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25 April 2018

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Please submit in duplicate.

Student and Instructor Attitudes Toward 21st Century Writing

Technologies in the Rural Secondary English Classroom

(TITLE)

BY

Casey Crowhurst

THESIS

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
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IN THE GRADUATE SCHOOL, EASTERN ILLINOIS UNIVERSITY
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Abstract

This thesis focuses on how students and teachers feel about the current use of technologies like Chromebooks and laptops in the rural secondary English classroom. Chapter one describes my personal journey as a student and educator using various technologies in the classroom, and how I came upon the idea for this study while observing one of the first high schools to implement full 1:1 Chromebook technology in the United States. Then, I discuss my review of the current literature on the subject, and find that there is a lack of knowledge about the emergence of these types of technologies, and the impact they may have on the educational setting previously noted. In an attempt to better understand these attitudes held by students and teachers, I conducted my research by observing two English 9 classes, during two separate lessons, that normally use Chromebooks. To find out if the attitudes about technology were directly related to the lessons, I had one class use the Chromebooks for one of the lessons, and the other class refrained from using the computers for both lessons. Next, I created a questionnaire that asked about the use of technology in the classroom and how it related to their perceived opinion of the lessons, and analyzed the responses. Also, I created a questionnaire to ask the teacher about her opinion of the Chromebooks and how they may have affected the lessons. As a final attempt to gather as much information as I could about these student attitudes, I administered two focus groups, one from each class, comprised of eight total students. Chapter three goes into detail analyzing the responses from the students and teacher. What I found was that I did not sufficiently answer my original thesis questions with the student questionnaire, but realized that the attitudes held by students regarding the Chromebooks came out during the focus group discussions instead. During these discussions students talked about how they preferred paper and pen to the Chromebooks, handwriting as opposed to typing on the computers, and the

multitude of technical issues that come with using the laptops. This directly opposed the teacher's attitude in that she believed students preferred using the Chromebooks, and that they were much more efficient than traditional methods of writing. My conclusion based on these findings is that the teachers and administrators must give the students using technology in a rural high school setting a platform to discuss their honest opinions. This platform could be a technology committee or subset of an existing committee like student council that allows for open discussion of the use of technology in the school.

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Student and Instructor Attitudes Toward 21st Century Writing Technologies in the Rural
Secondary English Classroom

Chapter 1: Introduction and Literature Review

As a child during the technological wave of the 90s, and eventually a teacher in the 21st century, I've always been naturally attuned and attracted to the uses of technologies in an educational setting. When I first began teaching in 2011, my access to technology centered around a traditional computer lab with about 25 desktop Windows XP machines. Staff were asked to sign up for the lab whenever they wanted or needed to use the computers. It fascinated me that the use of technology in the classroom had not really changed since I was in grade school at the turn of the millennium searching the World Wide Web on our translucent blue iMacs. I was disappointed with the lack of technological advancement in the classroom, but knew that tech companies like Google and Apple would eventually compete to innovate and get their devices in the hands of students in the 21st century high school.

When I began booking the computer lab for extended periods of time, including two-week blocks when I knew that students would need to use Microsoft Word for crafting their essays, I was met with some pushback. *What about the other English teachers that require their students to complete essays on Microsoft Word? What about the history classes that need to use the internet to conduct research?* These questions were valid, and eventually led to the natural progression of having the school district purchase laptops and laptop carts for departments that could be shared throughout the year. English teachers seemed to have the upper hand in these instances because we could not fathom the idea of handwriting an essay in the 21st century--such a notion seemed so preposterous after computers had taken a stronghold in education.

These laptop carts contained “netbooks,” miniature Windows laptops that, in theory, were the answer to questions about how school districts would provide efficient technology to students and teachers that could be accessed without interruption to the learning process. The major problem with these laptops was that they became frustratingly slow within a matter of months. Each morning the netbooks would download a new update sent out by the district, and they would be rendered unusable for the first three hours of school, making them obsolete, and leading the administration to think of the next solution to these 21st-century technology woes. Enter Apple Education.

In my third year of teaching, school officials signed an agreement with Apple, the technology company that I had been introduced to in my first grade computer lab. I enthusiastically signed up for the “Apple Core Team,” a group of teachers that would be trained by Apple licensed educators from all around the country. The school district flew in Apple educators to present at our “Apple Core Team” meetings, and they showed us how to utilize the flagship MacBook in an educational setting. These were informative and incredibly interesting sessions that changed the way I thought about using technology in the classroom. I thought, “these MacBooks are going to revolutionize the way in which we conduct our classrooms in the 21st century.” The school district decided to give every student and teacher a MacBook to take home and use on their own, but I switched to a different school district before experiencing full implementation of the MacBooks. From what I understood, Apple agreed to work with the school district because they had consistently struggled with test scores, and represented a majority of low-income students. Apple products are very expensive, and it is not feasible for other smaller and rural districts to afford MacBooks and the maintenance of the expensive machines. This is where Google capitalized on the future of educational technology.

At my new job, the teachers were using “Chromebook carts.” I had experience using Google Classroom, Google Docs, Google Drive, Google Sheets, and other Google Apps at my first job, so I was familiar with the use of these programs, but not the actual Chromebooks. Essentially, a Chromebook is a laptop that sells for about one-fifth of the cost of a MacBook Air, and only requires a Google profile, provided by the school district, to sign in and access all of their information. Chromebooks are almost 100% based in the cloud, which means the student’s information and school work is all saved on a Google server that can be accessed anywhere a laptop has a connection to the internet. In short, it is the perfect solution to the traditional computer lab.

My first year using Chromebooks I had to share a cart with a few other teachers in my hallway, which made it difficult to consistently use them in my instruction, but I knew these laptops were the future of education. I did not have to wait for them to load, the charge held for more than one day, and students seemed naturally attracted to the idea of learning on them. After my first year, I asked our principal for my own Chromebook cart, and the superintendent approved the purchase. It was a major shift for me as a secondary educator. My natural ability to utilize technology was unleashed, and I started creating every single lesson with the idea that students would complete everything on the Chromebooks. The administrators were impressed, and eventually approved purchases for flexible seating so that students were not forced to work on their laptops in desks, rather, they could sprawl around the classroom and work at their own pace and comfort level. This being such a new way of conducting secondary education, I would constantly create questionnaires for students that helped me understand how they felt about these new changes, and I almost always received positive feedback. But, after using this model for over two years, I began to notice that students were not as excited as the first year I implemented

the full Chromebook experience. Due to this shift, I asked my principal if my fellow Chromebook teachers and I could attend a free tour of one of the first official one-to-one Chromebook schools in the United States, which happened to be in our state: East Leyden High School. East Leyden is an urban school in Franklin Park, Illinois, near O'Hare airport, with a majority of low-income students.

According to the Leyden East High School website:

Beginning with the 2012–2013 school year, Leyden High School District 212 transitioned to a fully 1:1 teaching and learning environment. Almost every student is issued a district-owned Chromebook to use while they are enrolled in the district. Students are responsible for the care and maintenance of their devices and may get service and support through the Tech Support Internship classroom in each building (Leyden High School).

The first Chromebook ever shipped to a consumer was in 2011, and East Leyden had put them in the hands of their students in 2012--the year in which I was still booking computer labs for my English classes. What I learned during the site visit to East Leyden in 2017 propelled my interest in the use of laptops in classrooms like never before and provided the initial idea for this thesis. I noticed, while observing over ten different classrooms, that there was something missing: we saw Chromebooks out on student desks in fewer than half of the rooms visited. When we asked the educators and our tour guide about why we rarely saw the Chromebooks, they told us that the students and teachers had grown weary of the overuse of these machines over the past few years. Instead, students kept the laptops in their backpacks and completed assignments on them only when it was necessary. Meanwhile, I had been using the Chromebooks for nearly every assignment in my classes because I thought that the students were engaged with the use of technology no matter the circumstances.

After the site visit, it became apparent that I needed to research the wants and needs of students in rural secondary English classes to make sure I was avoiding the technological overkill that seemed to be present at the pilot Chromebook school. My goal in writing this thesis is to find out if students in rural settings, like the one I'm currently working, still enjoy using the Chromebook and laptop technology, or if there is a shift happening similar to the one at East Leyden. Due to the drastic differences in demographics between the school districts, I specifically wondered if the rural versus urban setting would affect this shift.

Educational Technology Research

One of the major questions regarding the use of laptops, or any technology in the classroom, is how rapidly the newest technology and practices can emerge. Deeper questions include how these tools impact students and teachers in the secondary English classroom in the past ten years. The emergence of educational technology, especially in English classrooms, has led to concern and interest regarding teachers' and students' opinions of the devices and their use. There remains a need for updated research studies that specifically target students that have used the technology for multiple years. Questions remain about whether the 21st century technologies grow tiresome or less engaging to students who have used them over the course of multiple school years. Rural districts that have successfully utilized technology, like Chromebooks and Google Apps, need to be studied to provide a better understanding of how the technology is regarded among students and teachers after consistent use.

One of the major tools that has emerged and been a focus of many rural districts in Central Illinois in terms of education technology is Google Apps for Education. These apps are available on the classroom laptops (Chromebooks) and include Gmail, Drive, Docs, Sheets and Slides. Google Apps for Education tailors these familiar Google products specifically for K-12

students and educators to help encourage collaboration and innovation. For example, students in high school English classrooms utilize the Docs tool to complete essays and other writing assignments, which can be shared instantly with peers and viewed in real time. Educators can also view the essays in real time, which provides innovative ways to leave feedback. Currently, there is an overwhelming push to use these Google Apps for Education in one-to-one classrooms. In fact, due to the push by principals, superintendents, and district technology coordinators to use Google applications and Google Classroom, as many as 30 million students in America are now interacting with the tools (Singer). In an initial study of the Google Apps platform in 2009, Roger Nevin found that the apps “significantly improved the way students and teachers worked,” but, as the implementation of Google as the forefront in online learning has emerged, researchers have warned about the inherent problems with forcing students and teachers to use these new tools (Hastings). Robin Hastings completed an extensive study of Google Apps use in her school district in 2008 and found that the apps were working, but the district required significant professional development and preparation to get teachers onboard using the technologies. Discussion of professional development and transition stages for implementing these technologies exists, but there is little research on classrooms that have already used Google Apps for multiple years. In addition, in the past few years, research regarding how these applications are performing in secondary English classrooms within school rural districts is also sparse. Although much of Hastings’ study still pertains to the 21st century classroom, what she could not find was how teachers and students felt after multiple years using the tools and technology. 2008 was ten years ago, and the field of research for Google Apps and Chromebooks in the 2018 classroom still leaves many questions unanswered regarding how the students react to using the same technology over multiple school years and in various disciplines.

Without that specific research, it is difficult to tell how students and teachers will react to prolonged use of these tools, but the current research of these technologies shows an overwhelmingly positive attitude toward the initial implementation.

Positive Student and Teacher Experiences with Educational Technology

Current research studying the use of technology, and specifically laptops, does show that both students and teachers have had mostly positive experiences in the classroom (Grimes and Warschauer 309, 324). Grimes and Warschauer went into depth studying the effects of laptops on writing. They conducted one of the larger studies, which included over 1,000 “semi-urban” students in California. They covered two school years of laptop use in the district between the years of 2004 to 2006. Although the study explained that it was “difficult to assess long-term impact from a program’s first or second year”, Grimes and Warschauer did find that writing was deeply impacted by the new laptops. For example, they found that “98% of students indicated that they used laptops to write papers at school,” and “Laptops were used in all stages of the writing process, including gathering background information on the Internet, planning writing using graphic organizers, writing first drafts, and revising” (Warschauer and Grimes 309, 314). From this information, we can determine that the secondary English classroom, specifically those that teach writing objectives thoroughly, are definitely impacted by these technological changes. In relation to the writing teachers in this study: “Teachers reported that, due to easier readability, they could much more quickly read, assess, and reply to a paper written on a computer than one written by hand, and thus provide feedback on more writing than they ordinarily could do” (Warschauer and Grimes 314–315). Also, the study discussed teacher perception of students: “Many teachers reported that their students wrote more with laptops, explaining that students

enjoyed writing on computer or found it easier than to write by hand” (Warschauer and Grimes 315).

Another study by Deborah L. Lowther, Steven M. Ross, and Gary R. Morrison titled, “When Each One Has One: The Influences on Teaching Strategies and Student Achievement of Using Laptops in the Classroom,” also indicated that students and teachers both preferred working on laptops, and that the use of the technology had resulted in higher achievement regarding classwork (39-40). One of the benefits outlined in this study was the laptop classrooms creating more of a student-centered atmosphere than those without the technology (Lowther, Ross, Morrison 25). This could prove to be a major factor in teacher and administrator decisions regarding the use of laptops as student-centered instruction has become increasingly popular with the adaptation of the Danielson model of teacher evaluation¹. Other results from this study concluded, “Students were very positive about having a laptop, and indicated that the best aspects were easy access to online resources, ease of creating and editing work, and ability to make assignments look much better” (39). Lowther, Ross, and Morrison have presented information and research that help teachers and administrators realize the benefits of using technology, but not all teachers and students feel similarly about the use of technology in the classroom.

¹ The Danielson model is a framework for evaluating teachers based on four distinct domains: Planning and Preparation, Classroom Environment, Instruction, and Professional Responsibilities. Teachers are then scored on a scale: Unsatisfactory, Basic, Proficient, and Distinguished. To qualify for “Distinguished”, students are running the classroom and lessons while the instructor becomes a moderator of sorts. Technology and Chromebooks lend themselves to this type of instruction.

Negative Student and Teacher Experiences with Educational Technology

Some experiences with laptops in the school setting have been negative, especially when technical difficulties become prevalent. Lowther, Ross, and Morrison discovered in their study that teachers became frustrated when “dealing with technical difficulties” (39). Ewa McGrail found that English teachers began to feel ambivalence towards the implementation when faced with “dilemmas” using the technology. These dilemmas include issues getting the technology to perform adequately or correctly or loss of connection to the internet entirely. Another major issue for teachers, as shown in the same study, is when administrators failed to include the teachers when discussing decisions about the implementation of new technologies. McGrail writes, “Thus, as Pam (a teacher) commented, the laptop technology initiative was ‘pretty top down They proposed the program, and then it was approved by the board, and then we were told that people needed to get on board.’ As Claire observed, the question, ‘What do you think of this-should we do this?’ was never asked” (1063). These attitudes by administrators could negatively affect the use of new technology, and seems to be one of the major issues reported in academic literature focusing on the subject of classroom technology. Another pressure that McGrail discussed was the conflict that teacher felt regarding the expectations for integrating the technology in regards to the state mandates and standardized testing. This conflicting position is clearly a topic that requires further research as districts move past this particular stage in the educational technology implementation. Research studying the perceptions and attitudes of teachers about the use of technology in the classroom over an extended period of time, after they have dealt with the top-down mandates does not clearly present itself. This type of study could help teachers, administrators, and students all better collaborate to discuss what is next in the field of educational technology.

There is also not sufficient research to suggest that the students actually met their intended goals more effectively or efficiently by just using a laptop versus an offline medium such as paper and pen. These concerns may impede the use of new technologies and strategies in the secondary English classroom, but there are still questions that need to be answered concerning the attitudes of teachers and students in rural high school settings, and how they regard the implementation of these new technologies. Some of these questions include, How does the teacher feel about the current use of technology, like Chromebooks, in the rural high school setting?, and What are student attitudes regarding Chromebooks as they become increasingly utilized by instructors? This thesis aims to answer these two questions in detail using the current opinions of teachers and students in a rural Midwestern high school.

Another aspect that requires further research is explaining the technology in classrooms after the novelty and newness has worn off. There is minimal research to support or oppose this idea over an extended period of time. Both the students and teachers should be consulted in the research of these types of extended experiences to help educators and administrators make decisions about the future of the educational technologies in their classrooms.

Conclusion

The distinctions between using online technologies versus traditional instructional methods when it comes to rural Midwestern secondary English classrooms have not been sufficiently researched. In order to make a clear statement about the way teachers and students perceive these writing technologies, especially after the technology has been implemented for multiple years, more research is required. My decision for studying rural classrooms is based in the fact that they are minimally represented in the current field of educational technology research, particularly at the high school level. Currently, the research surrounding technology in

rural schools focuses on accessibility and access to new educational technologies as opposed to these settings where technology has been consistently utilized (Sundeen). At the school in my study, there is only one designated technology coordinator for the entire K-12 district, which may be representative of other rural school districts. In Grimes and Warschauer's article, they mention the use of technology at "semi-urban" schools, but fail to reference rural districts (324). My thesis aims to help students and teachers better understand the impact of educational technology in their rural secondary English writing classrooms while also shedding light on the student and educator perceptions of these technologies.

Chapter 2: Methods

This study was based on an idea I originally conceived while attending a site visit to a 1:1 school, and the idea that some students may not want to be on laptops in the classroom every day. Essentially, I wanted to know if students had a strong opinion about the use of Chromebooks in their English classes. My main focus was attempting to answer the following questions:

- Do students prefer using either laptops or traditional paper and pencil in a common English lesson?
- Do laptops and technology affect students' perception of a typical English lesson?
- How does the teacher feel about the current use of technology, like Chromebooks, in the rural high school setting?
- What are student attitudes regarding Chromebooks as they become increasingly utilized by instructors?

The School

For my study, I used two ninth-grade English classes at high school in a rural area of Central Illinois. According to the 2016-2017 Illinois Report Card, the enrollment included 495 total students. Among these students, 96.8% were White, with Hispanic and Black students only making up about 1% each. "Low Income" students made up 17.2% of the total student body. 0.6% of the school was considered "English Learners" (Illinois Report Card). Chronically truant students only made up 0.8% of the total student body. According to the same website, the class size averaged 17 students. As far as academic progress was concerned, the freshmen were 95% on track to graduate from high school, with a 98% graduation rate for seniors. When considering the SAT, 65% of students at this high school scored "Meets" or "Exceeds" for English Language

Arts compared to the 40% state of Illinois average. Eighty-two percent of the students at this high school enrolled in post-secondary studies as opposed to the state average of seventy percent. According to the 5Essentials Survey, a survey conducted by the University of Chicago and given to all students, teachers, and administrators in Illinois, this high school scored higher than average in the following categories: Effective Leaders, Collaborative Teachers, Supportive Environment, and Involved Families. These scores from the 5Essentials survey were evident when I observed the students and teachers in the building because there were minimal behavioral disturbances and almost 100% participation in classroom activities and lessons.

Students in the classes I used for the study totaled 33 ninth grade students--18 in one class and 15 in another. 32 of the students self-identify as Caucasian, and one student as African-American. All of the students were 14 or 15 years old. None of the students have an IEP, and both classes are considered regular English 9 classes. This school does not have an honors track. The second hour class has 7 girls and 8 boys. The 4th hour class consists of 10 girls and 8 boys. Each of the students was asked to participate in the research study by completing the questionnaire, which may be found in the appendix to this thesis. I also interviewed the instructor for the study. The teacher was a 26-year-old female with a bachelor's degree in English and three years teaching experience. All of her teaching experience, save for student teaching, had been completed at the same school.

The Classroom

My research study focused on the use of laptops in the classroom, but moreover, how the decision not to use laptops affected the students, their work in class, and the instructor's delivery of the lesson.

As far as the technology used in the classroom, this teacher had a Chromebook cart in the front of the class that included 30 laptops or Chromebooks. Students at the school were mostly confident using the technology as the district had implemented these tools in phases for the last three years. Any student who had been in the district for at least one year should have extensive experience using the Chromebooks as they were available at all of the district's K-12 buildings. The process for getting a Chromebook was that students would grab one from the cart at the beginning of class and leave it on their desk, closed, as they awaited further instruction from the teacher. This was a seamless process that students had practiced since the beginning of the year.

A Smart Board was located at the front of the class, which utilized a projector mounted on the ceiling of the classroom. All students could see the projector, although they were seated in pods: desks grouped together in sets of threes and fours. The instructor had a laptop in the back of the classroom that allowed her to control the projector and mirror her screen.

Students were all enrolled in the program called Google Classroom, which allowed the teacher to create, share, and grade Google Docs, Google Sheets, Google Slides, as well as add links to outside resources. This is essentially the hub for the class when they were working on the Chromebooks. All activities, classwork, and homework was completed through this particular program.

Another note about the daily procedures in the classroom: the students are given ten minutes to read their independent books quietly, which required no technology. None of the students in the class read from their phones or a kindle--everyone had a physical copy of their book. These books were then used to complete one creative project (online or offline) per quarter. I observed students reading their independent texts in all of the classes.

Research Methods Overview

For the purpose of answering my thesis questions, and furthering my understanding of how technology impacts the ninth grade classroom, I proposed changes to the normal usage of technology during the teacher's lessons. I proposed that the teacher amend two of her lessons. The first lesson would be taught identically between 2nd and 4th hour. The major difference was that the 2nd hour class did not complete the lesson on Chromebooks, whereas the 4th hour class did use Chromebooks. For the second lesson, both classes would complete identical lessons without Chromebooks. My purpose conducting the study this way was to have one control class that didn't use Chromebooks in either lesson (2nd hour). After each of the two lessons was taught, students completed a questionnaire. Following the lessons and questionnaires, I interviewed the teacher. Finally, I conducted two focus groups that asked students to discuss technology in the classroom.

Observation/Classroom Intervention

Both English classes, second hour and fourth hour, drastically changed the ways in which they used technology during the lessons I observed. The purpose of conducting the study in this way was to see what the teacher and student perceptions would be regarding the lessons as they were taught offline, but also if there was a difference in the fourth hour class as they did one lesson on the computers, and the other without any technology.

Before I began formally observing the class during spring semester, the teacher had assigned students to complete a small research activity that centered on the history of Shakespeare, his plays, and historical context of his era. The outcome for this particular lesson was for students to embody the topics they researched by dressing up in characters related to their research and presenting an original script in front of the class. Technology was a core

component to this lesson. All research was conducted on the Chromebooks, feedback from their peers was given via the Chromebooks, scripts were written in Google Docs, and while students presented their information, they read from the laptops. Students were graded both individually and as a group based on their completion of the teacher's objectives for this activity.

I observed the first lesson after the research presentations were completed and presented. In this lesson, the class was introduced to the traditional Shakespearean sonnet. The lesson started with a description of the major components of a Shakespearean sonnet, including iambic pentameter as an initial focus. Students followed along on a document on their Chromebooks that outlined parts of the presentation and asked students to fill in blanks, answer questions and mark excerpts from sonnets as the teacher went through a Google Slides presentation that included information on sonnets and provided examples of Shakespearean sonnets. Also, there was a video shown to the class during the presentation that discussed iambic pentameter. Next, the presentation focused on the components of a sonnet such as quatrains, couplets, and rhyme scheme, followed by an example: The Prologue in *Romeo and Juliet*. Students were asked to mark excerpts from The Prologue for rhyme scheme, quatrains, and the couplet, as well as comprehension of what the text was saying. These parts of the lesson were all completed individually by students. At the conclusion of the lesson, students were asked to write their own sonnet using the information they obtained during the notes and presentation. Rather than completing an entire sonnet, the students were only asked to write the first eight lines and compare their text to that of Shakespeare's Prologue. These class periods were 84 minutes, and students had time to complete all parts of the lesson in class, but some needed time outside of the 84 minutes to finish sonnets for homework.

When I interviewed the teacher after this lesson, she explained that the end goal for students was to write their own sonnet that represented the specific aspects that they discussed in class, especially when considering The Prologue. In the interview, the teacher explained that students were mostly successful in both classes, but struggled with iambic pentameter because they were “focused on end rhyme and syllables.” She mentioned that students learned how to implement end rhyme and use the vocabulary they learned in class such as “quatrains” in their sonnets. So, students mostly grasped the major concepts from the lesson in the eyes of the instructor.

The second lesson I observed fell just two class periods after the first. In between the two lessons, students read *Romeo and Juliet* as a class, and completed comprehension questions from the text on a Google Doc in Google Classroom. The instructor posted a shared Google Sheet on Classroom that determined what characters were read by which students each day. This process was consistent throughout their reading of *Romeo and Juliet*. Before I observed, students had read and completed questions for act one scenes two and three.

During the second lesson I observed, students were given parts based on volunteers in class chosen by the teacher, and they read act one scenes four and five as a class. While they read, the students were asked to answer comprehension questions based on the play. For this, students were seated in a circle and the instructor paused during different parts of the text to clarify language and call on students to provide answers to the text-based questions. Most students were able to read fluently, but some struggled with the language. Answers were provided by students in a traditional literature discussion format, and if they needed any correction, the teacher clarified the answers and meaning of the text. This was basically the lesson plan for the rest of class as students read and responded to the questions. The teacher

explained that the class had been working on voice projection and vocal performance. She also commented that the comprehension about the two scenes that we read would be the takeaway, and that was what she hoped the students would get out of it. Also, she mentioned that students should be able to take lines from the text and then make an inference on what was happening or coming to a conclusion after the lesson. Objectives for this lesson centered around comprehension of the text as well as vocal reading.

Student Questionnaire

At the beginning of my research I was attempting to find a connection between the use of technology and the students' attitudes towards the Chromebooks in the lessons. After each lesson, both online and on paper, I had students respond to a questionnaire that I created based on my attempt to find a correlation between the learning and Chromebooks. The questionnaire asked the students to respond to 12 questions and statements based on the lesson, and their attitudes toward the lesson. 10 of the statements were multiple choice and asked the students to respond with "strongly agree", "agree", "disagree" and "strongly disagree". The questions posed were focused on student attitudes toward the different lessons. The final two statements on the questionnaire asked students to respond with short answers to how they felt about the lesson and if they would make any improvements to the lesson. The questionnaire can be located in the appendix.

Once the students completed the questionnaires after the lessons, I started to sift through the responses and data. I did this by giving a point value to each of the responses. For example, "Strongly Agree" equaled four, "Agree" equaled three, "Disagree" equaled two and "Strongly Disagree" equaled a one. I then took all of the responses, put them into a spreadsheet, and averaged the scores for each question. For the short answer questions, I highlighted the responses

that went into detail about the use of technology in the lesson, and noted those as potential students to use in the focus groups. I figured that these students had strong opinions about the use of technology in their classroom, and would provide explanations for their responses during the focus group discussions. These discussions and choices for focus group participants are defined in the analysis chapter of my thesis.

Interview with the Teacher

Within a week of completing the lesson observations I interviewed the teacher of the class. My purpose was to find out how she felt about the differences in using technology with one class and no technology with the other class. In addition, my questions for the teacher focused on her reactions and expectations based on the lessons, as well as her opinion on the use of technology in her classroom. My questions asked the teacher if she thought the lesson went well, what she would possibly change, opinions of technology used in her lessons, if the technology becomes a distraction, and how technology has affected her lesson planning. I conducted this interview one-on-one and recorded the responses with my phone. The interview questions may be located in the appendix to this thesis.

Focus Groups with Students

After my observations, interview of the teacher, and completed questionnaires, I conducted two focus group discussions from each class. Each focus group consisted of four students from each class. One group was comprised of only female students while the other group included two male students and two female students. The focus groups were held in the school's media center in a private and quiet location. The first group's interview lasted 15 minutes and the other group's lasted 10 minutes. Some of the questions I asked included:

- How long have you been using technology like Chromebooks in a classroom setting?

- How do your other classes use technology like Chromebooks in the classroom?
- What do you like about using Chromebooks in the classroom?
- What do you dislike about using Chromebooks in the classroom?
- Would you prefer to see more, less, or the same amount of technology, like Chromebooks, used in your classes and why?

Both focus groups were made up of four students that had responded to the questionnaire with specific feedback and commentary about the use of technology during the lessons. The purpose of these focus groups was to get more detailed information about these students' attitudes regarding the use of Chromebooks and technology in the classroom. To help get more detailed responses, I crafted questions that directly addressed their opinions on the use of technology in the classroom. Also, I used students' short answer responses from the questionnaire in some of my questions to spark discussion in the focus groups. I recorded these focus group interviews and transcribed them.

Chapter 3: Analysis

Observation Analysis: Lesson One

During the first lesson in 4th hour, the class using Chromebooks, students had no trouble using the computers. I noticed that the class was used to instruction on the laptops, and that it did not really affect the lesson in one way or another. Although the laptops were out the entire time, the instructor did actively engage the class in other ways. For example, she had students use their hands and arms to indicate when they were completed with a portion of the Google Doc assignment, as well as represent the syllables in the Shakespearean sonnet. Students seemed to enjoy the active participation in the lesson. This showed that even though the lesson was mostly completed on the computers, the teacher still made an effort to engage them in other ways. Again, this came natural to the class and seemed to be an effective way of breaking up the constant use of laptops. Continuing, the students returned to their laptops for the second part of the lesson without any noticeable issue or distraction as they shared their completed assignments with one another. Also noteworthy, one of the students asked the teacher to define a word from Shakespeare's *Romeo and Juliet* Prologue, and he was directed to use the Google Docs "define" feature to find the definition. This showed me that some of the features on the Chromebooks, such as the "define" feature, could be used to enhance the student experience during the lesson. Finally, the class highlighted parts of the Prologue on their Google Docs to indicate they learned the aspects of a sonnet, and had no issue completing the activity. My observation and analysis of this lesson, with the laptops, was that it seemed to flow seamlessly because students were used to using the Chromebooks and all of the features of a digital lesson. What I couldn't truly observe were the attitudes that students had about this consistent use of the laptops in the classroom.

There were no real indicators that students liked or disliked the lesson because it was on a laptop, so I was relying on the questionnaire responses, and eventually, the focus group interviews.

The 2nd hour class completed the first lesson on paper, which was a change for the students and teacher. What I initially noticed during this lesson was that one of the students had her own Chromebook, and was taking notes and using the laptop throughout the lesson. The instructor did not mention the laptop, or ask the student to put it away even though the entire lesson was completed on paper. This showed me that some students prefer to bring in and utilize their own device even when a lesson is completed on paper. My reaction to the student using the laptop while simultaneously completing the activities on paper proved that this student was resistant to the change in the lesson plan. At the end of formal instruction, the teacher allowed multiple groups to move around the classroom, and complete their own sonnet independently. As the students began working on the sonnets, the student who had brought her own laptop asked the teacher if they had to write their sonnets on paper, to which the instructor replied, "I would like you to." After about 10 minutes, the teacher walked over to the student with their laptop out and asked her to put the laptop away, and politely explained that they are completing the sonnet on paper. The student complied, but looked noticeably upset that she couldn't complete the sonnet on her own computer. It's interesting to note that the instructor did not make a comment about the laptop being out until 65 minutes had passed in the lesson because this may show that the teacher did not really mind that the computer was out, or perhaps did not even notice because she is used to students constantly having computers on their desks. Additionally, this shows that some students legitimately prefer to have a choice between paper and Chromebook, no matter the lesson plan. Educators should make note of the fact that students have these preferences.

Observation Analysis: Lesson Two

Neither class was allowed to use Chromebooks during the second observation lesson plan. When I walked into the room for 4th hour, the desks were arranged in a circle, and a few students had grabbed Chromebooks, letting them sit open on their desks. This showed that they were accustomed to this procedure, and once the teacher explained that the lesson would be completed on paper today, the students did not seem to have an issue putting away their computers. It's interesting to note that although this contrasted their normal routine, it did not elicit defiance.

Next, the class completed the assignments by writing their answers first with paper and pen, and then on the whiteboard. It was observable that students naturally completed the activities without any reserve or commentary on the lack of Chromebooks. Multiple students brought up this part of the assignment in the focus groups. Mostly, they had a positive reaction to the ability to write down the characters on paper, as well as visualize them on the board in front of class. I'll discuss this more in the focus group analysis section.

For the rest of the lesson, students were reading from *Romeo and Juliet* aloud based on the character parts they chose to read, and did not appear completely engaged with the text. This could be due to the fact that it was a traditional paper text rather than a Chromebook, but they had no trouble reading their own independent books without an electronic device, so my observation was that it was the complex text of Shakespeare rather than the medium in which it was read that affected the student engagement. Students looked noticeably tired as some had their heads down for periods of time and others were looking away from the book. Students reading the text aloud were noticeably struggling with the Shakespearean writing, and some took a long time to complete their parts, often mispronouncing multiple words. This may have been a

moment when technology could have assisted in the attention or comprehension of the text, and some students alluded to this in the focus group responses. My takeaway was that the 4th hour students enjoyed the activity on paper where they were working together to put characters in the correct family household, but lost interest multiple times during the reading aloud of the play.

Similar to the 4th hour class, the 2nd hour group showed up and had Chromebooks out on their desk without any prompting from the teacher, which is representative of the regular procedures. Once the teacher mentioned the Chromebooks were only to take a survey at the end of class, every student with a laptop shut the lid and put them away without any resistance. To me, it seemed as though they were happy to put the computers away for a change, but this could also be due to the general compliance of the student body at this school.

After the initial part of class, students had independent reading time, and similar to the 4th hour group, every student had their own independent physical copy of the book. Again, no one read from a Chromebook or phone. I found it a little surprising that between the two classes no one preferred reading on an electronic device.

Then students began working on the activity where they put the characters in the corresponding familial house: Montague or Capulet. What I observed was that the students worked together without reservations, and were noticeably engaged in the activity, similar to the 4th hour class. Then multiple students got up and volunteered to write the names on the board, showing that there was a possibility to have positive engagement without the use of the laptops, and relative to the other class, students in the focus group discussed how they enjoyed this part of the lesson. It may be that an activity in the lesson, whether on paper or Chromebook, is engaging to the students regardless of technology because it is just a well-crafted activity.

Also similar to the 4th hour class, the students looked somewhat tired and apathetic during the class reading of *Romeo and Juliet*. Multiple students rested their heads on their hands, and appeared disengaged. Again, students struggled with the reading of the language, but I do not conclude that it was only because it was a physical text rather than on a laptop because this group also read strictly traditional paper-bound books for their independent reading.

Student Questionnaire Responses

After students responded to the questionnaire based on the two different lesson plans, I began organizing the data. I did this by giving each multiple choice response a numerical value, and then attempting to find any interesting correlations to the student attitudes based on the different lessons (this data can be accessed in the appendix to the thesis). What I found was that the students did not have strong opinions about the success of the lesson, or what they learned during the lesson, which is what the multiple choice questions focused on, but they showed their concern in the free response sections of the questionnaire.

These were the two free response questions:

- “Briefly explain how you felt about today's lesson”
- “Briefly share any improvements you would make to the lesson”

As you can see, the questions focused on the lesson, but did not directly ask the students about their attitudes toward using laptops. Regardless, I had multiple responses that sparked interest for the purpose of my thesis. Based on these responses, I did not have enough to make certain conclusions about the use of technology or Chromebooks in the classroom. My questions failed to result in the types of responses I was looking for, but they did open up new opportunities for me to further research the attitudes of the students in these classes.

For instance, one student responded that they liked the assignment because it was completed on paper. This particular response showed that high school students have opinions on this subject, and may even want to use a different medium to complete an assignment in class. It became apparent that teachers rarely, if ever, asked the students about their opinion on the use of technology versus traditional pen and paper. Building on this idea, another student commented: “I felt that this was more efficient and took up less space on our desks” in reference to using paper to complete the lesson as opposed to the Chromebooks. This response proved to be a revelation for me as a researcher because the space taken up by Chromebooks on a desk never even occurred to me as something a student might experience in a 1:1 classroom. These are the types of responses and opinions that are rarely discussed in classrooms that have recently adopted the use of Chromebooks, and could prove to be an important part of sustaining the use of technology in the classroom.

In contrast to the preference of just using paper to complete assignments, another student responded: “I like using no computers, but I also like using computers just as much.” I found that, initially, this seemed like a minor comment about the use of technology in the classroom, but as I reflected on the comment, it became clear to me that the students need to have their opinion on the use of technology taken seriously by instructors and administrators, because it is clear that they have thought deeply about using the machines, and how it might be affecting their learning.

These responses helped me better understand where to focus my research, and how to successfully answer my thesis questions. I decided to create two focus groups from each class based on the questionnaire responses.

Focus Groups: Introduction

The focus groups were made up of 8 total students that expressed their views on technology in the free response section of the questionnaire, and I crafted questions for the focus group sessions based on these responses. The questions I asked focused heavily on their experiences with technology in the school district, both current and past. I also asked the students what they liked and disliked about the Chromebooks used in their classes. These questions can be accessed in the appendix to this thesis. One group was made up of four students from the 2nd hour class and the other group included four students from the 4th hour class that I observed, for a total of 8 participants.

The students explained their previous experiences with technology in the classroom saying that they had been using Chromebooks since middle school, but before that they remembered using netbooks. Students in the focus groups discussed that they could remember using netbooks for school as early as 4th grade, and that back then it was just a large computer lab that everyone shared. They referred to the netbooks saying they “wouldn’t load fast enough”. I briefly touched upon this use of netbooks in my introduction, sharing the same opinion as these students. Then, they told me that the use of Chromebooks gradually increased from 6th grade to 8th grade, but came to a consensus that by the end of 8th grade the use of Chromebooks had become “too much”. The middle school in this particular district houses grades 6-8. So, by 6th grade these students explained to me that they had begun using the Chromebooks more often, and in 7th grade each respondent said they used them “a lot”. They also told me homework started to be completed online during middle school. It’s interesting to note the ages these students began using Chromebooks, especially on a consistent basis, because they would be

some of the first students to enter high school already adept at using the Chromebooks. This past use could have impacted their current opinions of the technology.

There were limitations to conducting the study groups and analyzing the findings. For example, they were comprised of the students that were open to discussing technology on the questionnaire, so it may be that other students had opinions about the technology, but were not able to express their views in the questionnaire. This also could have affected the findings in the focus groups because I already had students that were willing and open to discuss technology in the classroom. The students in the focus groups are representative of their classes in that they are English 9 students that have been in the observed school district for multiple years. Yet, these students may also not be representative of the greater opinions of their peers because they only make up about a quarter of the entire populations of the classes. Even with these potential limitations, the focus groups proved to be a source of thoughtful feedback from the participating students.

Focus Groups: Analysis

One of the first positives that was expressed by both focus groups showed that some students had preference using technology because it quelled the issue of losing paper assignments as well as the burden of carrying a heavy backpack (It is worth noting that the school does not utilize lockers; instead, students carry all materials in their backpacks to each class). Specifically, what I heard were the following sentiments: “We don’t really have hard copies of things so we can’t lose it [homework]” and “Yeah, my backpack is not as heavy without textbooks.” These initial responses to the focus group questions caught my attention because they were more focused on convenience for the students rather than improving the lessons, but still showed that some students had specific preferences when it came to using

technology in the school. Both focus groups echoed these ideas, mentioning that they appreciated not carrying around large textbooks as a positive. One of the students in the 2nd hour group became a bit angry during this specific discussion saying, “Even with the Chromebooks they [teachers] still give us the textbook and make us carry it around like here’s extra weight. We don’t even use the textbooks in half of the classes.” I could sense that he was very opinionated about this topic, and he noticeably appreciated that someone had asked about his perspective on Chromebook usage. The fact that these students shared some of the similar preferences for technology, but still had strong individual opinions began to reveal to me that teachers should be actively engaged in conversations with students about their use of technology in the classroom.

My finding that students had strong and independent preferences toward the use of technology in the classroom persisted because there was an extended discussion on the use of pen and paper versus Chromebooks. 6 out of the 8 total respondents claimed that they preferred using paper and pencil as opposed to strictly writing on the Chromebooks. One respondent explained, “I know, for me, I prefer on paper, so I guess the Chromebook isn’t necessarily my thing, but I’m okay with it.”, and another expressed, “For me, it doesn’t change anything. Like, I’m still learning the same stuff, but I prefer writing.”. Still another student talked about how they preferred paper saying, “Sometimes I feel like it takes longer to get to the assignment instead of just pulling out a piece of paper.” This specific discussion is noteworthy because a majority of the total students directly explained a preference of paper versus Chromebook without any sort of prompting--I was simply asking if the Chromebook improved their learning, but there were still two dissenting opinions from the majority, and they were partial to the laptops over traditional paper and pen. One of these students said that they preferred typing because the autocorrect function helped him correctly spell some of the names of characters in

the play. These varying attitudes about paper and pen as opposed to typing on the Chromebooks should be addressed by teachers and administrators because they are clearly affecting the students' perceptions of the lesson plans and activities.

Another important point about the students' attitudes toward technology that came up during the focus groups was that they were genuinely worried about technical issues affecting their ability to complete homework, as well as their classmates facing the same issues. 5 of the 8 students came out and openly stated an example of a time when a Chromebook or Wi-Fi technical issue affected them. One of the students remarked that, "The Wi-Fi doesn't always work." while another added, "At home, we don't have internet, or the internet could be down. Or you don't have access to a computer sometimes." It is worth mentioning that these students were aware that connectivity issues may not only affect them, but also their classmates, and they were concerned that other people in the class may not have an equal opportunity to complete assignments because they are on the Chromebooks. Building on this idea, another participant commented openly that, "Some kids don't even have internet or computers at their house and the teachers assign homework on the computers and they can't do the homework. And they get penalized for it." Equitable learning is not necessarily something teachers discuss openly with their students, but it is apparent that the students know either from personal experience, or talking with their classmates, that using the Chromebooks in class may have an impact on grades even though it is completely out of their control. Some other examples of these technical issues included connecting to the Wi-Fi successfully, or if one student's laptop has trouble connecting to the Wi-Fi, it could affect the entire class. A pair of students responded that they had held up an entire class once because their Chromebooks were not connected to the wifi or working correctly. It continued to become apparent that we as educators need to take these students and

their opinions seriously* because they understand and experience first-hand real problems with the use of technology such as Chromebooks.

Handwriting versus typing answers to complete classroom activities and projects was another major point of discussion brought up by the students. Surprisingly, 5 of the 8 students responded that they preferred handwriting to typing on a computer for certain activities. The general consensus of why this is so, they told me, was because they were able to remember more from the lesson when handwriting their answers. One of them told me, "I feel like I don't retain the information as much. Like as I am typing it." Now, the idea that typing versus handwriting could impact the student's learning had not really occurred to me before the student made this comment. A classmate joined in on this conversation of the idea of handwriting being preferable to typing, and suggested writing by hand was not better because she could type faster than handwriting. Following this statement, a different classmate chimed in and explained that she understands concepts more when she can write them down, and the only student who refrained from commenting for the first part of the discussion said she liked the Chromebook more because it was easier to copy and paste information for an assignment or project. Again, it was obvious that the students had drastically differing opinions on whether to handwrite versus type on the Chromebooks, similar to the first group. These opinions showed that students legitimately had strong attitudes and beliefs about using the computers in class.

Another negative response to the Chromebooks that students seemed to agree upon was the overuse of the machines leading to headaches. I had not heard any complaints about physical pain caused by the Chromebooks, but three of the four students in the 2nd hour focus group told me they either got a headache or their eyes began to hurt because they looked at the Chromebooks for consecutive 84-minute class periods. Again, this type of comment is not

something I had heard from students, nor my colleagues had ever discussed as a potential issue with the laptops. In regards to my initial thesis questions about student attitudes, it became even more apparent that students themselves are rarely given a platform to discuss these types of concerns surrounding the use of new technologies in the classroom.

My conclusion based on these detailed, corresponding, and sometimes contradicting, remarks is that students deserve to have their voices and opinions on technology that they are using in the classroom heard by instructors and administrators in the school building. Before I wrote my final analysis and conclusion based on these findings from the focus groups, I wanted to first bring in the teacher's perspective on these same questions about technology, and compare to those made by the students.

Teacher Interview: Analysis

During my interview of the teacher, I noticed some connections and distinct differences regarding her attitudes towards technology versus that of the students from the focus groups. I began by asking about her opinions of the technology in the classroom, and she explained that she almost exclusively uses the Chromebooks to complete activities in her classroom. Her defense of this use was that she believes that students prefer the technology as opposed to writing with traditional pencil and paper. Referring back to the focus groups, I realized that this was a disconnect in belief between the teacher and students as some of the students clearly explained that they sometimes prefer the use of paper and pencil instead of the Chromebooks. The instructor said that she thought the students that wanted to use pencil and paper were an "anomaly", and that maybe 3 total freshman students had ever asked to complete assignments this way. The focus group discussion and observations of the lessons both showed that the students were compliant in using the Chromebooks. They were never asked their opinion

directly, so they just complied with the teacher's requests, which is what they are used to doing. The problem with this is that it creates a disconnect between the students' feelings toward the laptops, and the teacher's assumptions about their attitudes. To fix this problem, it would make sense for the teacher to create a forum or cultivate a discussion, similar to the focus groups, where students feel comfortable sharing their opinions of the technology without fear of reprimand.

As we continued the interview, I found that the teacher was a strong proponent of the Chromebooks for multiple reasons because, in her opinion, they benefited students and made her life as an instructor easier. She told me that the Chromebooks have allowed students to complete work, especially written work, more quickly and this has resulted in more material being covered by the teacher. In addition, she told me that students do not lose papers because of the online assignments, and now she does not have to spend instruction time making copies or getting a new copy of the assignment for each student. Finally, she said another benefit was that students could look back through class assignment and notes via the Google Classroom if they needed to review any specific material. These positives were briefly touched upon by the students in the focus group discussions, but what I found most interesting was when I asked the teacher about whether she would use Chromebooks for a lesson given the choice, because the response contradicted what I heard from the students.

The instructor, when asked about preferences using Chromebooks versus traditional pen and paper, explained to me that she would choose Chromebooks because that is what the students would prefer to use. She assumed that the majority of her students prefer using the Chromebooks, and that they would be more comfortable without pen and pencil. This statement is in direct contradiction to the student opinions from the focus groups. In regards to the

comfortability, multiple respondents said they felt the Chromebooks gave them headaches or made their eyes hurt after extended use. I found this to be the central finding behind the study: that students may have differing opinions of the new technologies like Chromebooks, but the teachers base most of their choices on assumptions rather than having discussions with the students, similar to the focus group format, to better understand what students currently think about the use of technology in the classroom.

Suggestions for Instruction

Based on the findings from my thesis research regarding the use of technology, especially Chromebooks and similar laptops, in the 21st century classroom, I am recommending that teachers seek out ways to receive direct and meaningful feedback and input from their students. During the focus group interviews, it was clear to me that the students wanted to have their opinion on the use of technology taken seriously, especially because they are the ones that have been using it since its inception. If teachers can find ways to creatively, and effectively, obtain responses and feedback from their students on the topic of new technology in the classroom, it should positively impact the learning experience.

One strategy that teachers should implement is the creation of anonymous feedback or response sheets that could be delivered monthly, or after each unit of study. Because of the already heavy load of planning, grading, and various responsibilities a teacher faces, I am recommending this feedback sheet be no more than a few questions that quickly discuss the use of technology used in the unit of study. The questions should be similar to those from my focus groups as those proved to elicit thoughtful responses. Here are some examples:

- What did you like about using Chromebooks in the unit?
- What did you dislike about using Chromebooks in the unit?

- Would you prefer to see more, less, or the same amount of technology, like Chromebooks, used in class and why?
- How did you like completing the [name of text or specific reading] lesson where you completed the assignment on paper?
- Does it make a significant difference to you if the lesson is on the Chromebooks versus paper? Why or why not?

All, or some, of these types of questions should help the instructor better understand where their students stand concerning the use of technology in the classroom. It is important to note that last question listed, because it could be that some students do not have a preference when it comes to using the Chromebook or paper, and they enjoyed the lesson because it was a well-crafted lesson, regardless of the medium in which it was delivered. In this case it is all the more important for the teacher to understand that some of their best lessons do not need to be transferred on to a digital device, or switched to being on paper, saving the instructor planning and preparation time.

Another suggestion for receiving adequate and meaningful feedback that leads to positive change is to create a teacher-student technology committee that meets regularly to discuss the opinions on current use of technology school-wide. This does not need to be an entirely new committee created only for the purpose of discussing technology, but could be incorporated into an already existing group. For example, the school I observed for this study has a Student Advisory Group that meets directly with the principle and multiple teachers to discuss concerns of the student body. These meetings could include topics relating to the use and overuse of technologies in the classrooms, including headaches from exposure to the screens, lessening the

load of backpacks, and issues with Wi-Fi connectivity (all issues brought up by students during the focus groups).

Conclusion

Teachers and school administrators must always strive to listen to their students in the 21st century classroom because of the rapidly changing nature of technology that continues to be used therein. As touched upon in my introduction to this thesis, I have a strong desire to continue using and implementing the newest technologies available to students, but only if that means the learning experience is enhanced by these technologies. My fear has always been that schools could possibly get carried away with the use of new devices, such as the Chromebooks, and I've realized after conducting this study that there needs to be a consistent conversation amongst students, teachers and administrators in rural districts about the technology utilized in the classrooms.

My recommendation is that further research be conducted at this and other rural schools as new technologies, like Chromebooks, continue to be implemented. Specifically, researchers should attempt to understand, in detail, the opinions that multiple teachers and students have regarding the different technologies as they move forward with innovative lesson plans and activities. Recognizing the different opinions that students hold regarding the technologies was useful for my research, and should be continued by asking more students about their experiences with technology, taking those opinions seriously, and moving forward with some form of student-led technology committee.

It is clear to me now that my questions about the attitudes of students and teachers toward technologies like Chromebooks were important to answer, and helped lead me to an understanding about how much miscommunication and misunderstanding takes place between

instructors and compliant students. To help ease this disconnection between teacher and student, we as educators must help meet the individual needs of the students. If schools want to move toward a more individualized learning model, then each individual student's opinion on technology should be considered. If educators and school administrators continue to push technology, like Chromebooks, without thinking about the impacts they may have on student learning, the students could become wary about using the new technologies at a rapid pace. To combat this potential outcome, teachers and administrators need to consistently have conversations with their pupils about the technology they are placing in the classrooms.

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Appendix A: Student Questionnaire

Directions: Closely read the numbered statements, and respond by marking the answer that most accurately reflects your opinion,

1. I genuinely enjoyed the lesson today

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

2. I understood the material taught in the lesson

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

3. The lesson was difficult to complete

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

4. If I could, I would recommend changes to the lesson

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

5. My writing skills improved after this lesson

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

6. I learned something new from this lesson

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

7. I would rate today's lesson as highly effective

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

8. I have no suggestions for improvement of the lesson

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

9. I prefer learning without using laptops

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

10. I would recommend this lesson to other English 9 classes

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

Open-Ended Questions. Answer these questions with your personal opinion.

11. Briefly explain how you felt about today's lesson

12. Briefly share any improvements you would make to the lesson if you could

Appendix B: Teacher Questionnaire

Directions: I will be asking you the following questions, and recording your answers through my phone's voice recorder after each research session.

1. How did you feel about the lesson today?
2. What do you think was most successful about the lesson?
3. What would you change about the lesson if you could do it again?
4. Do you think the students learned what you intended them to learn? Why or why not?
5. Did anything happen during the lesson that was unexpected or surprising? Explain, please.
6. What is your opinion about the use of technology in your classroom to complete writing assignments?
7. How many of your lessons would you say use some sort of technology?
8. Do you think technology is a distraction in your classroom? Why or why not?
9. Explain your view on how the use of technology has affected your lesson planning.
10. If you had the choice between teaching a writing lesson using laptops or no laptops, which would you choose and why?

Appendix C: Focus Group Questions

1. How long have you been using technology like Chromebooks in a classroom setting?
2. How do your other classes use technology like Chromebooks in the classroom?
3. What do you like about using Chromebooks in the classroom?
4. What do you dislike about using Chromebooks in the classroom?
5. Would you prefer to see more, less, or the same amount of technology, like Chromebooks, used in your classes and why?
6. How did you like completing the Romeo and Juliet lesson where you read the scene, and answered on paper, without Chromebooks?
7. Does it make a significant difference to you if the lesson is on the Chromebooks versus paper? Why or why not?