

ABSTRACT

Technology, Education, and Literacy: An Investigation into the Cyborgial Nature of Education in the 21st Century

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In modern American high schools, technology has changed the way we view education and the teaching of literature. In this thesis, I do not seek to argue completely in support or against technology in education. Rather, I wish to explore the consequences of a technologically rich classroom on the teaching of literature. New media such as Facebook, YouTube, and other social and creative outlets are explored and analyzed for effects on the teaching of literature, specifically in high school education. Also, I explore the shifting idea of the Digital Divide in the modern classroom and investigate the new and developing causes of this separation between man and machine. In today's classrooms, teachers must work in a state of constant change and adjustment when it comes to technology. However, in the face of all of this change, has the teaching of literature shifted for good or for ill?

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TECHNOLOGY, EDUCATION, AND LITERACY: AN INVESTIGATION INTO
THE CYBORGIAL NATURE OF EDUCATION IN THE 21ST CENTURY

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CHAPTER ONE

A Brief History of Technology in the Classroom

All educational subjects have been affected by technology, from math and science to music and art. But perhaps most dramatically changed is the instruction of literature within secondary classrooms. With the introduction not only of the accessible Internet, but also of e-readers and social media, the way students look at, interpret, and understand literature has changed drastically. In the wake of the technological revolution, is it important to understand these changes and to harness these new technologies? Or would it be best for educators to continue their instruction in the tech-less way of their predecessors?

In an age when teachers are expected to work side-by-side with technology on a daily basis, when teachers are made to become nearly a cyborg, or to become part machine and part human, it is important to note the effects of technology upon modern education. Classrooms today seem to exist within a sink-or-swim scenario with technology: they must learn to get along with technology and use it to the best of their ability, or they must do without and suffer the technologically unskillful students as a result. Therefore, the classroom must become cyborgial in nature to succeed. Humans of the classroom must work together with technology to prepare students in technology knowledge. This situation creates a hybrid of teacher or student and machine, a cyborgial classroom in which each component works together to create a well-rounded whole. In the following chapters, I will explore the effects of well-established and developing technologies upon the educational instruction of literature in American high schools. I

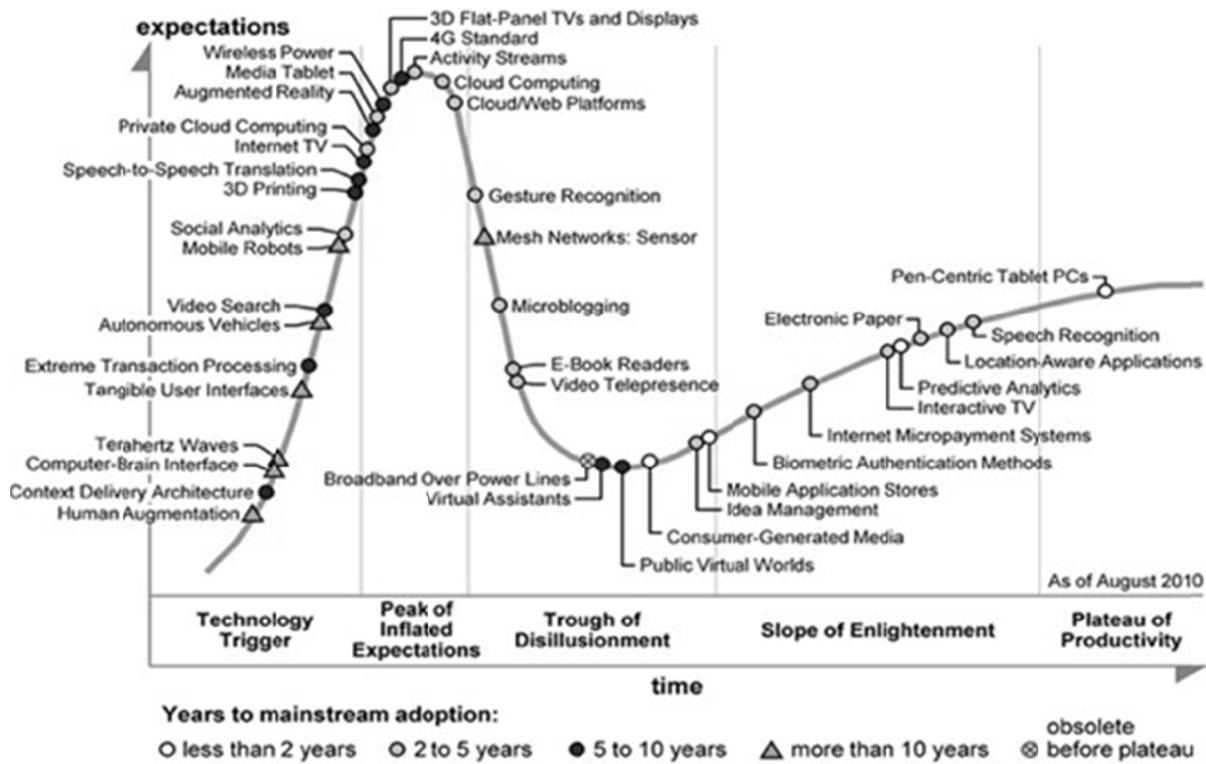
will also investigate the importance of changes brought about by the constant use of technology in this new age, cyborgial classroom.

However, before investigating the technology of today, the most appropriate first step is to better understand the phenomenon of technology and how it has impacted classrooms over time. Doing so requires looking back to the past if not for answers, but for guidance on how past technologies have impacted our present world. Many types of technology have become irreplaceable in the classroom. Most people cannot imagine classroom instruction today without the use of computers, television, or the Internet. The purpose of this initial chapter is to explore how and when technology became so essential to classroom instruction at the high school level. Why have we as educators become so connected to these technologies? What is the background to our dependency? What views have both critics and supporters espoused during the transition we have seen during the past century? To understand the present, we must always study the past. In an attempt to understand the growth of technology in schools and the effect this growth has had on students during the last century, I will investigate several historical trends that have been most influential on high school teaching today.

Since the early 1900s, numerous technologies have come and gone in American classrooms. The cycle of initial hype and later disillusionment is best captured and defined by Gartner Research through the idea of the hype cycle. Gartner Inc. is a research facility that is a major leader in technology research and advisement. Researchers at Gartner work with IT professionals, businesses, and even government agencies to analyze, interpret, and best use technology in the workforce (Gartner Inc.).

In its simplest form, the hype cycle explains the life cycle of a certain piece of technology's popularity, where the x-axis is time and the y-axis is expectation. The cycle begins with the technology trigger. This is the event or the invention that brings to light a new technology. This technology then travels through the peak of inflated expectations, slides down into the trough of disillusionment, is re-discovered with the slope of enlightenment, and finally (if it has survived this long) levels out in the plateau of productivity. The rollercoaster-like cycle of hype is not an absolute rule, but rather captures the general idea of the popularity of a technology (see figure 1 for examples).

Figure 1: The Hype Cycle with Examples of Technology (Alexander)



A classic example of faded technology is the radio. Preceded only by the United States Postal Services, Radio was once America's solution to long-distance education. In the 1920s, educators saw radio as a total solution to the technical deficiencies of the classroom. Educators throughout the nation latched onto this new technology and sought

to harness its power for classroom instruction. Distance education in the 1920s was not defined much differently than it is today. The U. S. Department of Educational Research and Improvement has defined distance education as “the application of telecommunications and electronic devices which enable students and learners to receive instruction from some distant location” (Casey 45). When engaged with distance education, the learner does not have to travel to the place of instruction. Instead, information is traded through a means such as mail, radio, or email. The first instance of distance education was the correspondence course for shorthand training known as the Pitman Shorthand training program in 1852. Self-instructed secretaries would complete the coursework and mail their completed work to the Phonographic Institute in Cincinnati, Ohio. In return, they would receive a certificate of completion at the end of the course (Casey 46).

This approach, which was based on self-instruction through mail, was the norm for distance education until radio began its ascent in the early 1900s. As one author has noted, many universities were granted educational radio licenses by 1921. Two hundred of the same types of licenses were given between 1918 and 1946 (Casey 46). The revolution of radio truly began to change the way education was communicated, understood, and used.

The radio, like many classroom technologies, began with an explosion of high expectations. After the presidential broadcast of Warren G. Harding’s successful election in 1920, radio was seen as a tool that could be used for the masses instead of those few who, before, used radio for commercial communication only. Radio was seen as a universal problem-solver, even a panacea, which was predicted to change the entire

nation: from government to education to business. Expectations were set high for the radio, especially in the academic sphere, and there were no signs that these expectations would falter any time soon. By 1922, 70 colleges and universities had tapped into the new communication tool. The number only increased in the years that followed. Any educational institution that was even remotely important had a radio station of its own. The radio was sitting upon the very peak of inflated expectations and showed no signs of giving up its position. Universities began to develop and broadcast courses that could be listened to at home for real class credit. Some of these courses were intended for elementary through high school students. These became known as Schools of the Air, or SOAs. Despite the success of these educational and public service radio stations, popularity began to drop by the late 1920s. Several stations simply lost funding and gave up their license or had it taken away. By 1937, the number of educational radio stations, once great and untouchable, dropped to a mere thirty-eight nation-wide. Radio stations of universities and colleges suffered greatly because of the sudden disinterest in the communication medium, but SOAs remained a solid part of the American education system. Despite this small amount of success, there is no doubt that radio suddenly found itself in the trough of disillusionment (Schools of the Air” 7-34).

School of the Air flourished in the mid-1900s. By the 1940’s, teachers and scholars described SOAs as educational radio broadcasts that offered unique opportunities and performed specific tasks for the educational system that incorporated these programs. First, SOAs presented courses on a certain subject that were identical to or incorporated with regular school curricula. Second, SOAs created radio programs in a set to assist in cumulative learning. Third, SOAs were created as individual programs for

specific grade levels. Fourth, these radio broadcasts were made to line up with the academic school year and broadcasted on a schedule that coincided with class schedules. Fifth, SOAs distributed supporting material to teachers and students. And lastly, SOAs were designed for the specific age range of students between kindergarten and twelfth grade. (“Education by Radio” 36).

These SOAs were created and operated by major broadcasting networks, colleges, universities, and local school boards from approximately 1929 to 1975. In the midst of their greatest popularity, SOAs reached about 2.5 million students nationwide (meaning about 10% of the nation’s school children at the time). These radio broadcasts reached a great deal of students on a daily basis. Unlike other forms of distance education that focused on supplementing lessons and giving teachers resources to assist their knowledge, SOAs provided teachers the opportunity to supplement their lessons through radio, plan an entire instructional unit, or, in some cases, would provide an entire semester’s worth of instructional material. The radio introduced an extremely new format of learning that seemed to take hold of schools across the nation. A new way of learning paired with a brand new format for relaying information created an educational fad that would soon work its way through the hype cycle.

Although some technologies have come and gone, some seem to have found a permanent niche in the education system. The Visual Instruction Movement witnessed its strongest years between 1918 and 1928. Within this decade, educators placed more emphasis on the visual materials and methods that were being used in classroom instruction. The Visual Instruction Movement was created as a cure for the almost completely verbal way in which information was given to students. Educators began to

realize that with the developing technology of the day (radio and television), students could and should be exposed to new ways of processing information in order to better develop in a developing world. “The most commonly used visual materials included “excursions” (or “field trips” in today’s terminology), photographs and prints, exhibits (including dioramas and taxidermic displays), graphic arts, maps and globes, stereographs, and stereopticon slides” (Johnson 52). This movement soon gained support throughout the education community and has directly evolved into current forms and styles of education. The continuing focus on visual aids and representations in the classroom was seen at all age groups and within all subjects. Although these visual aids were not “new” technologies per se, the new focus on the importance of visual aids helped technology such as video and computers to gain a foothold in educational systems later. The VIM set the stage for the introduction and mass use of television within the classroom. Everything that falls under the “visual” title (television, photos, graphic arts, etc.) developed a new style of teaching that, in turn, altered the way in which students learn. At this point in history, educators began to recognize that, in order to teach successfully, technology would have to be implemented successfully into classroom practice. Television was the next technology to develop this new style of education more fully into the use of visual aids in classrooms.

Although the Visual Instruction Movement did not include television at the beginning, television soon found its way into the hearts of educators and the minds of students everywhere. Some contribute the beginning of educational television to a KUHT broadcast in 1953, the first of its kind in the country. Others give credit to the early morning educational broadcasts in homes. And still, there are earlier usages of

closed-circuit broadcasts in schools in Philadelphia and Los Angeles (Cuban 27). Regardless of where or when educational television started, the phenomenon created a great deal of excitement in the world of educational development. Because of the great concern with a fear of decreasing quality of education and overcrowded schools, the Ford Foundation granted great scholarships for the use of the new technology, especially to alleviate the immense shortages of adequate teachers in the classroom. The only reason that television in the classroom was able to last past the stage of a mere fad was the federal funding that the medium was allotted. In 1962, The Congress granted the U.S. Office of Education to put \$32 million into the further development and usage of television in the classroom. Over \$100 million had been used for this new technology by 1971 (Cuban 28).

This story highlights the crucial point that perceived need on the part of practitioners is an essential factor in the success or failure with technology in classrooms. While new technology in schools may be useful, if they are not found to be or become essential, the technology will find itself in the trough of disillusionment, forgotten for better, more essential technologies. Television, because of federal attention and budget allotments, has survived as a thriving technology of the classroom.

The use of television in American classrooms generally followed three main types of usage. The first, found primarily in the South Pacific islands of American Samoa, was the total substitution of classroom instruction for television-given instruction. In this type of television education, instruction was given completely through television broadcasts. Teachers would act as supervisors and would only assist with assignments outside of the in-class instruction. This was used as a cure for the crushing shortage of teachers in the

area. The second type of television instruction was the use of the television as a supplement to classroom instruction. In this scenario, teachers would plan lessons around a television broadcast. The teacher would still have a great deal of control in guiding the lessons and instructing the students in assignments after the broadcast. Some school districts across the country gave one third of the classroom instructional time to television broadcasts. The third and main type of television usage in the classroom was the use of television as an aid to teaching material. Using this method, teachers can control when and for how long television is used in the classroom. Television is never the focal point of the lesson, but rather used as simply another resource in the hands of the teacher. Instructors have the most control of the classroom instruction using this method. This usage of television was the most dominant of the three beginning in the 1950s. However, some may argue that the second pattern was the most popular. Different areas used varied patterns depending on the time and need of the classroom situation (Cuban 29). Television gave educators the flexibility they needed to make these decisions. Now, educators had a resource that was feasible, funded, and flexible enough to become a successful part of the classroom instruction.

Like many technologies in the past and present, television was practically forced upon teachers. Most of the decisions to use video in the classroom were made by school authorities and nonteachers. Actual in-the-classroom instructors rarely had a say in how this new method of instruction should be used, if at all. It was not until much later when television had been established as a tried and true classroom technology that teachers had more control over how much and what kind of television was used. Often, the only power that the teacher possessed was in the after-video discussion. Educational higher-

ups, like with any technology, had become enthralled with the idea of a new and bright technology that would solve all of their educational woes. Therefore, television was implemented in the classroom without much say from the actual instructors of students. Teachers were seldom consulted in the material of the televised lessons. If they were offered any involvement opportunities at all, it was only to slightly guide the “master teacher” of the television or to perform the grunt work of writing scripts for the programs from the instruction of the program instructors (Cuban 36).

There is another technology that changes the organization of schools altogether. True, television changed the way educators thought about education. Schools became a thing no longer closed to outside influences. With television, it was a simple matter to witness the culture and ideas of those around the world. But computers provided a drastic change in the organization and process of education as a whole. The usual cycle of hype and implementation cropped up in the late 1960s. Extraordinary changes were predicted with computers in schools. Then field tests were completed on the new phenomenon. Then teachers reported certain downfalls of the technology. With the computer, a new wish for another classroom revolution was formed.

However, this specific technological revolution was unusually slow to start. In the 1950s, much of the developmental work associated with computer-assisted instruction (CAI) was completed. The computer held great promise and several educational programs were created, but in the late 1970s, computers had still failed to cause the revolution for which many were waiting. In the early 1980s, microcomputers became available. These computers were smaller and cheaper and therefore could be more easily used by public schools. “By January 1983, computers were being used for instructional

purposes in more than 40% of all elementary schools and more than 75% of all secondary schools in the United States” (Reiser 59). With the progression and improvement of computers, the revolution had begun and there were no signs of a loss of momentum.

Coupled with the use and interest in computers are advances in Internet usage in the classroom. After 1995, use of the Internet used for instructional purposes increased dramatically. Around this time, generally more technology was found in the classroom. There were more distance-learning courses being offered by more facilities. But the greatest reason for this new interest in the Internet can be found in the new form of user-interaction that was created between the users (students or teachers) and the instructional content. Reiser describes three types of interactions in his article, “A History of Instructional Design and Technology: Part 1: A History of Instructional Media”. These three types of interactions between agents are 1) interactions between students and instructional content, 2) between students and teachers, and 3) among students themselves. Simply put, interest in the Internet arose so quickly because of the new way in which students could interact with what they were meant to learn. A new way of learning had been created and schools were now able to take hold of it and use it to their advantage.

The computer and Internet technological revolutions in schools are still in effect today. Whereas radio has already practically died out of schools, television has found its own unique niche within educational instruction. We are still waiting to see where the Internet will take us in educational development. The possibilities seem to increase as time goes on.

But are these technological advances what American education needs to succeed? What effects are these technologies having on students? Radio, television, computers, and Internet have had their impacts upon educational instruction, and there are many other technologies that effect education on a daily basis.

These technologies are having a lasting impact on students and teachers in the form of digital divides. These divides separate students from technology and the instruction they need. However, the idea and definition of the digital divide is shifting. In the next chapter, I will explore the idea of the digital divide and take a look at the new definitions associated with the phrase.

CHAPTER TWO

The Digital Divide: A Deteriorating Definition

The digital divide has affected educators since the dawn of technology use in the classroom. Teachers and critics alike have seized on the fancy phrase “digital divide” and blamed it for insufficient technology use in the classroom as well as for student disinterest. The phrase is thrown around in school cafeterias, lunchrooms, classrooms, and during board meetings, frequently whispered as would be the name of a contagious plague, and passed over just as quickly. The Digital Divide is a seemingly intractable problem. I will argue in this chapter, however, that educators do not have a sufficient understanding of what this phrase means to the various people who use it.

In its most popular definition, the Digital Divide was simply the divide between the “haves” and the “have-nots” (Van Dijk 315). A student who has a computer and an active network, extending this definition, is literally divided from a student who does not have ready access to either. Often in one school at one time, there is an obvious divide between those students who have and those who have not. Although the problem may be growing smaller because of smartphones and the falling costs of technology in general, the Digital Divide is still very alive in American school systems today.

The phrase, however, can no longer be referred to in the traditional sense. Too much has changed since educators began to use the phrase. Just as the availability of technology has moved on and advanced greatly, so has the definition of the Digital Divide. The evolving characteristics of technology, the ability of technology to change and mold to fit the needs and demands of consumers, and the increase in technology use in earlier grades have had profound effects on the nature of the Digital Divide. How is it

possible to have a phrase that does not change with technology? What language would better reflect the experiences of teachers in today's classrooms? For good reason, the term "Digital Divide" has gone on to define other types of technological divides in the classroom. Each type still has a distinct divide between two people groups concerning technology, and each type is still present in the typical classroom. The Digital Divide, however, is changing as consumers change what they desire and need.

New definitions for the Digital Divide were pulled from the research of several different critics, educators, researchers, and fellow technology enthusiasts. Each new definition has its place and is correct within its use and context. However, I would like to focus on only a few that I feel to be the most relevant in today's educational contest. In this chapter, I will define and discuss several different Digital Divides. This chapter simply seeks to name, explore, and discuss the ever-growing term "Digital Divide" and its effects upon education in the secondary classroom of American schools.

The *Oxford Dictionary* offers the most traditional definition of "digital divide": "the gulf between those who have ready access to computers and the Internet, and those who do not" ("digital divide"). Quite simply, the traditional definition of digital divide is the divide between the haves and the have-nots. Originally, research in the area was greatly focused upon the inequalities of access to computers and the Internet (Warchauer, Knobel, and Stone 562-588). This approach meant that for a long while, the problem that was focused upon the most was ease of access to computers and the Internet, whether that lack of technology was found at home, in the office, or in public places such as libraries. This gap was most easily seen, and most often referred to, high-socioeconomic communities and students versus low-socioeconomic communities and students. Schools

labeled low SES (socioeconomic) schools had a greater separation from computers and the Internet than did high SES schools. The trend seemed to fall into this expected mold, and the cause of the problem was said to influence many significant factors. Experts worried that a lack of access to computers would affect students' future job opportunities. With a certain lack of computer skills, surely the student would suffer when compared with their high SES student counterparts who could successfully and skillfully work computers and the Internet. Low SES students would also suffer in their immediate studies. With little to no supplemental material at their fingertips, these low SES students would not perform as well as their high SES student counterparts. At the simplest level, moreover, experts looked at the amount of information that low versus high SES students were able to access (Attewell and Battle 1-10).

However, as time wore on, these factors might have been created or influenced by different types of digital divides. Skillfulness of users, performativity of technology, and workability of technology were found to serve as contributing factors to the growing digital divide between those who regularly use computers (especially the Internet) and those who do not.

These ideas are found in a study by Mark Warschauer, Michele Knobel, and Leeann Stone entitled "Technology and Equity in Schooling: Deconstructing the Digital Divide" from *Educational Policy* (Warschauer, Knobel, and Stone 562-588). In this study, certain California high schools were observed to determine the rate of computer usage in high SES schools versus low SES schools. These researchers introduce the idea that digital divide (in these schools specifically, but applicable elsewhere) can refer to a series of factors besides the traditional "have versus have-not" argument.

The first area to focus on is the skillfulness of users. Technology might be readily available, up-to-date, and working, but are students and teachers skillful enough to work with the technology readily and use it to their advantage to promote student learning? In my experience, I have watched as students and teachers both struggle with technology because of their lack of technological skills. The digital divide of skillfulness is brought on by many factors. High-stakes testing, access to home computers, and English Language Learners are factors that contribute to the complexity of skill needed to productively work computers and the Internet.

The skillfulness of users may also be affected by the amount of computer access users have at home. The effect is twofold. First, students may have little to no computer and Internet access at home, leaving them without regular interaction with computer programs. Such users would then be unskilled in the usage of computers and the Internet. Secondly, students may have the regular computer access one needs in order to develop basic skills in computer usage. The students may then have a very basic understanding of computer programs and usages. A teacher would recognize the mastery of basic skills and deem that all-too-precious class time should be spent on other endeavors instead of computer practice. This problem is difficult to avoid unless the school curriculum specifically allows for time spent on teaching and learning computer skills. Time like this, however, will always be a problem as long as high-stakes testing remains in power in public schools.

High-stakes testing can negatively affect the skillfulness of computer users, especially students. For instance, teachers who are under the shadow of high-stakes testing may feel that the pressures of state testing do not allow for time to teach computer

skills. When standards for high-stakes testing do not include technology components, technology skills are often pushed aside to make room for those subjects that are considered to be more “essential”. The pressures of this sort of testing heavily influence the standard curriculum away from more technology-friendly endeavors. This trend leaves students underprepared for future jobs and further technological advances.

Another factor that may affect the skillfulness of users is language proficiency. This issue may be especially pronounced in low SES schools. ESL students, or English Second Language students, also find it more difficult to use computers and the Internet. For instance, without adequate time to practice or even learn the English alphabet, typing in a URL or using a search engine can become a difficult and frustrating task. Again, as is often the case with testing, teachers may think that time could be better spent in instruction in other areas.

The second type of digital divide to explore is the divide of technology performativity. The idea behind this phrase is that any “measureable performance becomes a justifiable end in itself” (Warchauer, Knobel, & Stone 574). In my own mind, a classroom suffering from a digital divide fueled by performativity would look like this:

At the beginning of the day, a teacher of a ninth-grade English class gets an email reminder. In the email, the curriculum instructor reminds them to not forget the monthly technology benchmark test. The teacher glances at the calendar, and panics when he or she sees that the test is only a few days away. And he or she hasn’t even taught the testable technology skills! In a rush, the teacher finds a class set of computers, passes them out to students, and begins to drill the confused learners in the necessary skills for the benchmark. They

practice word processing and Internet searching non-stop until the day of the test. All the students perform the tasks asked of them. However, the skills are soon forgotten and will not resurface again until the fright of next month's benchmark test.

A digital divide of performativity leads to confused students, rushed and meaningless instruction, and easily forgettable skills. There is no emphasis upon application of knowledge or connection of ideas. The focus of the technology lessons is only to teach the skills that are absolutely necessary for the academic survival of the students and teachers. A checklist of needed technology-based abilities is checked off without a second thought as to how to connect these instructions to the students' growth of technological knowledge. Therefore, the student is left with a woefully inadequate understanding of the uses of computers and the Internet. As a result, they cannot connect classroom lessons with outside applications.

In a study by Warchauer, Knobel, and Stone, a high SES school exhibited traits of the performativity digital divide. A teacher in one science class assigned a PowerPoint presentation. The final grade was, in part, based on the profuse and grotesque usage of different types of fonts, sounds, transitions, and a plethora of other presentation options (which in a professional setting, would have seemed ridiculous). The project was seen as a mere checkpoint of technology mastery rather than an opportunity for further learning and understanding of computer programs.

The digital divide of performativity is hurtful to students and to teachers. When technology skills are viewed as a passing checkpoint that students merely need to complete through with minimum ability, the student's understanding and knowledge of

the true and advantageous usage of a computer or the Internet is severely damaged or perhaps hindered drastically. However, even this type of digital divide may be easier to make right than the digital divide of workability.

The final type of digital divide that merits additional attention is that of workability. School districts, teachers, and students may have access to great technology (and may have the knowledge and desire to work that technology), but, if the technology does not work at normal standards, computers can turn into machines of frustration. This digital divide is often the result of unsatisfactory technical support on school campuses or the hasty purchase of less-than-perfect technology. In the case of this digital divide, teachers become wary of using technology in the classroom. When computers or the Internet do not work on a regular basis, teachers would be unwise to plan lessons around unreliable technology. Without assurance of their working, teachers will shy away from these technologies. As a result, students will miss out on learning technology skills that would benefit them in the future.

Digital divides of all sorts at times cause irreversible problems for students. When students miss out on the opportunity to experiment with and create their own knowledge about computers and the Internet, those instances cannot be recreated at a later time. This problem is especially hard-hitting in English departments. The English classroom is often where students learn how to research, write a resume, complete applications, and perform other workforce-related tasks. If the school district suffers from one or more of these digital divides, students will not receive the training they need and, as a result, will suffer as they try to compete in a challenging job market. Students absolutely need technology skills to succeed academically and flourish as successful

adults. Developing strategies to overcome these various “digital divides” is crucial if we hope to assist students as they compete in a complex world.

CHAPTER THREE

Software, Social Media, and Literacy

The current age has been dubbed “The Information Age”, “The Digital Age”, sometimes even “The Computer Age”. These phrases were coined with the desire to describe the interconnectedness of people in the 21st century. Information is ubiquitous. The task is so easy, in fact, that there has been a sudden excess of information found in the form of “Lolcats” (humorous pictures of cats captioned with a phrase that uses atrocious grammar) and seemingly endless YouTube clips about any topic imaginable. Perhaps such useless information has always existed, but never before has it been made so readily available to the masses. Perhaps another name for our current age would be “The Age of Trivial Information”.

Regardless of the name, there is no denying that there is an ever-growing amount of information made available to individuals through the use of technology. Computers and the Internet have especially escalated the access to information by people of all classes and races. The invention of personal computers connected to the web of the Internet made each person a consumer of information. At the same time, consumers became creators as well. And when a creator is able to generate information about any subject they know (and too often, those they know nothing about), a default subject of focus becomes themselves: their lives, their interests, their dislikes, and even what they ate for breakfast. Thus, the phenomenon of the Social Network Site is fashioned from the excess information The Information Age allows to exist.

Social network sites are defined by Danah Boyd and Nicole Ellison, both researchers of the impacts of social media, as “web-based services that allow individuals

to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system” (Boyd 211). To the modern-day high school student, however, social media sites are so much more. Websites such as Facebook and Twitter offer outlets by which teenagers can further their friendships with those who are physically around them and who may be too far away to communicate with otherwise. Creative sharing websites such as YouTube and Instagram give students the opportunity that would otherwise not be available: to create and publish videos and pictures to an eagerly awaiting audience. Students also connect socially when they share a single piece of creative matter with people from thousands of miles away. Social media has opened up social and creative prospects for younger generations that have never been presented before. Younger generations have taken up and run with these many new creative ideas.

Although it seems that social media websites cropped up over night, there is a history behind these new inventions. All of them spawn from a sense of need, from ingenuity, and from opportune moments within the history of computers and technology generally. In the late 1970’s, computer enthusiasts Ward Christensen and Randy Suess created the BBS or Bulletin Board System. This system made it possible to communicate meeting times, share announcements, and make public other announcements via computer. The movement of information sharing spread gradually at first, but it gained momentum with astounding speed. In 2002, the social media site MySpace was launched. The site was hugely popular, but soon lost popularity to Facebook, which became the leader in social media websites. Other sites such as Twitter and YouTube

were created and each offer a unique way of communicating that has been embraced and utilized greatly by a younger generation of tech-savvy users (Bennett).

The tech-savvy teens who use these services each day constitute a significant percentage of social network site users. Most American secondary school students have and operate regularly a social media niche. Whether it is a Facebook page or a YouTube channel or anything in between, most students are actively engaged with the ever-changing face of social media. They use their phones, laptops, and tablet computers on a daily basis. With such a large part of high school students interacting with social network sites, many teachers have begun to question the effects of such great exposure upon the learning of their students. Hundreds of studies have been performed and thousands of articles written, yet the education community, meaning teachers and school administrators, cannot seem to agree on whether social media is an asset that should be utilized in the classroom or a stumbling block that should be avoided. But, putting that issue aside for the moment, I wish to look at the effects of such technology upon the literacy of secondary education students. Such a great part of students' lives should have an effect upon the way they read, write, and interpret the written word. Their interaction with social media and similar technologies is very well capable of influencing their reading abilities. The matter of the virtue or vice shall be set-aside for now.

Maria Pacino and James Nofle from Azusa Pacific University argues the following about literacy:

Beyond reading and writing skills, representative types of literacy include print and non-print materials, academic ability in numeracy, quantitative and qualitative research, information access and

management, science, economics, computer and digital technology, social media interaction, critical thinking, cultural awareness, cross cultural-communication, including bilingual and/or multilingual expertise, analysis of issues from multiple perspectives, understanding of families and communities in the worlds, character development, conflict resolution, and moral/ethical decision making for participatory democracy. (Pacino 477)

According to Pacino and Nofle, literacy has several different meanings each with their own special connotation and each stemming from a different subject of study. In order to further this topic of technology and literacy, we must pin point a definition for the otherwise ever changing word. Pacino and Nofle also points out that “literacy” should not be limited to the ability of a student to read and write. The term should also describe the ability to think critically about the text. This is a point with which Alesha Trudell, another Education specialist, completely agrees. Trudell believes that the definition of literacy should encompass the ability to read and write with a critical mind (Trudell, 37). A student should be able to read and write and understand the literature. In accordance with these scholars, I shall adopt the same definition of “literacy”. However, even with a definition finally found, literacy is still changing. Trudell, Nofle, and Pacino have realized that, because we live in a digital age, literacy and its meaning change as quickly as technology. With each new piece of equipment, consumers are required to develop a new or different way of reading and writing. We must keep in mind that technology may be changing the way students understand literature, but literacy itself is changing just as quickly.

With such changes comes the difficult job that teachers face of keeping up with technology. A successful teacher will try his or her best to engage students by any means possible in order to offer the best education in the most understandable format. Sometimes social media can be just what teachers need to give reluctant students the extra push they need to write and read. For seven years, a team of educators and researchers looked into the learning and literacy practices of American schools in the K-12 grade groups with Internet-connected laptops. This team, headed by Mark Warschauer, found that the possession and use of these laptops in the classroom greatly improved and increased student written work. Students who have access to these laptops in the classroom are able to find more and better research materials, are able to receive feedback on their writing in multiple formats and from multiple sources, and are able to read and discuss others' writings. All of this leads to higher quality writing from students. The investigators also witnessed the use of social media as a tool to increasing and publishing written work. Students would publish their work on a blog or wiki. Other students could then read and discuss the text via online chat tools and comments. The pressure of actually publishing work and knowing that others would read the text along with peer editing increased the quality of student written work. In this case, social media proved to be a great internal and external motivator for students of all ages concerning their written work (Warschauer).

In a similar experiment, the New York Public Library tried to introduce students to social media by teaching them how best to use the resource as a learning and creative platform. From the 1920s, the NYPL has been one of the forerunners in responding to the academic needs of adolescents. After school programs and a safe learning

environment have been a large part of the services that the library offers. This study in 2010 was no different. The library implemented an after school program that would put teenagers under the supervision of educators who would teach the students how to best use social media as a tool. Students were encouraged to take a stand on social issues and then publish their thoughts in the form creative works via social media. The program was slow to start up because of a change in the program structure caused by a tighter budget. But after combining the program with a preexisting after school program, students were more willing to commit and participate at a deeper level. The students were given the instruction and motivation to learn about global issues and then create and publish a personal statement in any form through social media. Students were very engaged in the work and the quality of the work proved their interest. These students were given the opportunity and means to become well-informed individuals and to give their opinions in a way that was meaningful and public (Shoemaker).

As seen through these studies, motivation to write, become more informed, and publish works and opinions are possible byproducts when social media is utilized in a classroom setting. Both of these experiments demonstrated that in order for social media to become a useful tool and motivator in the classroom the proper materials (i.e. computers with internet connection) and proper instruction in technology are absolutely vital. Certain school districts may be so extravagant that they buy an individual, internet-capable computer (or tablet) for each student. However, these resources will be wasted and completely unusable for anything beyond superficial applications without the instruction and motivation that comes from educators. At the same time, educators must be cautious when using computers in the classroom. Several skills that used to be the

basis for student writing and literacy are becoming obsolete in the digital age. Educators must ask themselves what they are willing to give up in the endeavor to teach with technology. This trajectory, however, may be an inevitable part of developments within K-12 schooling. Those skills that are lost may be the price educators and students pay in order to maintain pace with ever-evolving technology.

What we gain versus what we lose when using technology in the classroom to improve literacy is still to be determined. Several speculations and trends, however, have already cropped up in the limited experience educators have with this revolution. In the study headed by Mark Warschauer, explained above, several students mentioned the ease of use when writing with computers. Spelling, grammar, and formatting tools were easily available and easily useable on the computers. Also, simply writing the text was said to be easier and less stressful because they did not have to worry about becoming tired from writing or the quality of their handwriting (Warschauer 222). These skills, taken over so completely by the computer, may slowly dissolve out of the minds of students and, although it is unthinkable, teachers.

As mentioned before, motivation is a great effect of the use of social media in the classroom. However, when those that used to be simple and vital skills are taken out of the hands of students, is the price worth the outcome? Software that is built in to computers themselves allows students the ability to rest easy concerning things such as grammar and spelling. These “minor” annoyances for the students (and grading teachers) are taken care of and put out of mind. But are computers robbing students of the opportunity and the ability to think for themselves?

In a study performed by Lauren Figueredo and Connie Varnhagen in 2006, several college students of various ages and majors were tested in an attempt to discover the effects of computer corrections upon editing skills. Researchers were encouraged in their studies by the assertion that writers tended to separate the revision process into two main parts: revision for content (complete thoughts, congruity throughout the writing, etc.) and surface level revision (spelling and grammar). Writers will usually keep these two revision types separately, keeping the targeted revision points clearly distinct. The researchers wanted to know if the computer software found in many writing programs, spellchecker, affected the revision process. The participants in the study were divided into three major groups: Freshmen, English majors, and Graduate students. Test subjects were then given two short essays rigged with spelling and grammatical mistakes. One essay they would revise using a dictionary. With the other, they used the help of spellchecker. Students were told to revise the writings in any way they thought would create a better quality piece of writing, including revisions in content. The study focused on two major questions. First, “Do spelling and grammar checkers affect the ways in which students revise for content as well as surface features?” And secondly, “Do students manage revisions differently when they have access to checkers as opposed to a dictionary?” (Figueredo and Varnhagen 722). Results found that spellchecker did not inhibit students’ revision for content. It did, however, lead to more corrections in spelling and grammar. The amount of content revisions was the same regardless of technological assistance. Researchers also deduced that the main source of difficulty in revising spelling and grammar without spellchecker was that of detecting the mistakes in the writing. Thus, the researchers thought of the software as useful for writers. The

presence of the spellchecker is helpful and does not interfere with content revisions (Figueredo and Varnhagen 721-732).

When speaking of spelling and grammar software in particular, the technology is unobtrusive to the student-writers of today. Young adults have grown up in a self-correcting world of squiggly red and green lines that constantly point them in the direction of correct writing. With the help of this technology, students may focus upon the ever-important content of their writing. However, students may be sacrificing the knowledge of spelling and grammar to technological advances. Spelling is a building block of greater vocabulary and diction. When students are not required to have a full command over spelling, vocabulary and their overall writing suffers. Also, software such as spell checkers cannot help with things like proper nouns, homonyms, and homophones. In certain cases, the spell or grammar checker could be incorrect. Without a proper and strong foundation in these basic writing skills, however, students must only have faith in the technology and go along with its suggestion.

A dearth of proper writing skills can lead to other unfortunate problems as well. If popular media and news is to be believed, a horrible technological plague haunts young people across the world. This unwholesome practice is single-handedly deadening students to the knowledge of proper spelling, grammar, and Standard English. And this disease has many names: Text messaging, txtng, or textese, but most commonly, texting. Texting is changing language. Words are condensed, compounded, and highly processed all within the action of a single message. Most young adults use this tool every day to communicate with friends, family, and, shockingly, their superiors. This form of communication has become mainstream and understandable to most young adults. With

a technology that has completely changed, and some would say mutilated, Standard English, the obvious question occurs: How does texting effect literacy?

The hyped excitement in current news, however, does not do the subject justice. After a case of a misguided student, Australian news networks were astonished. The student, left unidentified, turned in a short essay written entirely in texting format, or “textese”. The teacher was outraged that language could ever drop to such a low point. And when Victoria Carrington was asked for an opinion, her curiosity was sparked. Carrington, through research, finds that:

There is almost the unspoken comment here [in research] that recreational use of txtng may ultimately lead to addiction and a lowering of an individual’s ability to shift between text types according to social context—that increasing mastery and use of txt must ipso facto lead to withering skills around other text forms embraced within the parameters of Standard English. (Carrington 167)

Because so many critics see text messaging as a literacy crisis, those who text (namely, young adults) are also being caught up in the bad publicity. But Carrington goes on to say that in today’s culture, it is nigh impossible for young adults to get by without having a firm understanding upon textese. Students’ interests greatly revolve around text messaging and textese (SNS, communication with friends, etc.) that students must have a firm grasp on the ability to create and understand text messages. It is then more important for teachers to instruct

students on the proper place and time in which to use informal writing instead of trying to root it out for good.

In a study by M. A. Drouin, the author found that there are different effects of text messages (the actual message) and textese (the language of abbreviations) on students' literacy and reading fluency. To be clear, textese is not always used in text messages. One may choose to use Standard English instead of the quicker abbreviations and emoticons of textese. Drouin defines textese as:

Textese is an abbreviated vocabulary that includes initialisms (e.g. *lol* for laughing out loud), letter/number homophones (e.g. *gr8* for great), contractions or shortenings (e.g. *cuz* for because), emoticons (symbols representing emotions (e.g. :(for sad), and the deletion of unnecessary words, vowels, punctuation, and capitalization. (Drouin 67)

The message and the language are not necessarily connected. Text messages and texting languages are not one in the same. A text message may be formal and used in formal situations, whereas textese is never appropriate for formal or professional situations. The study found that those who frequently used text messages had a higher reading fluency than those who did not. It was concluded that text messaging could have a positive effect upon literacy in that it created better readers and spellers. However, those who frequently used textese were found to have a lower literacy. These students had lower scores on reading accuracy than their counterparts. Therefore, it can be concluded that in some

cases, the overuse of textese can lead to deterioration in literacy. Drouin states that there is a clear need for more research in this area.

Going back to Carrington's point, perhaps the problem is not a lack of education in reading and writing, but a lack of education of the appropriate situations in which to use texting. Students are facing a world in which language changes very quickly. New words are created at a break-neck speed and grammar changes within the context of textese. Perhaps teachers should discontinue the practice of shunning these new technological creations and begin instructing students in the correct way, place, and time in which to use these and other emergent technologies.

CHAPTER FOUR

Concluding Thoughts

My research into technology and its uses in teaching high school English has shown that the influence of technology on education is something that is not only highly complex, but also deeply dependent upon individual circumstances within individual schools. The brief history of the use of technology in the classroom reveals that, although the rapid acceleration of the development of technology is relatively young, what is taught and how it is taught has been changed perhaps permanently because of the implementation of technology into American public schools. The future of education in the U.S. cannot be discussed without considering technology. With talk of iPads, online courses, and technology-enhanced instructional strategies, education and technology have become almost constantly connected.

In chapter one, I presented a brief history of technological advances in education. The technologies that began the technological revolution, such as radio and television, spawned to a new type of teacher. Teachers who work with technology are constantly finding new ways to incorporate the tools into their lessons. The trend of technology-using teachers will likely continue indefinitely, especially in a society in which new technologies are continuously invented and improved. Technology has effectively seeped into American classrooms. They impact the lives of teachers and students each and every day.

The purpose of this thesis, however, was not to study all aspects of technology use in the classroom, but rather to look specifically at the effects of technology within high school literature classrooms. My hope was that I would somehow come to a firm

conclusion regarding the absolute “evil” or “goodness” of the use of technology in high school literature classrooms. Despite considerable writing and research, however, I still cannot see the issue clearly enough to make a positive or negative determination. Perhaps the best conclusion now (and for many years to come) is that technology has both benefits and drawbacks. What can be said with a strong degree of certainty, however, is that technology has permanently changed education, whether for good or for ill.

Although these technologies have changed the way educators and students define and interact with education, many of these technologies are still susceptible to the trough of disillusionment, which is a key concept that I uncovered during my research. In the face of both positive and negative aspects of technology use, perhaps the best approach to take is for instructors to embrace the change that technology brings while at the same time trying to use whatever comes along to impact student learning as positively as possible. The “trough of disillusionment” model hypothesizes that each new technology is in danger of declining in popularity. Moreover, if that new technology does not recover, it will stay in the trough of disillusionment forever. This stagnant future may be the fate of fashionable, spur-of-the-moment technologies such as the Smart-board and other appliances. Other technologies, however (for example computers and the Internet), seem to have passed through the tough times and earned a permanent place within classrooms.

In order to pass through the trough of disillusionment, a classroom technology must possess three major traits. The technology must be workable, it must be affordable,

and it must be versatile. In my observations, I have found that every technology that has succeeded in American classrooms has held these three traits.

As far as workability is concerned, when the technology skills of educators nationwide are mixed, a technology must be easy to learn and to use. The time needed for teachers to learn the technology must be reasonable, flexible, and manageable. If a new technology requires many hours to learn basic usage skills, teachers who are not devoted to the use of new technology will likely forgo the innovation for the tried-and-true ways that they have already mastered. After teachers have learned how to use the technology, the technology must be relied upon to work. For instance, if there are bugs or glitches in a piece of software, teachers will refuse to use it. When the attention of students is so easily influenced, why chance a disaster when one knows the old methods will work?

Second, a technology must be affordable. Especially in light of the struggling budget line of school districts across the country, a technology has to have a reasonable price tag. In this time, when so much stress is placed upon the financial bottom-line, it is imperative to spend money wisely. Therefore, school districts will decide against expensive, new technologies and the extra cost. Expensive technologies will never gain a strong foothold in American school districts until they are mass-produced or the price lowers some other way.

Finally, to be a well-used and long-lasting classroom technology, a technology must be versatile. In a classroom with limited space and limited time, the innovation that survives is the one with the most versatile selection of application. Take the ingrained technology of the computer for example. Word-processing and spelling checks are

standards in computer software. Also, the computer paired with an Internet connection may be used for researching purposes by both teachers and students. Computers also work as great tools of convenience that save teachers time by being multi-tasking machines that streamline attendance taking and grade recording. And, as a final example, the resources available to teachers via computers with an Internet connection are endless. Lessons never need be created from scratch because of the sheer volume of materials that can be found online. Like in the case of the computer, versatility is a necessity for a long-lasting technology in education.

However, even before educators or administrators begin to look into workability, cost, and versatility, any person wanting to adopt a new technology into his or her classroom must approach the innovation with a strong sense of caution. An over enthusiasm and over eagerness to adopt the next “big invention” that promises to revolutionize education can be detrimental to the successful life of a technology and the success of the education of students [\(Stoll\)](#). If there is one primary point to be gained from this study, it is this: Exercise caution when introducing a new technology into the classroom. When administrators excitedly force the adoption of a new piece of hardware or software into the classroom, educators should take a step back and observe the situation from afar. Strive to see the new technology outside of the hype created around it by media or marketing professionals. Never embrace a new technology fully without first questioning its ability and true potential.

When reflecting on the primary goal of this study (to explore the effects of technology upon the teaching of literature and to take into consideration the effects of this technology in American classrooms), I am brought to one conclusion. Despite all of the

hype, regardless of promises of grandeur, and in spite of all great experiences using technology in classrooms, technology will forever remain only a tool for teachers and students to use as they pursue of the goal of learning. Technology cannot take the power of education from either educators or the educated. Rather, it must remain a tool to make the deliverance of information easier, quicker, and more interesting. Because teachers have recognized this truth, whether consciously or subconsciously, technology has not taken the place of teachers. My research, reading, and experience have led me to believe that technology will forever remain a useful tool in the hands of educators and students and cannot be substituted for a quality education, regardless of the advances that may come.

Therefore, before exercising caution, before questioning the workability, and before taking into consideration the cost, however, all educators should ask themselves one question. Will this new technology benefit students? This is the bottom-line question for all teachers and administrators. If the answer to this question is not positive, the adoption should come to a halting stop. In the midst of every exciting and innovative time that comes along for the development of technology, we as educators should not forget the most important part of our calling. Student learning and anything that benefits that noble end should always come first.

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