intelligence where knowledge is generated from a group rather than one specialist, top-down control no longer functions with technology. In the example illustrated above, Participant A pointed out the flaw that only the teacher has the ability to post the prompt. However, in a truly effective technological environment, students should be able to post prompts and interact with each other in a more dynamic way.

Teachers could alter this task by assigning different students to post a prompt each day, or they may ask students to engage in a more natural discussion online, rather than following the typical one-post, two-comment structure. Because students will be able to discuss what they find interesting and ask questions about what they are curious about, the discussions will be much richer and more effective. By taking advantage of technology's focus on cooperation, the teacher becomes a facilitator and guide as students collaborate and develop critical thinking skills.

**Example 3**

Many English teachers oftentimes ask students to post entries in a blog format, because they recognize that many students use blogs in their free time. Using this format,

a teacher may assign students to create a sentence outline for an upcoming research project in the form of a blog post.  Essentially, this teacher requires students to complete the same response to a prompt they would have answered on paper, but on a blog.

This misguided use of a technological application points to a flaw in the teacher's view of technology known as the "creepy tree house effect."  This term refers to the concept of "grown-ups invad[ing] kids' spaces" (personal communication, April 5, 2012).  Participant A explained that just as it is "creepy" for an adult to play in a child's tree house, it is equally awkward and transparent when teachers use technology in a shallow effort to engage their students.  The more teachers attempt to use what students' are already using without taking advantage of the tool's true functions, students begin to resent their teachers' use of technology because, in Participant A's words, "it doesn't lead to anything" (personal communication, April 5, 2012).  Participant A strongly discouraged teachers from using technology merely for the sake of claiming they used it.  She stated, "[I]f you're trying to take what you already were doing, which is reading stuff and taking tests, or listening to lecture notes and taking tests, and just moving onto a device, you just waste five-hundred dollars" (personal communication, April 5, 2012).  Participant B expressed a similar sentiment, stressing that digitizing what already exists is not an effective use of technology.  Because many teachers fight the tendency to translate what they already know into a technological device, Participant B recalled a question that he always instructs teachers to keep in mind: "How is that going to improve the quality of your lesson and teaching?" (personal communication, April 12, 2012).

Participant A explained that to avoid the fruitless use of technology, teachers should research the true purpose of the tools they use in the classroom.  For example, the

teacher who assigned the blog entry assignment may adjust the activity after discovering that blogs are not merely online journals, but an outlet of expression and a tool for organizing and presenting multimodal components. To take full advantage of the blog format, students should be instructed how to incorporate multiple modalities such as audio, video, and interactive hyperlinks. Rather than asking students to post a sentence outline, the teacher may require students to build an online storyboard for their paper, filled with images, links to sources, and audio notes. Then the teacher could provide students with an opportunity to comment on each other's blogs to provide feedback. Such a transformation requires teachers to experience a shift in the way they view technology to take full advantage of the unique properties different technological tools possess. Furthermore, educators become facilitators as they inform students about the ethical dimensions, such as copyright issues and appropriate "netiquette," when presenting ideas in an online setting. They must also assist students in learning how to better communicate through technology to prepare them for providing online feedback. These tasks require teachers to expect their students to act as responsible and ethical citizens in the digital age, as well as challenge them to take full advantage of a tool they may currently overlook.

**Example 4**

As Participant A explained, many English teachers restrict students from using Wikipedia in any fashion for all assignments. However, this practice is neither warranted nor beneficial to students. In this example, technology is viewed as dangerous, rather than a tool that may be used for potential good if utilized correctly by the user. The

teacher and published texts are viewed as the specialists, and the students are viewed as subject to the Internet, rather than intelligent citizens of the digital age.

Participant A posited a different approach to Wikipedia. For this lesson, the teacher would begin by asking students to read the Wikipedia page about Wikipedia. This activity would provide the students with an opportunity to learn more about the origins of Wikipedia and the process of its entries. Furthermore, it would allow students to experience Wikipedia as a tool for assimilating information. After reading and discussing the information as a class, the teacher could ask students to find examples of both accurate and inaccurate Wikipedia entries. Students may be required to develop a list of effective uses of Wikipedia and ineffective uses. Then they might recognize that just as any printed encyclopedia, Wikipedia is not an appropriate source to use in a scholarly argument. However, they may discover that Wikipedia serves as a wonderful archive for sources related to a given topic. Through this activity teachers confront their fears, create high expectations for students, and view technology as a tool for the collective intelligence to communicate vast amounts of information.

<div align="center">CONCLUSION</div>

For the purposes of this study, the "effective" use of technology refers to the act of integrating technology in the classroom in such a way that engages students, improves the quality of learning, and makes the most of time, cost, and skill level. The participants' responses indicate that the key components of classroom instruction that lead to such technology use include a view of technology as a learning and teaching tool, the teacher's role in the classroom as a co-learner and innovator, and clear expectations for students regarding their critical use of technology.
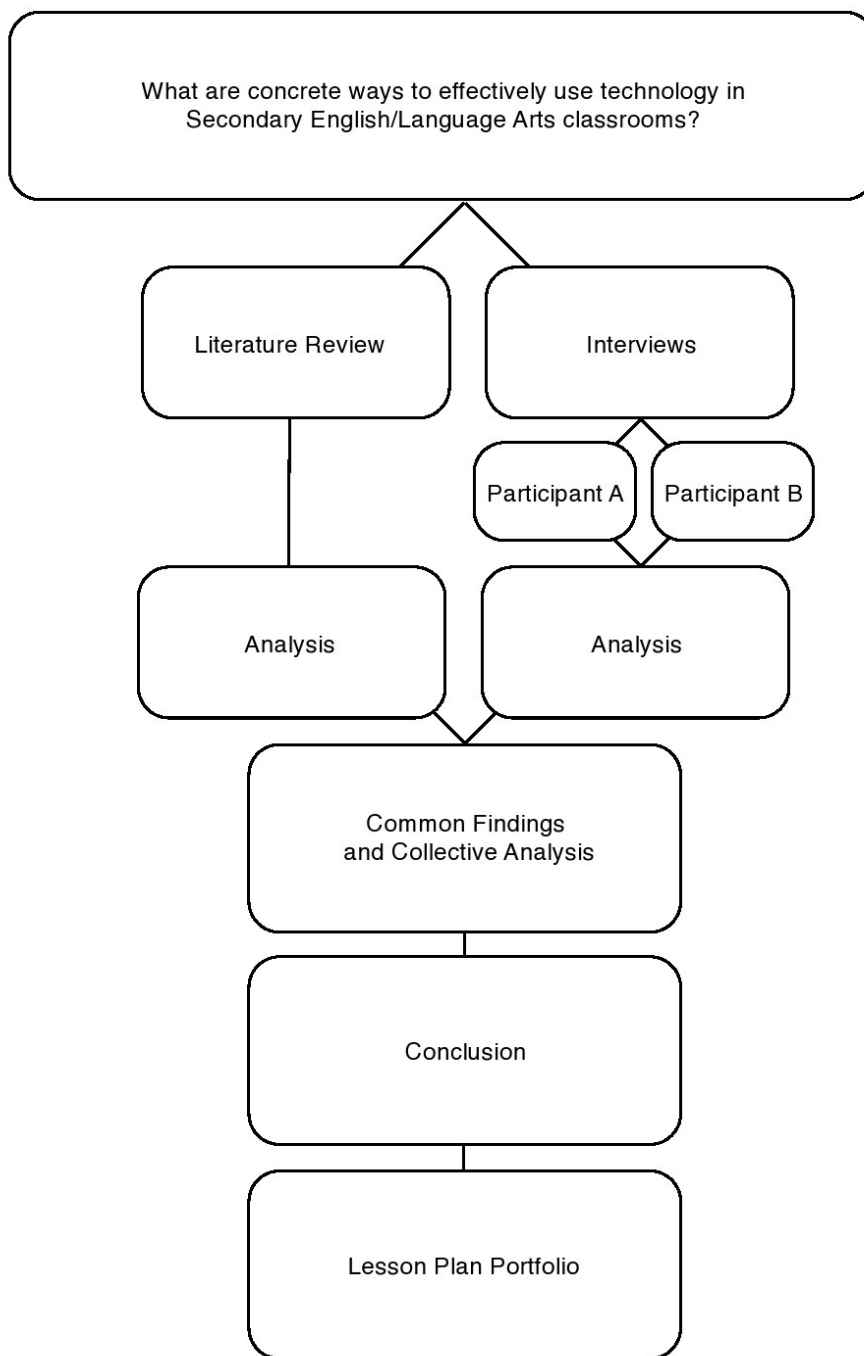
One of the most vital components of effective technology use is maintaining a focus on broad principles and learning goals rather than on the technology itself. In the digital age, students are no longer limited to their personal knowledge and experiences. With the support of technology, they have access to unlimited information and possibilities. For this reason, educators need to shift their focus from acquiring and memorizing data to accessing, synthesizing, and communicating information in a collaborative environment. Furthermore, students must learn to critique their own technology use and analyze the ways in which technology and media affect and influence their lives.

Educators should determine the broad concepts they wish to impart to their students and determine whether technology functions as the appropriate tool to meet that goal, as well as discover how technology can improve that process to guide students in this digital age. Some of the important skills needed to accomplish these goals include problem-solving, critical thinking, collaboration, adaptability, effective communication across modes, accessing and analyzing information, and curiosity & imagination (Sweeny, 2010, p. 122). Participants A and B agreed that the curriculum must determine the technology, and not the reverse. Both participants essentially focused not on specific devices or precise lesson plans as the key to effective uses of technology, but on the general principles that contribute to a positive effect on students through the means of technology. If this study were to focus on instructing teachers how to utilize specific tools, the study would rapidly become obsolete because of the ever-increasing pace of production in the technology industry. Furthermore, even the most costly tools will not prove effective in all situations and scenarios.

Only by being willing to transform the roles of teacher and student, as well as by focusing on broad learning goals that necessitate technology's use as a tool, will educators of Secondary English/Language Arts classrooms truly prepare their students to be critical consumers and responsible citizens in the modern world.

<div align="center">LIMITATIONS OF THE STUDY</div>

Because only two professionals participated in this study, the results are limited to their experience and opinions. Although both participants had varying educational and professional backgrounds, they shared many similarities, such as working for private educational institutions in a local area. These similarities may have contributed to similar responses in their respective interviews. Furthermore, because the interview with Participant B was conducted in his office, the presence of nearby students and staff may have limited his responses. Finally, the findings of this study are limited to Secondary English/Language Arts classrooms, and may not apply to other content areas or grade levels. The results of this study, therefore, should be interpreted with caution.

APPENDIX A: GRAPHIC ORGANIZER

What are concrete ways to effectively use technology in
Secondary English/Language Arts classrooms?

Literature Review

Interviews

Participant A

Participant B

Analysis

Analysis

Common Findings
and Collective Analysis

Conclusion

Lesson Plan Portfolio

APPENDIX B: NIH CERTIFICATE OF COMPLETION

**Certificate of Completion**

The National Institutes of Health (NIH) Office of Extramural Research certifies that **Meagan Carley** successfully completed the NIH Web-based training course "Protecting Human Research Participants".

Date of completion: 02/18/2012

Certification Number: 869282

**INSTITUTIONAL REVIEW BOARD**

**PROTOCOL REVIEW REQUEST**

The TCU Institutional Review Board (IRB) is responsible for protecting the welfare and rights of the individuals who are participants of any research conducted by faculty, staff, or students at TCU. Approval by the IRB must be obtained prior to initiation of a project, whether conducted on-campus or off-campus. While student research is encouraged at both the undergraduate and graduate level, only TCU faculty or staff may serve as Principal Investigator and submit a protocol for review.

Please submit this protocol electronically to Dr. Meena Shah, IRB Chair and Dr. Janis Morey, Director of Sponsored Research. Also submit a consent document, HIPAA form if applicable, Protecting Human Research Participants Training certificates, recruitment materials, and any questionnaires or other documents to be utilized in data collection. A template for the consent document and HIPAA form, instructions on how to complete the consent, and a web link for the Protecting Human Research Participants Training are available on the TCU IRB webpage at www.research.tcu.edu. Submission deadline for protocols is the 15th of the month prior to the IRB Committee meeting.

1.  **Date:** March 7, 2012

2.  **Study Title:** Technology integration: Finding concrete ways to effectively use technology in secondary English/language arts classrooms

3.  **Principal Investigator (must be a TCU faculty or staff):** Dr. Ranae Stetson

4.  **Department:** TCU College of Education

5.  **Other Investigators: List all faculty, staff, and students conducting the study including those not affiliated with TCU.**
    Meagan Carley, TCU Undergraduate student

6.  **Project Period:** March 30, 2012-August 31, 2012

7.  **Funding Agency:** N/A

8.  **Amount Requested From Funding Agency:** N/A

9.  **Due Date for Funding:** N/A

10. **Purpose: Describe the objectives and hypotheses of the study and what you expect to learn or demonstrate:**
The purpose of this study is to analyze effective uses of technology in the Secondary English/Language Arts classroom. The researcher will interview teachers and specialists about their personal experiences using and integrating various forms of technology into the classroom and/or about their research findings regarding the use of technology in academic settings. The researcher hopes to highlight key characteristics of effective uses of technology and compile a portfolio of lesson plans utilizing these characteristics.

11. **Background: Describe the theory or data supporting the objectives of the study and include a bibliography of key references as applicable.**
The researcher's interest in this topic developed through personal experiences with technology in the classroom as a student, various education courses discussing the integration of technology in academic settings, the inclusion of objectives relating to technology in the Texas Essential Knowledge and Skills (TEKS), and a personal interest in the effective uses of technology.

As technological innovations are produced and disseminated into our culture at increasingly rapid rates, younger generations are becoming more adept at integrating these devices into their lives. According to the Digital Future Report of 2011 produced by the Center for the Digital Future (2011), 96% of individuals ages 18 and under who use the Internet claimed that their online activity has some level of importance for their schoolwork. A 2005 study conducted by the Pew Internet and American Life Project reported that more than 50% of American teenage Internet users have created media content (Jenkins, 2009).

Because adolescents interact with the Internet and new media literacies outside of the classroom, the researcher desires to identify effective uses of technology within the classroom to provide a relevant and enriching education for those students.

References
Jenkins, H. (2009). Confronting the challenges of participatory culture: Media education for the first century. Cambridge, Massachusetts: MIT Press.
Center for the Digital Future. (2011). The digital future report of 2011. Los Angeles, CA: USC Annenburg.

12. **Subject Population: Describe the characteristics of the participant population including the inclusion and exclusion criteria and the number of participants you plan to recruit:**
The population for this study will include a TCU professor specialized in educational technology and the principal of a local all-level college preparatory school actively incorporating technology into its classrooms.

13. <u>Recruitment Procedure:</u> **Describe your recruitment strategies including how the potential participants will be approached and precautions that will be taken to minimize the possibility of undue influence or coercion. Include copies of the recruitment letters, leaflets, etc. in your submission.**
The researcher will use purposeful sampling by personally contacting the potential participants through e-mail and requesting their participation in a research study analyzing effective uses of technology in secondary English/Language Arts classrooms.  The participants will be informed that the study includes a 30-60 minute long audio-taped interview.  Participants will be shown the consent form and given an opportunity to ask questions of the researcher before committing to participate in the study.  A sample interview protocol is attached to this form.

14. <u>Consenting Procedure:</u> **Describe the consenting procedure, whether participation is completely voluntary, whether the participants can withdraw at any time without penalty, the procedures for withdrawing, and whether an incentive (describe it) will be offered for participation.  If students are used as participants, indicate an alternative in lieu of participation if course credit is provided for participation. If a vulnerable population is recruited, describe the measures that will be taken to obtain surrogate consent (e.g., cognitively impaired participants) or assent from minors and permission from parents of minors.**
The participants will sign a consent form prior to participation in the study.
The information in this document will inform participants about general information regarding the study, expectations of the participants, and how the participants will be protected.  The researcher will give each potential participant the opportunity to ask the researcher any questions prior to signing the consent form.  Participation in the study is completely voluntary with no incentives or compensation offered.  If a participant wishes to withdraw from the study at any time, he or she must contact the researcher by e-mail or by phone and the participant's request will be granted.

15. <u>Study Procedures:</u> **Provide a chronological description of the procedures, tests, and interventions that will be implemented during the course of the study. Indicate the number of visits, length of each visit, and the time it would take to undergo the various tests, procedures, and interventions. If blood or tissue is to be collected, indicate exactly how much in simple terms. Flow diagrams may be used to clarify complex projects.**
Once the participants have been selected and have consented to the study, the researcher will set up a mutually convenient time for a one-time 30-60 minute individual, semi-structured interview with each participant.  Times and location will be decided upon by the researcher and each participant.  With the consent of each participant, the researcher will audio record the interview and take notes to allow for accurate portrayals of each participant's responses.  The participants will be asked standard questions regarding their background and experiences involving an integration of technology in an academic setting.  Other questions will include inquiries about their research findings, implementation of these findings,

professional opinions regarding the research topic, and observations and experiences regarding the research topic.

16. <u>**Data Analyses:**</u> **Describe how you will analyze your data to answer the study question.**
Immediately following the interview, the researcher will transcribe the recorded interview and analyze the participant's responses.  The researcher will then analyze the content of the interviews and compare it to research findings.  The researcher will also attempt to identify key characteristics for the effective implementation of technology in the classroom by reviewing the experiences and professional opinions of the participants.

17. <u>**Potential Risks and Precautions to Reduce Risk:**</u> **Indicate any physical, psychological, social, or privacy risk which the subject may incur. <u>Risk(s) must be specified.</u> Also describe what measures have been or will be taken to prevent and minimize each of the risks identified. If any deception is to be used, describe it in detail and the plans for debriefing.**
The primary potential risks of this study is the sacrifice of time by the participants.  The consumption of time due to the study will be kept as minimal as possible, and participants will be excused from the interviews if necessary.  The researcher will protect the privacy of all participants by guaranteeing anonymity.

18. <u>**Procedures to Maintain Confidentiality:**</u> **Describe how the data will be collected, de-identified, stored, used, and disposed to protect confidentiality. If protected health information is to be re-identified at a later date, describe the procedure for doing so. All signed consents and hard data must be stored for a minimum of 3 years in a locked filing cabinet (and locked room) in the principal investigator's office, lab, or storage closet at TCU. Your professional society may recommend keeping the materials for a longer period of time.**
The names of the participants will not be used at all throughout this study.  To ensure complete anonymity, an alias will be used when referring to any of the participants during analysis and the final report.  The researcher will use audio recordings for the sole purpose of analysis.  Only the researcher and Dr. Ranae Stetson will have access to the recordings.  Once the study has been completed, the voice recordings will be deleted.  All notes, consent documents, and other hard data will be kept in a secure and locked location when not in use.  Any electronic information will be kept on the researcher's personal computer with password protection.  The data will be kept in a locked cabinet in Dr. Ranae Stetson's office for a minimum of three years after the completion of the study.  Proper disposal (shredding and throwing away all remaining data) will occur at the end of the three years.

19. <u>**Potential Benefits:**</u> **Describe the potential benefits of the research to the participants, to others with similar problems, and to society.**
Participants in this study will have the opportunity to share and reflect upon their own research findings, experiences, and opinions regarding the effective integration of technology in academic settings.  In doing so, participants will guide the researcher in

developing effective lesson plans integrating technology for secondary English/Language Arts classrooms and participate in the development of effective teaching strategies for other educators.

20. **Training for Protecting Human Research Participants: Submit training certificates for all the study investigators. The training link is available on the TCU IRB webpage at www.research.tcu.edu.**

**Certificate of Completion**

The National Institutes of Health (NIH) Office of Extramural Research certifies that **Meagan Carley** successfully completed the NIH Web-based training course "Protecting Human Research Participants".

Date of completion: 02/18/2012

Certification Number: 869282

21. **Check List for the Items That Need to be Submitted:  Please combine all the files into one pdf document before submitting the materials electronically to the IRB. To prevent any delay in the approval of your protocol, use the most recent template for the protocol, consent document, and HIPAA form by downloading them from www.research.tcu.edu each time you prepare your materials.**

   a. Protocol ☒
   b. Consent document ☒
   c. HIPAA form if applicable ☐
   d. Protecting Human Research Participants Training certificate for each investigator ☒
   e. Recruitment fliers, letters, ads, etc. ☐
   f. Questionnaires or other documents utilized in screening and data collection ☒

**Texas Christian University**
**Fort Worth, Texas**

**CONSENT TO PARTICIPATE IN RESEARCH**

**Title of Research:** Technology integration: Finding concrete ways to effectively use technology in secondary English/language arts classrooms

**Funding Agency/Sponsor:** TCU College of Education

**Study Investigators:** Dr. Ranae Stetson, Meagan Carley, Undergraduate Student

**What is the purpose of the research?**
The purpose of this study is to analyze effective uses of technology in the Secondary English/Language Arts classroom. The researcher will interview teachers and specialists about their personal experiences using and integrating various forms of technology into the classroom and/or about their research findings regarding the use of technology in academic settings. The researcher hopes to highlight key characteristics of effective uses of technology and compile a portfolio of lesson plans utilizing these characteristics.

**How many people will participate in this study?**
Two professional educators with an expertise in the use of technology in Secondary English/Language Arts classrooms will participate in this study.

**What is my involvement for participating in this study?**
Participants will be asked to participate in one 30-60 minute audio-taped interview.

**How long am I expected to be in this study for and how much of my time is required?**
The study will take place between March 30, 2012 - August 31,2012, and the participants will be asked to dedicate 30-60 minutes of their time for an interview.

**What are the risks of participating in this study and how will they be minimized?**
The risks to participants are minimal. Potential risks for participant participation in this study are maintaining confidentiality and spending time participating in the interview. The researcher will ensure that the identity of each participant remains confidential (explained below). The time lost will be minimal and agreed to by the participants

**What are the benefits for participating in this study?**
Participants in this study will have the opportunity to share and reflect upon their own research findings, experiences, and opinions regarding the effective integration of technology in academic settings. In doing so, participants will guide the researcher in developing effective lesson plans integrating technology for secondary English/language arts classrooms and participate in the development of effective teaching strategies for other educators.

**Will I be compensated for participating in this study?**
No, the participants of this study will not be compensated.

**What is an alternate procedure(s) that I can choose instead of participating in this study?**
There are no alternate procedures for participating in this study.

**How will my confidentiality be protected?**
The names of the participants will not be used at all throughout this study. To ensure complete anonymity, an alias will be used when referring to any of the participants during analysis and the final report. The researcher will use audio recordings for the sole purpose of analysis. Only the researcher and Dr. Ranae Stetson will have access to the recordings. Once the study has been completed, the voice recordings will be deleted. All notes, consent documents, and other hard data will be kept in a secure and locked location when not in use. Any electronic information will be kept on the researcher's personal computer with password protection. The data will be kept in a locked cabinet in Dr. Ranae Stetson's office for a minimum of three years after the completion of the study. Proper disposal (shredding and throwing away all remaining data) will occur at the end of the three years.

**Is my participation voluntary?**
Yes, it is completely voluntary.

**Can I stop taking part in this research?**
Yes, participants may choose to cease participation at any time during this study.

**What are the procedures for withdrawal?**
If you wish to withdraw from the study at any time, you must contact either Dr. Ranae Stetson or Meagan Carley and inform either/both of them that you would no longer like to participate in this study.

Dr. Ranae Stetson: 817.257.6778, r.stetson@tcu.edu
Meagan Carley: 817.205.2133, meagan.carley@tcu.edu

**Will I be given a copy of the consent document to keep?**
Yes, a copy of the consent form will be provided for all participants.

**Who should I contact if I have questions regarding the study?**
Dr. Ranae Stetson: 817.257.6778, r.stetson@tcu.edu
Meagan Carley: 817.205.2133, meagan.carley@tcu.edu
**Who should I contact if I have concerns regarding my rights as a study participant?**
Dr. David Jenkins Associate Dean for Research: 817.257.6157

Dr. Meena Shah, Chair, TCU Institutional Review Board: 817.257.7665

Dr. Janis Morey, Director, Sponsored Research: 817.257.7516

Your signature below indicates that you have read or been read the information provided above, you have received answers to all of your questions and have been told who to call if you have any more questions, you have freely decided to participate in this research, and you understand that you are not giving up any of your legal rights.

**Participant Name (please print):**
_____

**Participant Signature:** _____
**Date:** _____

**Investigator Name (please print):** _____

**Investigator Signature:** _____
**Date:** _____

APPENDIX E: SAMPLE INTERVIEW QUESTIONS

Technology integration: Finding concrete ways to effectively use technology
in secondary English/language arts classrooms

1.  What is your educational background?

2.  What is your professional background?

3.  How many years have you been teaching?

4.  What are your personal philosophies and opinions regarding the integration of
    technology in the classroom?

5.  How have your ideas evolved over time, if at all?

6.  What have been some of the major influences on your opinions?

7.  What are your personal philosophies and opinions regarding the integration of
    technology in the secondary English/language arts classroom?

8.  Have you witnessed a change in students and their experiences with and attitudes
    toward technology over time?

9.  In what ways do you incorporate the use of technology in your classroom?

10. Which specific devices or resources have you found particularly effective?

11. Which specific devices or resources have you found particularly ineffective?

12. What observable effects has your use of technology had on your students?

13. How do your students react to the use of technology in the classroom?

14. What are some advantages of incorporating technology into education that you
    have witnessed or experienced?

15. What are some disadvantages of incorporating technology into education that you
    have witnessed or experienced?

16. Do you believe technology is an important aspect of secondary English/language
    arts classrooms?

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ABSTRACT

The focus of this study was to analyze experts' perspectives about technology use and integration in Secondary English/Language Arts classrooms.  Through interview methodology, the researcher contacted teachers and specialists about their personal experiences using and integrating various forms of technology into the classroom and/or about their research findings regarding the use of technology in academic settings.  This study includes a review of current literature that relates to the research topic, and an intensive analysis conducted after both interviews.  The results indicate that participants emphasize three key components necessary for effective technology use in Secondary English/language arts classrooms: a view of technology as a learning and teaching tool, the role of the teacher as a learner and innovator, and clear expectations for students regarding their critical use of technology.