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Using Digital Devices to Improve Student Collaboration

Thea Janitschke
St. Catherine University

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Review of Literature

The majority of communication students do is through some form of technology, which is why classrooms should be very focused around the use of technology. Students are using their own devices or classroom devices to enhance their learning. These 21st century skills are important for students to master. Schools need to keep up with the ever changing technology field in order to keep students engaged and learning in the classroom and the society they are living in. There are many different types of devices that are available to schools and students. Two of the devices that are available at my school are Google's Chromebooks and Apple's Ipads. I currently use Google Chromebooks in my classroom to enhance learning of literature, while a fellow colleague of mine is using Ipads. For my study, I thought it would be interesting to see which device, Chromebook or Ipad, enhances student collaboration and student outcomes more.

My action research project was done in a high school setting in a northern Minnesota suburb. I used my three World Literature classes and one World Literature class of a colleagues to complete my project. The students that were part of this project were both male and female students. There were sixty-nine male students and sixty-six female students total. All of the students who participated in my research project were in 12th grade and between the ages of seventeen to eighteen years old. The data was collected during second semester of the 2013-2014 school year in the Asian Literature unit. This unit lasted four weeks and ended with a common assessment taken by all 135 students. The action research question I developed is, which digital device, the Ipad or the Google Chromebook, will more effectively improve student collaboration on a Language Arts unit on Asian Literature?

Schools do not always have the same access to types of technology or types of devices. According to Waters (2012), the distribution of technology devices are very uneven. The

distribution all depends on a number of factors that include schools, grade level, region and 21st

learning is happening right now. According to Susan Blakemore (2012), teachers must be willing

to work with the kind of brains students have now, mostly referring to the digital learner.

Blakemore (2012) states, "This new generation of digital learners -- call them the Media

Generation -- take in the world via the filter of computing devices: the cellular phones, handheld

gaming devices, PDAs, and laptops they take everywhere, plus the computers, TVs, and game

consoles at home" (as cited in McHugh, 2012, para 6). Moersch has found that most teachers are

eager and want to use technology in their classrooms, but are held back because of standardized

testing. They are spending most of their days in a traditional lecture style to make sure they are

covering material for the tests (as cited in McHugh, 2012). The Federal Communications

Commission reported that 97 percent of schools in the United States had internet connections in

their schools (as cited in "Technology in Education", 2011). In 2012, 77% of students between

the ages of 12-17 had cell phones that were connected to the internet (Watters, 2012). from

Education Week(2011), reports that because of increasing access, decreasing costs and higher

acceptance, a number of different devices are becoming a popular trend in education classes.

Two devices that have been used in the classroom are Ipads and Google Chromebooks.

    The device that was released first to the public in 2010 was the Apple Ipad. The research

about Ipads in the classroom is still being conducted since it has not been released for very long,

but the research also reports that teacher and student attitude towards this digital device used in

the classroom is generally positive (Hoffman, 2013).Hoffman also states that students reported

when Ipads were used, their learning and engagement improved (2013).

    Tricia Smith, an elementary teacher, uses Ipads in her classes to encourage student

collaboration (Saine, 2012). Smith found that students were very willing to collaborate on

projects and were able to work on the same assignment simultaneously during class time (Saine, 2012). "Students worked in pairs to create a short story that focused on a character trait (i.e., honesty, respect, personal responsibility, fairness, etc.) and story elements such as characters, setting, plot, problem, solution" (Saine, 2012, p. 74-78,81). A study at Indiana University-Purdue was done to see if students enjoyed working with Ipads. After students were done working with the Ipads, they were interviewed about the project, "One respondent stated that Ipads allow one to easily access information. Groups can produce more work quicker and eases group cohesiveness" (Miller, 2012, p. 54-59).

Ipads are fostering student collaboration among students and teachers in all levels of education. The Ipad applications that are readily available to students are helping with this collaboration. Ipads have been the device that have been used since released in 2010 (Hoffman, 2013), but this does not mean that it is the only device that should be used to increase student collaboration in the classrooms. This student collaboration is being used at different levels in the educational system.

The most recent type of device that has become popular for student use in the classroom is Google's Chromebooks. Chromebooks have become a choice for schools because of it's low cost, web browser application and the fact that it is backed by Google cloud (Wire, 2014). "Chromebooks deliver a rich experience that is easy to use with fast startup times; they provide a simple, scalable, and affordable way to put technology into the hands of more students and teachers" ("Compass Learning", 24). For the schools that have become a Google school, the Chromebook is a way to continue on the Google path. These devices are convenient and easy to use, which has enhanced the interaction between students and other students, but also between students and teachers.

The collaboration Chromebooks creates in classrooms is an ideal environment for a 21st century classroom. "Chromebooks are optimized for the Web's vast educational resources. Educators can integrate rich content into lessons, inspire collaboration, and encourage students to create and share their own content with the world" ("Compass Learning", 24). There are application that the students can access when working with one another during class time. A common app the Chromebooks offer is Google Docs. This app allows students to collaborate in a number of ways. " (2014) states, "Google Docs allows you to not only create word a document, but to easily collaborate with others" (para 4). Students have the capability to share documents with one another and to work simultaneously on the same document. A case study done by Google at Richland School District (2012) reported that Chromebooks foster a student's engagement and collaboration. "Since implementing Chromebooks, Richland Two has seen a significant shift a more collaborative learning and teaching environment" ("36657_Richland2_CS_121113.pdf - Google Drive",, 2012). This study also found that the collaboration between the students and teacher improved too.

Teachers have been experimenting and trying new ways of instruction to implement digital devices into their classrooms. Teachers who have been using Ipads found that they foster more student engagement when using them in their instruction. Saine states, "Teachers claim when students are engaged in digital literacy activities, the students see these tools as exciting and unique, but often not as schoolwork" (2012, p. 74-78, 81). This is part of what is making these types of classes a 21st century classroom. Students are engaging with the curriculum and the digital world. Students are engaged in what they are learning at every grade level. These digital devices are changing the way students are learning in the classrooms. The research about Ipads in the classrooms is reporting on on-task behavior, and Ipads excel in this category

(Hoffman, 2013). "Students self-reported that Ipad use contributed to increased learning and engagement" (Hoffman, 2013, p. 9-18).

Schools are trying to adapt to the 21st century classrooms. In order to do this, it is necessary to have technology to enhance student engagement.   "Through professional development, support and assistance in a school setting, there is increasing research evidence that teacher use of technology strengthens student engagement" (Hall, Orr & Swensen, 2012, p. 3). It has also been, "found that the use of mobile tablets showed an increase in student expressive responses, imagination and engagement while studying text" (Hall, Orr & Swensen, 2012, p. 4). The more types of devices, such as Chromebooks, that are introduced to students the more adept they will be to become a 21st century learner.

Methodology

For my action research, I decided to use my Asian Literature unit in my World Literature classes. This unit was four weeks long and consisted of short stories, poetry, a novel and a final test. Throughout this unit, I wanted to see if the use of digital devices enhanced student collaboration and if this enhanced student collaboration would increase their final outcome on their unit test. I paired with Andrea with a colleague, to compare the Chromebook to the Ipad. We taught the same short stories, poetry, and novel, and gave the same unit test.

I wanted to collect data that would help me track my students' use of time in class, what their thoughts and opinions were about the digital devices, and if their final test score increased

because of this collaboration. For this data, the first form I used was a classroom observation sheet (see Appendix A). This observation form allowed me to record how often the students were collaborating on the activity to understand the short story, poetry or novel. On this form, I was able to record the date, the time I was observing them and comments about the type of collaboration I observed. I made multiple copies of this form so that it was readily available for me during every class period I was observing.

Not only did I want to have data I collected for my project, I also thought it was very important to collect data about their feedback. I wanted to make sure I had data that demonstrated their experience with the digital devices and what they thought about working with their digital device. I created a student survey (see Appendix B) that students completed at the end of each week. The questions were designed to collect their feedback on the type of device they were using, along with what their thoughts were about their learning and collaboration. I also included a place for them to check which applications they were using on their devices that week. I also included on the survey a spot for students to share any thoughts I wanted to make sure my students felt like they could provide information to me but also provide suggestions or express concerns they had about using the devices for collaboration. This survey was created as a Google Form for students to fill out online and was anonymous.

Since I decided to pair with a colleague for this action research project, I thought it was important for us to record our communication. This communication would help when it came time to analyze the data that I was collecting. For this communication, I created a colleague dialog form (see Appendix C). This form consisted of a place for us to record the date, which device was used, the strengths and weaknesses of the device for the activity and a place to leave comments for future use. This form was created to compare the two digital devices at the end of

the research study. It also was a place to keep track of where each device excelled. In the "suggestions for future use" column, we were able to record which application was being used with the device. This was important because it created a list of applications that paired with the devices.

The last piece of data I collected was students' outcomes on their unit finals. The final unit test was a scantron (fill in the bubble) test about the short stories, poetry and novel the students read throughout the unit. This data was collected to determine if the enhanced collaboration made a difference in their final outcome from the unit. I was able to record these results in my gradebook of all three classes, as was my colleague. .

The first step I took in the process of my action research was sending home my parent notification letter to my students. I passed out the letter and instructed my students to have their parents read it carefully and return them if they needed. I also encouraged my students to let their parents know that if they had any questions or concerns for them to contact me. I didn't receive any of my letters back or receive any parent contact. Since I did not reviece any forms to remove students from my study, I moved ahead with starting my observations.

For each class period that involved an activity using the digital device, I did three observations during that class. I observed my students when the activity first started, followed by an observation fifteen minutes into the activity, and then one final observation at the end of the observation. It worked out that the majority of the observations took place every fifteen minutes. Since I had three World Literature classes included in my study, I ended up doing nine observations per day. For each observation, I recorded the time of observation, what type of collaboration was being used for the activity and then made comments about the collaboration. The time of observation and type of collaboration the students were doing were circled on the

form. This part of the observation was quick to fill out. In the comment section, I recorded how many students were collaborating and how many students were not collaborating. I also recorded what each studentwas doing while the collaboration was taking place. The comment section of the form was for taking notes and detailed with what I was observing during that time. I was observing students who were using Google Chromebooks and my colleague was observing students who were using Apple Ipads. Both of us used the same observation sheets.

Even with my observations taking place during my class periods, I felt it was important for me to collect the students' thoughts and opinions. The way I collected this data was through a weekly student survey. This survey was done over the weekend at the end of each week using the digital devices. Both Andrea and I posted it to our Schoology, our online education website, page as an assignment for the students. The students had three nights to complete the survey each week. The survey was opened on Friday afternoon and closed on Sunday night. This allowed the students to take time and reflect on what they did the week before. This survey was in the form of a Google form. This allowed me to instantly collect the data and record it in a spread chart online in my Google Drive account. All of the classes were given the same form each weekend to complete. Since this survey was a Google Form, I was able to share the data with for her to analyze as well. The questions stayed the same to track if students' thoughts or opinions had changed over the course of the study. Because the questions stayed the same each week, I numbered the surveys from one to four. So week one students took survey one. By the end of my research project each student took four surveys.

The data that was collected about the communication between was done on a form I created. I made a number of copies of them for to fill out during this research process. I filled them out as well. This form guided our meetings that were held to discuss the activities that we

were doing and how each device worked. I decided that we would meet on Monday after school to discuss the prior week. By meeting on Monday after school, we were able to go over our communication forms and compare/contrast them. It also allowed us to look at the applications that were used and make any adjustments to our upcoming week of activities and lessons. Another benefit of meeting on Monday was we were able to look through the data that was collected from the survey the students completed over the weekend. At he end of the survey, each had four colleague communication forms filled out.

At the end of the four week unit, gave our students their final test. This test took one class period and was given to every student in each of our classes. The students who were absent the day of the test, made it up at another time. These tests were graded by the scantron machine and recorded in our gradebooks. These grades were used in the students overall grade for the class. This grade would have been used towards their grades whether I did this study or not. were able to compare/contrast the tests grades the Monday following the unit.

In the end, I had data that was collected through classroom observations, online surveys and graded tests the students took. The data that was collected from my study worked well and allowed me to analyze if the use of the digital device enhanced student collaboration.

Analysis of Data

The data that was collected for my action research project was done in multiple forms. I used data from observations, student surveys and dialogue with a colleague. The first data set that was collected was through classroom observations. This data was collected to see which device, Chromebooks or Ipads, was enhancing studentsstudents' collaboration in class. Three World Literature classes were using Google Chromebooks during class to learn the literature, while one class was using Apple Ipads to learn the literature. The data through observations

were collected at the beginning of the every class, the middle of the class and at the end of the class. The observation form (see Appendix A) recorded the time of the class, what type of device was used, which type of collaboration was taking place and then how many students were collaborating at that time. The Asian literature unit consisted of four weeks total. For weeks one through three, there were four school days where observations were taking place during the classes. The fourth week of the unit, there were only two school days that observations were taking place due to review and final unit testing.

The second type of data that was collected was qualitative data from student surveys about using the digital devices to collaborate with other students. This data was collected at the end of each week of the Asian literature unit. This student survey was placed on our on-line education site called Schoology. The survey was made in the form of a Google Form, which automatically recorded all results in a spreadsheet. Each student was to log on and take the student survey over the weekend. This survey collected data about what the students were doing during the previous week.

Week one of the survey 128 students took the survey. The first week the survey was assigned produced the most amounts of submissions. Week two had 106 students take the survey. Week three had ninety submissions and week four had ninety-two submissions. The total submissions during all four weeks was 416. The survey was anonymous, so there was no way to track which students took the surveys each week.

The last type of data was qualitative data collected through colleague dialogue. This dialogue was recorded on a form (see Appendix C) each week. The following Monday of each week, I met with my colleague to discuss our data. The form recorded which digital devices was being used, the strengths and weaknesses of each device and suggestions for future use. Since

this communication was held the following Monday of each week, there were four meetings total. These meetings were held after school and were about forty-five to an hour long.

The overall results of the data showed many different points of using the digital devices. From the observations, the results showed that students did collaborate while using both digital devices. The data displays that there were different amounts of collaboration that wasere taking place during the class period. The data showed that the majority of students using both the Chromebooks and the Ipads were collaborating at the beginning of the hour. There were multiple days that all students were collaborating within the first fifteen minutes of the class period. What the data showed, was that the amount of collaboration decreased as the class period continued. And by the end of the hour, the high numbers of students were not collaborating. This data is displayed in Figure 1.

Figure 1 Students not collaborating during Class using Chromebook/Ipads
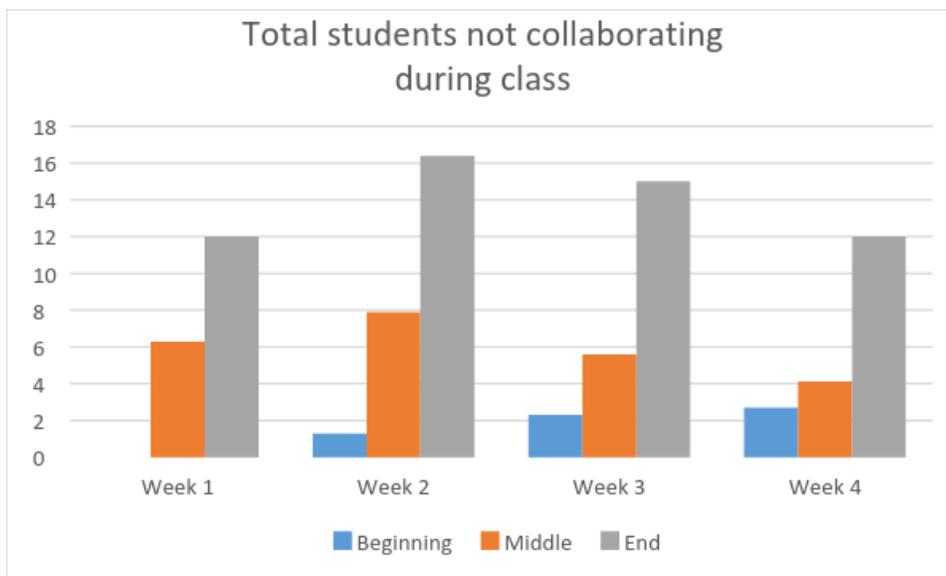
This graph shows the average number of students who were not collaborating during the class periods over the course of the four week unit. This data is displaying the total amount of students, whether they were using the Chromebook or the Ipad. The days where students were not collaborating more towards the end of the hour correlates with the collaboration tool used that the students liked the least.

From the observation data collected, it showed that students collaborated more using the Google Chromebooks over the Apple Ipads. Figures 2 and 3 show the average number of students who were not collaborating while using the digital devices. The data shows that at every time of the class period observations were recorded, students who were using the Ipads were collaborating less than the students who were using the Chromebooks. The biggest difference in collaboration was during the middle of the class periods. More students using the Chromebooks were collaborating over the majority of the hour compared to the students using the Ipads were collaborating mainly at the beginning of the class.

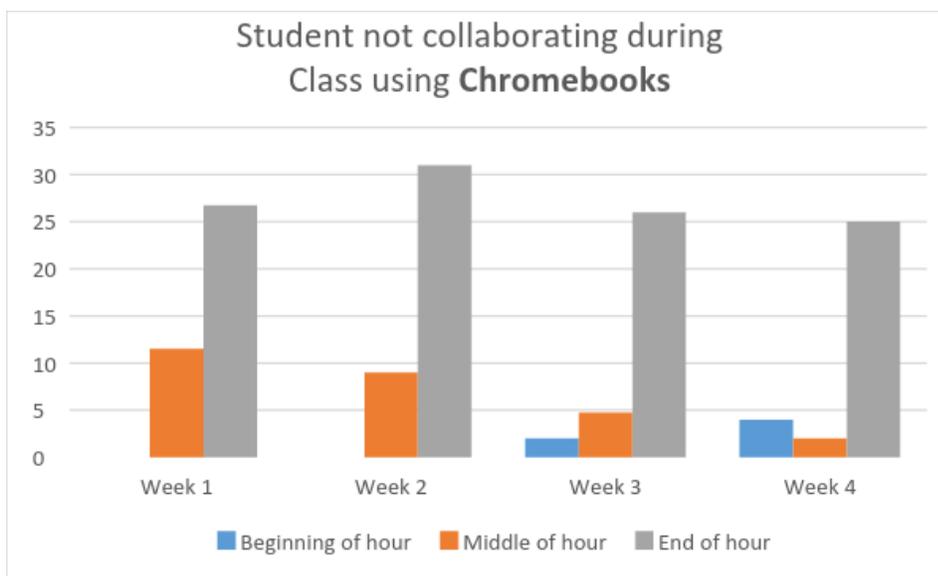Figure 2 Students not collaborating while using Chromebooks

Figure 3 Students not collaborating while using Ipads
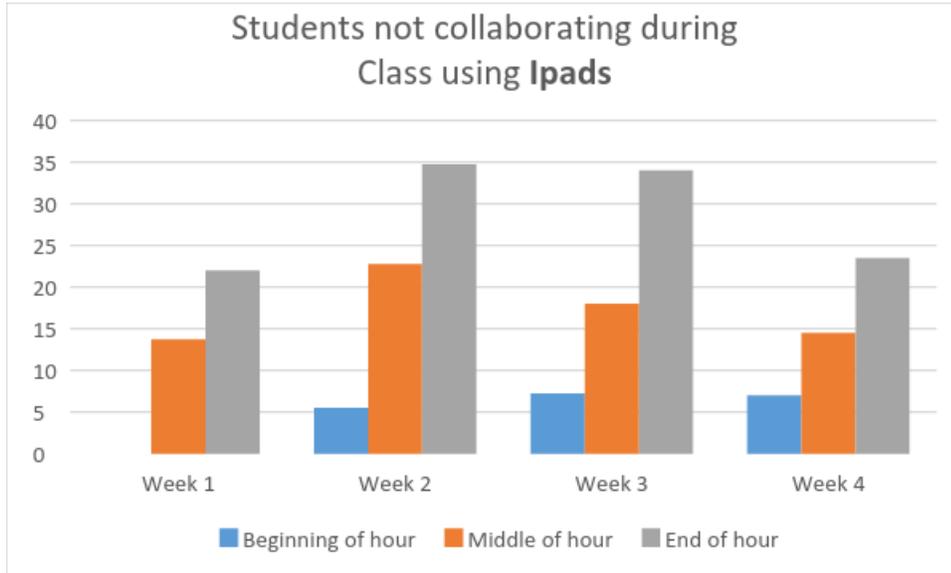
The results from the student survey displayed a variety of information about the students'
preferences. The first piece of data that was collected was which collaboration tool the students
were using. The tools that students had options to use where the Chromebook/Ipads, Schoology,
online discussions, Google Drive, in-class discussion and applications paired with the
Chromebook/Ipads. Figure 4 shows which collaboration tools were used the most by the
students during the class periods. The data shows that students used the Chromebooks/Ipads,
Schoology and in-class discussions the most of the course of the unit. The tools that was used
the least by students was the online discussion tool and applications that are paired with the
digital devices.

Figure 4 Collaboration tools used by students
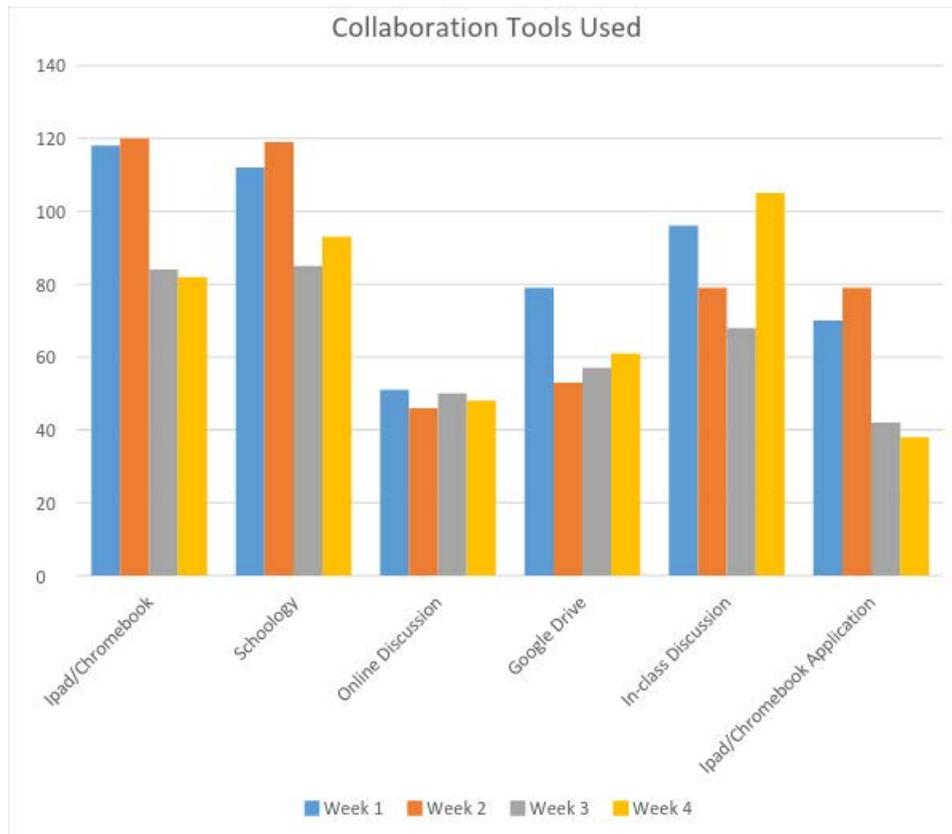
Figure 4 shows that students like using collaboration tools that will help them stay organized and allow them to work with other students in group settings. Both Schoology and in-class discussions are very student centered in being able to see and interact with classmates while working. These are also tools that students can apply to other subject areas of their education.

The surveys not only collected data on the type of collaboration tool the students were using, but the surveys also collected which tools were most helpful to the students learning. Each week the survey asked students which tool helped them the most with their learning. Figure 5 displays the data that Schoology was the best collaboration tool during the four week unit. There were 108 submissions where students stated this tools helped them the most. The tool that was the least helpful for students was the online discussion with only thirty-eight submissions, which directly correlates with why that tool was used the least over the weeks.

Figure 5 Collaboration tools most helpful to students learning
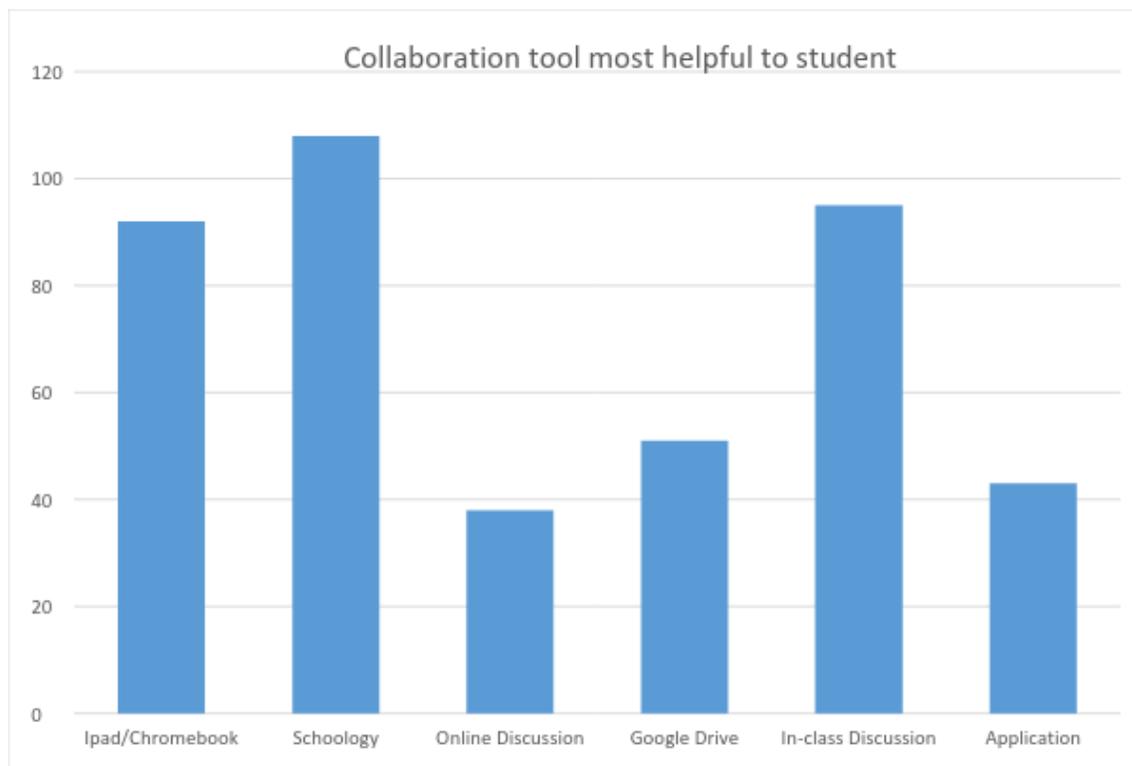
Another piece of data collected with the survey was which collaboration tool best helped students understand the literature. the most. This data presented themes that were present in the submissions. The themes present were research/content, group discussion, thought process, class activity and not helping them learn. There were 118 submissions from the surveys where students stated that the collaboration tools helped them understand the content more because of the access to be able to research the literature. Group discussions had ninety-nine submissions where students expressed they liked talking with classmates about the literature. Ninety-four submissions stated that the collaboration helped them with the thought process of thinking at higher levels and thinking more about the literature they were reading. Only forty-nine submissions stated that the collaboration did not help them at all when learning the literature.

Figure 6 How collaboration tool helped students learn the literature
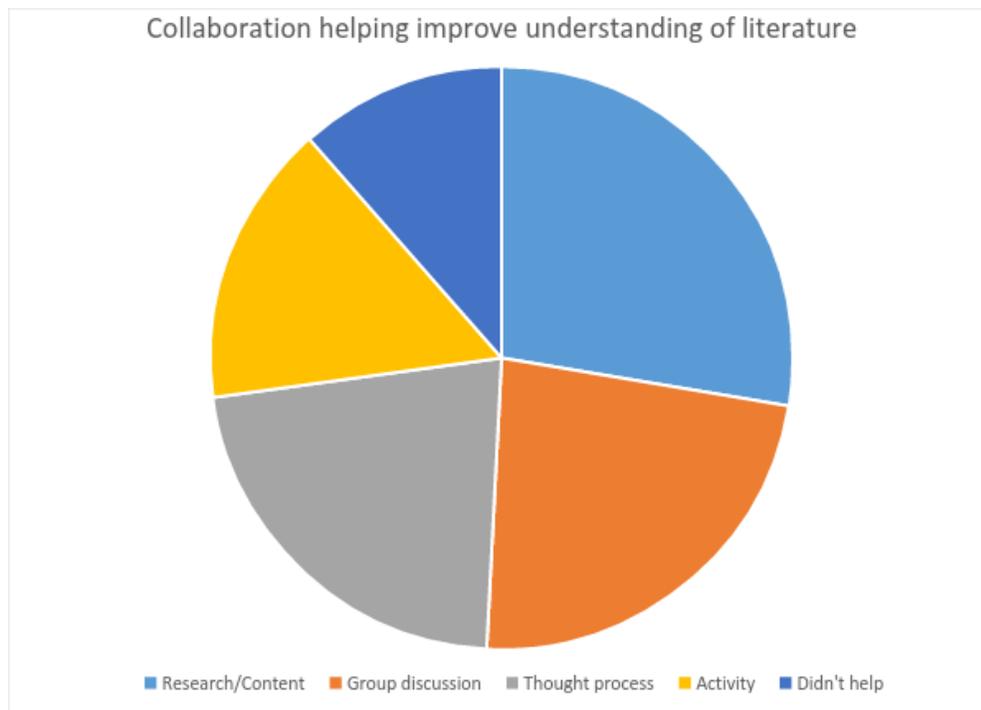
This data directly correlates with data collected about the tools that students like to use when learning. The Chromebooks/Ipads help students research the content and the collaboration of group discussions helped students understand the literature and see different points of view.

The last type of data that was qualitative data collected was through communication with my colleague (see Appendix C). This data showed the strengths and weaknesses of the Google Chromebooks and the Apple Ipads. What was found was that the Chromebook had more strengths than the Ipad. The biggest strength the Chromebook had over the Ipad was the fact that it has a keyboard. Students liked being able to type over using the touch keyboard. It made the use of certain application and online posts easier and quicker for students to complete and saved them time. The next biggest strength the Chromebook has is that it is a Google product and my school has become a Google school. This allowed students to stay organized and keep track of

their material for class. With Google Drive, it allowed students to collaborate more at the same time using different aspect of Google Drive.

When the Chromebook is compared to the Ipad, it has more strengths. The Chromebook is less familiar than the Ipad to the students. It took a longer amount of time for students to learn how to navigate the Chromebook when compared to the Ipad. Students are very used to the touch screen and like the feature about the Ipad. Also, the Ipad has a wider variety of applications that the students know and can use. When my colleague and I were looking for applications, we always started with the Ipad and then tried to find one that was comparable on the Chromebooks. Another nice feature of the Ipad that the Chromebook doesn't have is Apple TV. This allows students to display their work on the screen to look at as a class,unlike the . Where the Chromebook. doesn't allow for this.

The last piece of data that was recorded was the studentsstudents' final scores on their Asian literature unit final. This final test was a fill-in-the-bubble scantron test. It consisted of multiple choice and matching questions. The class that used the Ipads had a class average score of 74% for the unit final, while the classes that used the Chromebook had a class average of 77% on the unit final. This data shows that the Chromebooks did help the students learn and understand the literature more during the unit. This data is also important to analyze because it can be compared to other classes that didn't use digital devices during the unit. This information will also help me continue to adjust and use the Chromebooks in my World Literature classes in the future.

At the end of my analysis, I found that both devices were good for students to use and each had their own strengths to them. Both devices have enhanced student collaboration and helped students learn the content and literature during the Asian unit. When looking at the data

that I have collected, it shows that the device that enhances collaboration more in a World

Literature class is the Google Chromebook. My data also shows that students prefer using

collaboration tools that allow them to stay organized and help them with their learning.

Action Plan

This action research study was about looking at two digital devices to see if they

enhance student collaboration in a World Literature class. After completing my action research

study, it proved that students are collaborating more when given the opportunity to use a

technology device. The data from my study displayed that students enjoy learning and

collaborating when they are using a device. When given the choice between a Google

Chromebook to an Apple Ipad, the study showed students prefered using the Chromebooks to

help them collaborate and learn the content of the class. What this means is that students in

World Literature classes should be using a Google Chromebook in their classes to improve their

learning through collaboration.

A Chromebook allowed students to use the internet to further their research on the

content or answer their questions about the literature. This device also allowed students to use

applications that are available to them to collaborate and discuss the content and literature. The

last aspect that allowed students to collaborate more was by using Google Drive with the Google

Chromebooks. Students were collaborating at the same time and using Google applications to

complete classwork.

The results of this study will change my teaching practice in a number of ways.

The first way is that my lessons will be changing to incorporate the Chromebooks in activities on

a daily basis. This device will also affect my teaching practice since I will be using them in all

of my classes, not only in World Literature. From this study, I know that my ninth graders will

benefit from using this device in my English 9 classes. The Chromebooks allow for differentiation between grade levels with the type of collaboration tool that is paired with them. There are a number of different Google applications that can be used among the different age levels. Some applications require a higher level of thinking and background knowledge, while others are at an introductory level. Some applications are geared more towards younger students, while others are geared toward older students. No matter what the content is or the grade level that I will be teaching, my students will be enhancing their learning through this device.

Another way I will be changing my teaching practice is by making my classes Google classes. I will be able to use the Google applications for my assignments and activities. I will be using Google Forms to incorporate questioning and quizzes in my classes. Students will have the device to allow them to complete these forms online and Google will keep me organized. My school is currently transitioning into becoming a Google school and students are just learning about Google Drive and the applications. These Chromebooks will allow my students to improve their knowledge and skill of using Google and apply it to all of their classes. Students will be very familiar with this technology and be prepared for the next levels of their education when they are finished with my class.

The last way this study will impact my teaching practice is through pairing the Chromebooks with our online learning website Schoology. When using the Chromebooks in class, students will have the access to Schoology to complete activities and assignments I have on my class site. Schoology will also allow students the freedom to ask questions or give their opinions in an online format.

I believe that this study will have an impact on a student's learning. Students will be using technology in every level of their education and through their entire life in society. By

knowing that Google Chromebooks will enhance collaboration in a classroom, and will allow students to have the opportunity to perform better, and learn more in their classes. This applications pared with this device will also teach them to stay organized with their work. This type of device allows students to take responsibility for their learning and use the devices according to their learning style. The Chromebooks will allow students to differentiate to what they need when learning and participating in class. This study proved that this device should be used in 21st century classes.

My action research study was done with 12th grade students in a World Literature class. I think this study allows for future investigation. It would be beneficial to bring the Chromebooks and Ipads into other areas of content to see if they would enhance collaboration in other classes. One of the aspects that students liked about the Chromebooks in an English class,class was that there was a keyboard to allow them to type. This is just one piece that made it easier for them to collaborate and learn in this subject area. These devices worked in an English class, but what other classes and content will they be aeffective in? Would the outcomes change just because of the content.? I think it would be important to know which device to pair with which subject area. This future investigation would tell teachers what type of technology devices they should be using in their subject area.

There is also future investigation potential with different grade levels. I know that I can use the Chromebooks with my 12th graders and my ninth graders because of the differentiation they allow. Are there other devices that could be compared to the Chromebook that would work better for younger students?

This study will affect and benefit English teachers by allowing them to know what device will enhance students' collaboration and learning at a high school level. This study will also

affect teachers by showing that Google is an important tool in a students' learning. Not only will teachers benefit from this study, but it will also contribute to my school. My principal will be purchasing more technology devices because of the data that was collected from my study. All of this ultimately affects the students by getting more devices in the schools and into their hands to enhance collaboration and their learning.

After reviewing my data, there were some questions and downsides that my project brought up. When using the digital devices in the classroom, there were times where the network was not working. This was very frustrating and hard to deal with. Students couldn't access applications and websites that were needed for the activities. This was a hard adjustment to make while students were learning how to navigate the devices. One question I have that my research didn't tell me was if my students were using the tools from my class in other subject area classes. I would have liked to know if they were transferring the skills they were learning in my class to other classes.

Abstract

The purpose of this study was to investigate which digital device, Chromebook or Ipad, enhanced student collaboration in a classroom. This study was done in a public high school, in four World Literature classes with 135 twelfth grade students. The data was collected through classroom observations, student surveys, collegial communication and a unit test. The results proved that students liked working with the Chromebook more than the Ipad to learn the content and literature of the class. The Chromebook was easily paired with tools and applications to enhance student collaboration. This study proved that classes should be using Chromebooks to enhance student collaboration and teach content. This study shows that digital

devices enhance collaboration, help teach the content and skills that students need to be in a 21st century classroom.

References

Compass learning; compass learning puts digital content into hands of more students with

google

chromebooks. (2013). *Education Letter,* , 52. Retrieved from

http://search.proquest.com/docview/1328122798?accountid=26879

Google. (2012). 1two1 initiative prepares richland school district two students and

teachers for

the future. *Case Study*, Retrieved from,

https://docs.google.com/file/d/0B__OTXR_u3RbZHl0Y3dtdVpwLWs/edit?pli=1

Google. (2012). Hartford High School's Digital History Class: Where Creativity and

Chromebooks Rule. *Case Study,* Retrieved from,

https://docs.google.com/a/stkate.edu/file/d/0B__OTXR_u3RbclVVcUE2R0tjbUk/edit?pl

=1

Google Chromebooks a worthwhile option for students. (2014, Jan 24). *University Wire*.

Retrieved from http://search.proquest.com/docview/1491391182?accountid=26879

Hall, C., Orr, M. J., & Swensen, D. R. (2012). Integrating technology into the classroom

via

chromebooks using preservice teachers as community collaborators. *University of Idaho*,

Hoffman, A. A. (2013). Students' perceptions of on-task behavior and classroom

engagement in

a 1:1 iPad school. *English Leadership Quarterly, 36*(2), 9-18. Retrieved from

http://search.proquest.com/docview/1437952631?accountid=26879

McHugh, J. (n.d.). Retrieved from http://www.edutopia.org/ikid-digital-learner

Miller, W. (2012). iTeaching and learning. *Library Technology Reports, 48*(8), 54-59. Retrieved

from http://search.proquest.com/docview/1261087942?accountid=26879

Research Center: Technology in Education. (n.d.). Retrieved from

http://www.edweek.org/ew/issues/technology-in-education/

Saine, P. (2012). iPods, iPads, and the SMARTBoard: Transforming literacy instruction and

student learning. *New England Reading Association Journal, 47*(2), 74-79,81. Retrieved

from http://search.proquest.com/docview/940889699?accountid=26879

Watters, A. (2012). To have and have not. *School Library Journal, 58*(5), 34. Retrieved

from

http://search.proquest.com/docview/1009901907?accountid=26879

Appendix A

Classroom Observation Form

Date	15 Minute intervals	Collaboration Type	Observation Notes
	Beginning Middle End	**Group/Online/Verbal/App**	
	Beginning Middle End	**Group/Online/Verbal/App**	
	Beginning Middle End	**Group/Online/Verbal/App**	
	Beginning Middle End	**Group/Online/Verbal/App**	
	Beginning Middle End	**Group/Online/Verbal/App**	
	Beginning Middle End	**Group/Online/Verbal/App**	
	Beginning Middle End	**Group/Online/Verbal/App**	
	Beginning Middle End	**Group/Online/Verbal/App**	

Appendix B

Student Questionnaire

1.   Who is your current instructor?
a.   Mrs. Janitschke
b.   Mrs. Krueger

2.   Which digital device are you using in your World Literature class?
a.   Chromebook
b.   iPad

3.   What do you enjoy the most about using a Chromebook/iPad? Why?

4.   Has collaboration through your digital device helped you understand the literature more?

5.   Which of the following tools did you use to facilitate your learning this week? Check all boxes that apply.
a.   iPad/Chromebook
b.   Schoology
c.   MindMup
d.   Voice Thread
e.   Phone
f.   Google Drive

6.   Then, of all the ways you tried to get work done this week, which was the most helpful for your learning?

7.   What else would you like your instructor to know, if anything?

Appendix C

Colleague Dialogue Form

Date	Digital Device used	Strength	Weakness	Suggestion for future use