

The effect of teaching vocabulary using a digital media and traditional methods on
student's academic performance in 11th grade literature class

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Abstract

The purpose of this study was to examine the effects of teaching vocabulary using digital media and traditional methods on student's academic performance in an eleventh-grade literature class. The sample consisted of 34 eleventh grade English students; 20 males and 14 females. Data were collected using two English sections of ACT test. Students studied vocabulary for the first section using digital method while they used traditional method for the second section. Data were analyzed using paired samples t-test and independent samples t-test. Results revealed no significant difference was found between scores when students studied using digital methods or traditional methods. In addition, no significant difference was found between the scores of male students and female students when studying using digital methods or traditional methods. Results suggest that teaching vocabulary using digital media and traditional methods did not have any significant difference on academic performance.

Keywords: ACT, academic performance, digital methods, traditional methods, vocabulary

Chapter 1

Introduction

Vocabulary has been shown to have importance in academic success a multitude of times. According to “Enhancing Vocabulary Development in Multiple Classroom Contexts” in *Middle School Journal*, “children in grades 5-9 must learn approximately 3,000 words per year to keep abreast of required tasks.” (Harmon & Staton, 1999, p. 30). This is a quantitative study based on the outcomes from each study methodology. The authors suggest that vocabulary be learned through multiple oral and written contexts. The Harmon and Staton study displays the importance of studying vocabulary because of its wide use in academia.

Steckel and Shinas’ (2016) article “it’s not the tools... It’s the teaching: tips for technology-integrated vocabulary instruction demonstrated that using technology to teach vocabulary has positive outcomes. The study was qualitative and based on the observation in multiple classrooms. One used technology to help students get an understanding deeper than simply definition. Another classroom used technology to guide students in reading e-books and creating their own books. The study states that students learn vocabulary best by learning and practicing it through reading, writing, listening, speaking, and viewing.

A different study furthered the previous one by relying on numbers to prove their assertions. S. Huang (2015) conducted the study, “Mixed-Method Research on Learning Vocabulary through Technology Reveals Vocabulary Growth in Second-Grade Students.” This is a quantitative study using a control group and an experimental group. The findings reported were that the experimental group, which used technology to learn vocabulary, was found to be more engaged in learning the vocabulary. Additionally, this

group showed growth between the pre-test and post-test, whereas the control group showed no growth

Though some studies have been conducted on the use of technology to learn vocabulary for elementary-aged students, there is not many statistics on how technology effects upper-classmen. Steckel and Shinas state, “using digital tools in the classroom allows students many opportunities to practice new vocabulary in meaningful and authentic ways” (2016, p.2). The authors’ study is done in fourth grade and kindergarten and shows the importance of vocabulary and the success technology has in teaching it to these students. This research leads to the question: how does the use of technology when teaching vocabulary to high schoolers, effect their scores? This study will take an in-depth look at that question, among others.

Problem Statement

It is well-known that vocabulary is an essential skill for the short-term and long-term success of students. For a long time, there was not much variation in how vocabulary was taught, but the advent of technology brought new opportunities to this area of academics. Technology has been shown to have positive outcomes on vocabulary scores when used with elementary students. However, there has not been many studies or statistics in whether technology helps improve vocabulary learning in secondary students. Therefore, the problem of this study was to determine if using technology when teaching vocabulary had a positive effect on performance in an eleventh-grade literature class compared to traditional methods.

Purpose Statement

The purpose of this study was to examine the effects of teaching vocabulary using digital media and traditional methods on student's academic performance in an eleventh-grade literature class.

Significance

The current literature indicates a positive correlation between technology use when teaching vocabulary and higher scores (Harmon & Staton, 1999; Veronica UP, Nuraningsih, & Astuti, 2018; Steckel & Shinas, 2016; Huang, 2015). Therefore, because technology has been shown to have this positive link in the younger grades, it is important to seek whether this trend follows into secondary education.

Limitations

1. The sample was not randomly selected and because of this, the results cannot be generalized for use on other settings.
2. Instruments used collect to data not tested for validity and reliability.

Definitions of Terms

ACT: American College Testing. This is how student's achievement and growth will be marked

Academic Performance: The extent to which a student has achieved the short-term or long-term goals.

Digital Media: Any media that encoded in machine readable formats.

Literature Class: Students do reading at home and discuss and connect to current events in class.

Scores: These will be based on mini ACT (American College Testing). Vocabulary is an essential part of these tests and students will take these after learning a unit of words.

Traditional Teaching: Directing students to learn through memorization and recitation techniques. Does not develop critical thinking skills.

Vocabulary: Words that need to be taught to keep students abreast of curriculum and work. For this study, these will specifically be academic words that are important for the ACT test.

Overview of Study

The purpose of this study was to examine the effects of teaching vocabulary using digital media and traditional methods on student's academic performance in eleventh-grade literature class. This thesis comprises five chapters. Chapter one contains the introduction, the problem statement, the purpose statement, significance, limitations, definitions, and an overview of the study. Chapter two consists of a critical review of the literature. Chapter three consists of research methods used in the study. Chapter four consists of the findings of the study. Chapter five, the final chapter, contains a brief review of the study, a summary of the findings, a discussion of the findings, conclusions, and recommendations for future study.

Chapter 2 Review of Literature

Introduction

This chapter will look at all the writings that have been done on this topic. Teaching vocabulary is a topic that is important to many people, thus there is much writing about it. This chapter will look at vocabulary, technology in schools, gender differences, ACT, teaching vocabulary with technology, teaching vocabulary using traditional methods, and a conclusion.

Vocabulary

It is a well-known fact that vocabulary is vital for a student's success in English Literature Arts (ELA) classes and across the curriculum. The English language consists of over 5 million words (Asselin, 2002). If a student were to learn all these words between kindergarten and twelfth grade, the student would have to learn 384,615 words per year, which translates to 2,136 per school day. Many words are learned prior to schooling, or outside of school, but it is the school's responsibility to do much of the vocabulary teaching. There are numerous reasons to learn vocabulary; "conventional wisdom tells us that vocabulary knowledge builds self-esteem and confidence. Research and theory tell us also that vocabulary knowledge: promotes fluency, boosts comprehension, improves achievement, enhance thinking and communication" (Bromley, 2004, p.3-4). Beyond achieving academic success, learning vocabulary can lead to social gains as well. Building self-esteem and confidence in students is essential, especially at the secondary level. Teaching vocabulary is one way to help construct these characteristics while building on their academic gains as well. According to *A Review on the Important Role of Vocabulary Knowledge in Reading*

Comprehension Performance Receiving and attaining a myriad of words to build a library is critical in order for the learner to be successful in any given context (Moghadam & Zainal & Ghaderpur, 2012). This “given context” can span from mathematics to literature to science and even to physical education. This restates the importance of vocabulary for more than an English class. *Prologue to the Forum: Across the School Grades* states that vocabulary and the knowledge of it is vital to both spoken and written communication and thus, it is also critical to a student’s academic progress (Adlof, 2019). Though vocabulary can span beyond simply an English classroom, it is most vital for academic success. Every subject uses one or more of these: spoken or written communication. Further, every career uses one or more of these which demonstrates the fact that vocabulary is vital for success in education and beyond. An article about vocabulary in mathematics states that if someone has a lack of knowledge of vocabulary this can negatively affect their learning (Dunston & Tyminski, 2013). This illustrates the fact that vocabulary is important beyond ELA classrooms. The importance of vocabulary is obviously major, but with various ways to teach it, it is hard to determine what is the most successful.

There are many ways to teach vocabulary. This is for a number of reasons. There a variety of learners: visual, kinesthetic, auditory, etc. As teachers we must strive to teach to all types of learners. “Twenty Ways to Teach Vocabulary” states that “vocabulary programs are best when they ‘(1) facilitate wide reading, (2) teach individuals words, (3) provide word-learning strategies, and (4) foster word consciousness’” (Hoskins & Vannest, 2010, p. 1). This illustrates that there are multiple components to teaching vocabulary. Students must always be reading, they need to

learn single words, there must be strategies in place to help these students learn, and students must have a knowledge about these words. These strategies must be in state from a young age. If these are instituted from the beginning of a student's education, they are more likely to succeed with these skills throughout their education and beyond, into their careers.

This same article looks at twenty specific ways to assist in this learning. These include "Word of the Day" in which a student monitors the use of a predetermined word throughout the lesson. This facilitates auditory learners and physical learning by marking down the repetition. Another way is a "Word Wall". This assists in both spelling and sounding out the words. A third way is word journals. Students note unfamiliar words as they read. This gives them the opportunity to make connections with these words in their readings. A fourth way is word parts. This is important because it teaches students the morphology of words which they can use to then understand future words. Another way is called "word sort". With this, students categorize words by characteristics which help students learn the parts of the words, much like in the previous vocabulary learning tip. A sixth way is crossword puzzles. These are a fun way for students to learn new words. The other strategies that the article suggests include vocab-o-grams, visualization and drawing, knowledge rating, semantic maps, synonyms and antonyms, vocabulary self collection, semantic feature analysis, the frayer model, concept circles, vocabulary read aloud, word square, vocabulary cards, vocabulary chart, and KWL charts. The variety of methods shown here creates a myriad of ways to teach students vocabulary, and can be applied to a variety of learners. The Frayer Model may be the best of these because it can be used to teach simple vocabulary

words and more complex ones. The Frayer model includes seven steps: “1.) state the word and its characteristics; 2.) purge unrelated characteristics (say what the term is not); 3.) list examples; 4.) list non-examples; 5-7.) list subordinate, superordinate, and coordinate words” (Hoskins & Vannest, 2010, p. 3). Another example that can be used in not only elementary schools but secondary as well is the KWL chart. This has students list what they know, what they want to know, and what they learned. This helps students keep track of the progress they have made and keep them yearning to know more. According to the article “Teaching Vocabulary” there are four elements to an effective vocabulary program: “wide or extensive independent reading to expand word knowledge, instruction in specific words to enhance comprehension of texts containing those words, instruction in independent word learning strategies, and word consciousness word-play activities to motivate and enhance learning” (Diamond & Gutlohn, 2006, p. 1). Reading has been cited extensively as a vital component to effective teaching of vocabulary. It can be difficult to find a vocabulary program that fits all of these elements, but using technology to do has proven to be successful.

One study, “Teaching Vocabulary within the Context of Literature”, provided a strategy to teach vocabulary in secondary education. The conclusion of the study states students can be taught specific strategies to identify words and then learn those words within a context (Dole, Sloan, & Trathen, 1995, p. 460). This can be applied in elementary school as well, however, there tends to be more difficulty in teaching vocabulary to secondary students and this is an exemplary way to do this. There are many varied ways to teach vocabulary and looking at the “effects on vocabulary learning [with] the implementation of differentiated instruction” is important (Alavinia,

2012, p. 72). No two students learn the same way and therefore it is important to keep this in mind as an educator when teaching all concepts.

Technology in Schools

The twenty-first century has been a time that is fuelled by technology. It is stated that for half a century computer technologies have been evolving (Mayrath, 2011). These new technologies have progressed so much that they are essential to much of the academic progress that students are required to achieve. Students who are in school now are constantly surrounded by technology, however, just one generation before this, students would have had no access to such items. Instead of having to mire through libraries to find information, students have access to the same information and more in a matter of seconds because of technology. This is so true that modern students are considered digital natives (Harrell & Bynum, 2018). Our current students know no different than the instant access to a plethora of information. There are, of course, the items that make technology in school difficult. These include such things as “poor infrastructure, inadequate technology, lack of sufficient technological tools, effective professional development (external factors), low teacher self efficacy and teacher perceptions (internal factors) that affect technology integration in PK-12 schools” (Harrell & Bynum, 2018, p. 1). However, when possible, technology has positive effects on student learning. One article states that students must have opportunities in the classroom to use technology in order to foster and support critical thinking skills (Merkley, Schmidt & Allen, 2001). This demonstrates the fact that technology in the classroom promotes skills that are already taught: critical thinking and reasoning. Teachers are now simply using the materials available to them and their

students. Additionally, this illustrates that technology helps to grow the student's critical thinking skills that are vital. In 2008, forty percent of teachers in a study reported that they or their students used computers in the classroom during instructional time (Gray, Thomas & Lewis, 2010). This is a large percentage of teachers and students using technology, and mostly likely this number has only grown in the time between then and now.

These various studies state the importance of technology in school, though it is noted that there are gaps. These gaps are a "usage gap" and an "outcome gap" (Lim, Zhao, Tondeur, Chi, & Tsai, 2013, p. 59). There are still aspects that we need to overcome in order to truly achieve success. Not everyone uses the technology available to them and we are still working on how to get the best outcomes from using this technology. In addition to this, there are those who question "will all this technology improve education for large numbers of students? Will it make our education systems more effective and efficient? Will it help schools better prepare students for their lives in the 21st century?" (Kleiman, 2001, p.1) There are numerous positives to technology in school, but people still question its effectiveness. Despite these "certain perceived risks and observed problems with regard to youth online [that] underlie educator's attitudes toward pervasive technologies in formal learning settings, educators, researchers, and designers must work together to increase understanding of the youth experience with pervasive computing technologies and provide greater access to these systems and applications in the formal schooling context" (Cramer & Hayes, 2010, p. 37). This article demonstrates the fact that though there are obstacles to having technology in education, it is vital for the success of the students.

The article “Integrating Technology into the Classroom: Eight Keys to Success” states there is one often overlooked element to the success of technology in the classroom: the teacher (Bitner & Bitner, 2002, p.1). One major element in teaching is modeling and this connects to the use of technology as well. Teachers must not only model the standards, but also their excitement about what is being taught. If the teacher acts as though they are excited to talk about what is being discussed and learned, the students are more likely to be excited as well. In addition to modeling, it is the teachers that decide for the most part when technology is to be used in their classroom. If the teacher seldom uses technology, students are less likely to be successful with it, and therefore technology would not seem to be vital to the students academics. Teachers must use technology on a regular basis to see the real effects it has on the academic success of the student.

Gender Differences

During their education boys and girls face many different expectations. It is stated that girls tend to be more successful throughout their academic career though this can vary greatly (Sanford, 2011). There are inequalities between the genders in education which can have a detriment on the student’s learning (Sanford, 2011). Boys and girls are introduced to and learn topics in different ways. It is the goal of this study to see if teaching vocabulary using technology has a greater effect on boys or girls, or if a difference can be seen between these two.

ACT

The American College Test, or ACT, is a college entrance exam that is used by most colleges and universities. The exam consists of four sections: English, Math,

Reading, and Science. In addition to this being a college entrance exam, Tennessee also requires this as a high school exit exam. Tennessee's average score on the ACT in 2018 was 19.6 out of 36 which places them 40th in the nation. The average score nationwide was 20.8 out of 36. These types of tests are used by almost everyone: colleges, schools, and employers (McClelland, 1973). Though many people protest the ACT or similar exams such as the SAT, it is still widely used and relied upon. The ACT is necessary for every high school graduate in Tennessee to take and the scores are looked at as being extremely important.

Teaching vocabulary with technology

Students in secondary education deal with vocabulary that is abstract in nature, complex, dense, and technical (Fang, 2011) thus leading to the need for a better way to teach this language. As stated before, technology is a vital piece of today's educational tools. The chapter of *Applied linguistics for the 21st century* "Millennialism and media: language, literacy, and technology in the 21st century" states that "online media [is] helping to transform language and literacy, and this has important consequences for language teaching" One study uses the mobile game "Clash of Clans" to grow vocabulary (Veronica, Numaningsih, & Astuti, 2018, p. 7). The students in this context are learning English as a second language. The study looked at fourth grade students, who at the end had progressed significantly in their vocabulary learning, demonstrating the effectiveness of using technological games to teach vocabulary.

Another article suggests video technology to teach vocabulary (Foil & Alber, 2002, p.134-135). A study was done by Xin, Glaser, and Rieth began with ten students and thirty vocabulary words. These words were associated with things on the video

tapes. The students took part in activities that further connected these words with the content in the videos. After six weeks, students were able to give the correct meaning of sixty percent of the words compared to twenty-seven percent when the videos were not used.

An interesting study looked at “Gamified Vocabulary”. The study found that “not only did students enjoy the adaptive and independent practices associated with a gamified approach to learning vocabulary, they also became more aware of their own word knowledge and developed a nuanced understanding of language” (Abrams and Walsh, 2014, p.1). This study shows clear results that support the claim that technology has a positive effect on students learning vocabulary. Throughout education teachers must make learning enjoyable in order to truly gain achievements with the students. People are more likely to learn and remember what they learned when they enjoyed learning it.

There has been numerous studies on vocabulary and the use of technology with vocabulary; “research on good vocabulary learning suggests that to develop vocabulary knowledge it takes: a word rich environment; active, motivated engagement on the part of the learner; multiple exposures to and ways to access words and both contextual and definitional information about words; and the development of independent words learning strategies” (Blachocicz, Beyersdorfer & Fisher, 2006, p. 34). Using technology with vocabulary lends itself to multiple exposures as well as independent learning strategies. Students will be able to recognize these words not only on technology but also in the books they are reading, the tests they are taking, etc. Additionally, they are able to independently work on these words at various times. Using technology to teach

vocabulary fulfills the requirements of successfully teaching vocabulary and based on the studies, it does it in an enjoyable way for the students.

Conclusion

Vocabulary is a significant part of a student's education. There are a plethora of words in the English language that the student must learn and master throughout their schooling. Technology has been a major player in education over the past couple of decades. Technology is a fairly new development in education but has proven to have a positive effect on the overall academic achievement of students. There are many different ways to teach vocabulary, but most agree that it must be constant and enjoyable for the student. Using technology to teach vocabulary fulfills these requirements and has proven to be successful for the student's academics. Additionally, vocabulary is an important piece of the ACT that every student in Tennessee must take. It will be of note in this study whether there is a difference in achievement between boys and girls when using digital media.

Ch. 3

Methodology and Procedures

The purpose of this study was to examine the effects of teaching vocabulary using digital media and traditional methods on a student's academic performance in eleventh grade literature class. Students' grades for the English section of the ACT test, which functioned as their vocabulary score, was evaluated after studying a group of words using traditional methods. Then students' scores were evaluated and compared when students studied words using technology. These were compared to see if there is a correlation between higher scores on the ACT and studying using technology. This chapter explains the population, sampling procedures, data collection procedures, and research questions.

Population

This research took place in a city high school in Northeast Tennessee. The school had 2,235 students enrolled in grades 9-12. The ethnic demographic breakdown of the school was 75% white, 12% African American, 8% Hispanic, and 2% Asian. The remaining students identified as "other" in race. 40.8% of the students were recipients of free or discounted lunch. The student to teacher ratio is 16

Participants

The participants of this study consisted of three eleventh grade English class totaling sixty-four students. Of these sixty-four students, thirty-four were given permission from parents or guardians to participate in the study. Twenty students were male and fourteen were female. Of the participants, thirty students were white, three were African American, and one was Hispanic. The ability level between the students varied. Two students had IEPs. The students

were between the ages of sixteen and eighteen. The participants were not randomly selected, as the researcher had already been assigned to this class.

Data Collection Instruments

Data were collected from students' grades, which consisted of two tests on vocabulary. In addition, the researcher observed the students each day as they were given approximately ten to fifteen minutes at the beginning of every class to study vocabulary. The eighteen-week term was divided into two nine-week quarters and the students studied vocabulary for the entirety of this, mostly using technology. Lesson materials covered American Literature from Puritan times to the Modernist era. The first half of the second nine-week period covered the Transcendentalism era, looking at such authors as Henry David Thoreau and Herman Melville. The second half of the nine-week period covered the American Modernist era and works by T.S. Elliot, Ezra Pound, William Faulkner, and Kate Chopin. Through each literary unit students studied vocabulary and were regularly tested on it. A grade is assigned to both their progress on studying the vocabulary words and the score they get on the test.

Procedures

Permission was granted from the principal of the school to conduct this study. The researcher has also been granted permission from Milligan College. Permission slips were also sent home in order for the students to be able to participate in the study. After receiving appropriate permission, the study was conducted using two different sets of vocabulary words at complementary difficulty levels. These classes were block-schedule, which means that each class is ninety minutes long and after eighteen weeks, the class is concluded.

The participants consisted of three eleventh grade classes and permission were granted for thirty-four students to participate. Twenty students were male and fourteen were female and two students had IEPs. This research began during the Modernism unit. Students were given one set of words to study using index cards and then they were tested. The students were then given another set of words and studied online via vocabulary.com, they were then tested on these words. After completing these the researcher compared and contrasted the grades for the two vocabulary tests. The researcher examined the data to determine if there was a correlation between using technology to study vocabulary and student achievement on the ACT.

Research Questions and Hypotheses

Research Question 1: Is there a difference in student performance when they are taught using digital media and traditional methods?

Hypothesis 1: There is a difference in student performance when students are taught using digital media and traditional methods.

Null Hypothesis 1: There is not a difference in student performance when students are taught using digital media and traditional methods.

Research Question 2: Is there a difference in gender performance when they are taught on digital media?

Hypothesis 2: There is a difference in gender performance when students are taught on digital media.

Null Hypothesis 2: There is no difference in gender performance when students are taught on digital media.

Chapter 4

Results

Introduction

The purpose of this study was to examine the effects of teaching vocabulary using digital media and traditional methods on student's academic performance in an eleventh-grade literature class.

Data Collection

The data for this research were collected during three separate days, approximately two weeks apart, during the student's regular English Language Arts class. Data were collected from a sample that consisted of 25 students in a regular English Language Arts class on three separate days. This sample came from the population of 2,235 students enrolled at Science Hill High School. The tests were from previous year's ACT tests. The words were from a list of the most necessary words to know for the ACT. The test was administered on paper and students bubbled their responses to best simulate the actual ACT. Once the students took their tests they were graded and input into a worksheet to analyze.

Research Questions and Related Hypotheses

There were three research questions used to guide this study. The first used a Paired Sample t-Test to inform the analysis

Research Question 1

RQ 1: Is there a difference in student performance when using a digital media and traditional methods?

Hypothesis 1: There is a difference in student performance when using a digital media and traditional methods

Null Hypothesis 1: There is not a difference in student performance when using a digital media and traditional methods.

Paired samples t-test comparing the scores using digital media to study and traditional methods was conducted. No significant difference between the means of using digital media and traditional media ($t(24)=.774, p>.05$) was found. The means for using digital media was not significantly different ($M=42.92, sd=15.44$) than the mean for traditional methods ($M=41.56, sd=11.52$). The results are displayed in Table 1.

Table 1

Paired sample t-test for Digital Media and Traditional Methods

Variable	<i>M</i>	<i>SD</i>	<i>df</i>	<i>t</i>	<i>p</i>
Digital	42.92	15.44	24	.774	.446
Media					
Traditional	41.56	11.56			
Methods					

Note. $P >.05$

Research Question 2

RQ 2: Is there a difference in gender performance when students are taught in digital media?

Hypothesis 2: There is a difference in gender performance when students are taught using digital media.

Null Hypothesis 2: There is not a difference in gender performance when students are taught using digital media.

An independent-samples t-test comparing the mean scores of males and females on ACT tests which they studied for using digital media was conducted. Leven's test for equality of variances indicated that variances were assumed equal. No significant difference between the means of the two groups ($t(18.09) = -0.81, p > .05$) was found. The mean for males was not significantly higher ($M=44.75, sd= 16.05$) than the mean for the females ($M= 39.67, sd= 14.62$). The results are displayed in Table 2.

Table 2

Independent Samples t- test on ACT Scores Studied For With Digital Media

Gender	<i>M</i>	<i>SD</i>	<i>df</i>	<i>t</i>	<i>p</i>
Females	39.67	24.62	23	-.81	.441
Males	44.75	16.05			

Note. $P > .05$

Research Question 3

RQ 3: Is there a difference in gender performance when students are taught using traditional methods?

Hypothesis 3: There is a difference in gender performance when students are taught using traditional methods.

Null Hypothesis 3: There is not a difference in gender performance when students are taught using traditional methods.

An independent- samples t-test comparing the mean scores of males and females on scores when using traditional methods to study was conducted. Levene's test for equality of variances indicated that variances were assumed equal. No significant difference between the means of the two groups ($t(20.79) = -.62, p > .05$) was found. The mean for the males was not significantly higher ($M = 42.56, sd = 12.67$) than the mean for the females ($M = 39.78, sd = 9.56$). The results are displayed in Table 3.

Table 3

Independent- Samples t-test on Using Traditional Methods To Study

Gender	<i>M</i>	<i>SD</i>	<i>df</i>	<i>t</i>	<i>p</i>
Female	39.78	9.56	23	-.62	.35
Males	42.56	12.67			

Note. $P > .05$

Chapter 5

Findings, Recommendations, and Implications

Summary of Findings

This chapter is comprised of a summary of the findings that came from the research, a conclusion, recommendations for further research, and implications that came from this study. This study's purpose was to examine the effects of teaching vocabulary using digital media and traditional methods on student's academic performance in an eleventh-grade literature class.

The first research question, "Is there a difference in student performance when using a digital media and traditional methods?" was analyzed using a paired t-test. The results indicated that the students' academic performance did not significantly differ while using digital media or traditional methods to study vocabulary ($P = .446$). Thus, the null hypothesis that there is not a difference in student performance when using a digital media and traditional methods was retained. The results are not found to be consistent with current literature that suggests studying vocabulary with digital media can make a significant difference in the academic success of students (Abrams and Walsh, 2014). This study stated that students became more aware of their own learning and a deeper understanding of the language when using technology. In Abram's and Walsh's' study, the students used a "gamified-approach". It is possible that the students in this paper's study did not have the same result because the technology used was less like a game. No participant suffered any dramatic drop in overall academic performance when using digital media or traditional methods to study vocabulary.

The second research question, “Is there a difference in gender performance when students are taught in digital media?” was analyzed using an independent-samples t-test. The results indicated that no significant difference was found between the performance of genders on the English section of the ACT when they used digital media to study vocabulary ($P = .441$). Thus, the null hypothesis that there is not a difference in gender performance when students are taught using digital media was retained. This is inconsistent with current literature that states girls tend to be more successful academically than boys (Sanford, 2011). Sanford states that girls and boys are taught and learn differently and that there are inequalities between genders in learning. There is not a gap between genders in this study, which shows that technology helps to close the gap between the genders.

The third research question, “Is there a difference in gender performance when students are taught using traditional methods?” was analyzed using an independent-samples t-test. The results indicated that no significant difference was found between the performance of genders on the English section of the ACT when they used traditional methods to study vocabulary ($P = .35$). This is inconsistent with current literature that states girls tend to be more successful academically than boys (Sanford, 2011). Again, Sanford states that there is a significant gap between the performance of boys and girls academically; however, this study shows otherwise. The third research question again shows that technology helps to close the gaps between boys and girls academically. Student performance on the English section of the ACT did improve over the semester, but differences in how they studied vocabulary to prepare for this test did not seem to have any consequence on their academic success.

Conclusion

The purpose of this study was to examine the effects of teaching vocabulary using digital media and traditional methods on student's academic performance in an eleventh-grade literature class. Results of the various tests indicated teaching vocabulary using digital media and traditional methods did not have any significant difference on academic performance. In addition, there was no significant difference found between the two gender's academic performance when studying with digital media or traditional methods. The null hypothesis was retained for all three research questions. Since this study did not find any significant results technology did not prove to be beneficial to teach these students vocabulary.

Recommendations For Further Study

1. This study should be replicated with a larger research group. This would expand the numbers use and perhaps show more information. The study could be done with multiple classes or across an entire school district.
2. This study should be replicated using two different groups. At the same time, group one would get a group of words and study using digital media. Group two would get the same group of words and study using traditional methods. This would mean that there would be a true experimental design with randomly selected participants. The results would then be compared. This would more accurately compare the two methods.

Recommendations For Practice

1. Teachers should use the method of studying vocabulary that best helps their students. Teachers can test this in the beginning of the year, and then use the one that proved most useful.

2. Teachers can also provide students with choice in how they study vocabulary. Each student learns differently, and this can help all students.
3. Based on the literature, students benefit from using technology to learn vocabulary. Thus, teachers should try this with their own students to see if it is helpful.

References

- Abrams, S.S. & Walsh, S. (2014). Gamified Vocabulary: Online Resources and Enriched Language Learning. *Journal of Adolescent & Adult Literacy*, 58(1), 49–58. doi: 10.1002/jaal.315
- Adlof, S. M. (2019). Prologue to the Forum: Vocabulary Across the School Grades. *Language, Speech & Hearing Services in Schools*, 50(4), 461–465. https://doi-org.milligan.idm.oclc.org/10.1044/2019_LSHSS-19-00007
- Alavinia, P., & Farhady, S. (2012). Using Differentiated Instruction to Teach Vocabulary in Mixed Ability Classes with a Focus on Multiple Intelligences and Learning Styles. *International Journal of Applied Science and Technology*, 2(4). Retrieved from http://ijastnet.com/journals/Vol_2_No_4_April_2012/11.pdf
- Asselin, Marlene. Teacher Librarian; Bowie Vol. 29, Iss. 3, (Feb 2002): 57-59.
- Bitner, N. & Bitner, J. (2002). Integrating Technology into the Classroom: Eight Keys to Success. *Journal of Technology and Teacher Education*, 10(1), 95-100. Norfolk, VA: Society for Information Technology & Teacher Education. Retrieved November 10, 2019 from <https://www.learntechlib.org/primary/p/9304/>.
- David, McLellan C. (1973). Testing for Competence Rather Than for "Intelligence". *American Psychologist*. Retrieved from <https://www.therapiebreve.be/documents/mcclelland-1973.pdf>
- Diamond, L., & Gutlohn, L. (2006). Teaching Vocabulary. *Reading Rockets*. Retrieved from [http://weaverclassblog.synthasite.com/resources/Teaching Vocabulary Reading Rockets.pdf](http://weaverclassblog.synthasite.com/resources/Teaching_Vocabulary_Reading_Rockets.pdf)
- Dole, J., Sloan, C., & Trathen, W. (1995). Teaching Vocabulary within the Context of Literature. *Journal of Reading*, 38(6), 452-460. Retrieved from <http://www.jstor.org/stable/40017892>
- Education: The classroom of tomorrow: A digital education: How will new technology affect teaching practices? John Davitt shares his vision of the future. (1999). *The Guardian (London, England)*. Retrieved from <https://search-ebSCOhost-com.milligan.idm.oclc.org/login.aspx?direct=true&db=edsqbe&AN=edsqcl.75970690&site=eds-live&scope=site>
- Fang, Z. and Schleppegrell, M.J. (2010), Disciplinary Literacies Across Content Areas: Supporting Secondary Reading Through Functional Language Analysis. *Journal of Adolescent & Adult Literacy*, 53: 587-597. doi:[10.1598/JAAL.53.7.6](https://doi.org/10.1598/JAAL.53.7.6)

- Foil, C. R., & Alber, S. R. (2002). Fun and effective ways to build your students' vocabulary. *Intervention in School & Clinic, 37*(3), 131–139. <https://doi-org.milligan.idm.oclc.org/10.1177/105345120203700301>
- Harrell, S., & Bynum, Y. (2018). Factors Affecting Technology Integration in the Classroom. *Alabama Journal of Educational Leadership, 5*, 12–18. Retrieved from <https://search-ebSCOhost-com.milligan.idm.oclc.org/login.aspx?direct=true&db=eric&AN=EJ1194723&site=eds-live&scope=site>
- Hoskins, J., & Vannest, K. (2010). Twenty Ways to Teach Vocabulary. *Texas Science Teacher, 39*(2), 15–21. Retrieved from <https://search-ebSCOhost-com.milligan.idm.oclc.org/login.aspx?direct=true&db=eue&AN=56634230&site=eds-live&scope=site>
- Kleiman, G. (2000). Myths and Realities About Technology in K-12 Schools. *LNT Perspectives, (14)*. Retrieved from <http://www.sfu.ca/educ260/documents/myths.pdf>
- Lim, C.-P., Zhao, Y., Tondeur, J., Chai, C.-S., & Tsai, C.-C. (2013). Bridging the Gap: Technology Trends and Use of Technology in Schools. *Educational Technology & Society, 16* (2), 59–68.
- Linda Kucan. (2012). What Is Most Important to Know about Vocabulary? *The Reading Teacher, 65*(6), 360. Retrieved from <https://search.ebscohost.com/login.aspx?direct=true&db=edsjsr&AN=edsjsr.41853039&site=eds-live&scope=site>
- Merkley, D., Schmidt, D., & Allen, G. (2001). Addressing the English Language Arts Technology Standard in a Secondary Reading Methodology Course. *Journal of Adolescent & Adult Literacy, 45*(3), 220-231. Retrieved from www.jstor.org/stable/40016882
- Moghadam, S. H., Zainal, Z., & Ghaderpour, M. (2012). A Review on the Important Role of Vocabulary Knowledge in Reading Comprehension Performance. *Procedia - Social and Behavioral Sciences, 66*, 555–563. <https://doi.org/10.1016/j.sbspro.2012.11.300>
- Pamela J. Dunston, & Andrew M. Tyminski. (2013). What's the Big Deal about Vocabulary? *Mathematics Teaching in the Middle School, 19*(1), 38. <https://doi-org.milligan.idm.oclc.org/10.5951/mathteacmiddscho.19.1.0038>
- Sanford, K. (2005). Gendered Literacy Experiences: The Effects of Expectation and Opportunity for Boys' and Girls' Learning. *Journal of Adolescent & Adult Literacy, 49*: 302-315. doi:[10.1598/JAAL.49.4.4](https://doi.org/10.1598/JAAL.49.4.4)

Warschauer, M. (2001). Millennialism and media: language, literacy, and technology in the 21st century. In *Applied linguistics for the 21st century*(pp. 49–59).

Woodward, T. (2012). It's a Wired World. *Teacher Trainer: A Practical Journal for Those Who Train, Mentor & Educate TESOL Teachers*, 26(3), 18–20. Retrieved from <https://search-ebshost-com.milligan.idm.oclc.org/login.aspx?direct=true&db=eue&AN=85777476&site=eds-live&scope=site>