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EFFECTS OF QUIZLET ON VOCABULARY MASTERY

by
Suzanne C. Baptist

A Thesis

Submitted to the
Department of Interdisciplinary and Inclusive Education
College of Education
In partial fulfillment of the requirement
For the degree of
Master of Arts in Special Education
at
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Thesis Advisor: S. Jay Kuder, Ph.D.

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Thank you to my encouraging family and friends, who have always supported me regardless of the time, day, or endless phone calls.

Abstract

Suzanne C. Baptist
EFFECTS OF QUIZLET ON VOCABULARY MASTERY
2017-2018
S. Jay Kuder, Ph.D.
Master of Arts in Special Education

This study aimed to answer three research questions: Do 11th grade students in an inclusion class (students with and without disabilities) that use *Quizlet* to master vocabulary words outperform students taught with a more traditional approach on vocabulary quizzes? Do the results differ for students with disabilities compared to typically developing students? And, Do students enjoy and benefit from completing the *Quizlet* treatment for mastering vocabulary? In a two group, counterbalanced design, students in each group received a different treatment. Group 1 used index cards and group 2 used *Quizlet* as a treatment for learning and mastering vocabulary; the groups switched treatments after roughly 9 weeks. Based on the data collected, 23 out of 38 total students (60%) increased their mean vocabulary quiz score from the initial testing to the *Quizlet* program treatment. The percentage of students with disabilities that increased their mean score after using *Quizlet* was 70%, which was 10% higher than the overall class average. Based on student responses to the *Quizlet* Survey, a majority of students enjoyed and felt that they benefitted from using the *Quizlet* program.

Previous research and the results of this study suggest that it is imperative to expose students to vocabulary words on multiple occasions in order to aid in mastery. All students should be given multiple strategies to help them learn the best way to study and master vocabulary based on their specific needs.

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Chapter 1

Introduction

In all walks of life, vocabulary determines whether an individual is successful within that experience. If I travel to another country without knowing or attempting to learn simple vocabulary words, it would be extremely difficult to do anything. The same goes for most educational settings. Without adequate vocabulary, it is difficult and sometimes impossible for learners to read, write, listen, speak, and most importantly understand any given text. If an individual does not know or understand content-specific vocabulary, their success within that educational setting will be non-existent. Similarly, if a student goes into the work force right out of high school and is required to make meaning out more complex vocabulary, they are immediately at a large disadvantage.

Vocabulary skills are linked to improved reading comprehension, which helps students in all areas of academics (Fisher & Frey 2014). The more exposure to and practice with vocabulary students have the more likely they are to retain those words. Mastering vocabulary is a skill that has been a challenge for most of my students over the last five years. In order to read, comprehend, and analyze any text, students must understand the vocabulary displayed in those texts. With the Common Core's shift of focus to expose students to more complex texts, complex vocabulary comes hand-in-hand. To better prepare my students for what they will be responsible for knowing and understanding after high school (college or career), I will focus my research on the interventions of engagement and repeated exposure to aid in the mastery of vocabulary words used in the texts covered during the school year.

A large portion of elementary and secondary school students have a relatively short attention span. Due to a lack in attention, it is imperative to make sure students are engaged in class lessons to ensure they are exposed to as much content as possible within the class time frame. Using the *Quizlet* program, student attention is sustained due to the game-like qualities of each option. Students often find that using *Quizlet* is a fun activity and one that they look forward to because it is something they enjoy completing. When students look forward to a specific lesson they are much more likely to be engaged in and sustain effort and time to achieve the goal of that lesson.

A college professor once told me, “Repetition is the mother of success.” The more you repeat or practice a certain skill, the more likely you are to master that skill. In elementary school children are told to memorize their phone number and/or address. In order to be successful in this task, students are often asked to repeat the information daily until it is rooted into their memory. In providing my students with repeated exposure to their vocabulary words, they are more likely to remember the word’s definition and possibly how to create meaning by using it in a sentence.

By focusing weekly lessons on specific vocabulary words, I hope students will master the words’ definitions and successfully create authentic sentences using said vocabulary words. In mastering these definitions and being able to effectively use them in a sentence, my students will be able to have an easier time understanding the text as a whole. This, in turn, will enable for less time focusing on comprehension and more time analyzing and critical thinking about the text (a skill that students will need in any profession or occupation for the rest of their lives).

The research questions examined in this study follow:

- Do 11th grade students in an inclusion class (students with and without disabilities) that use *Quizlet* to master vocabulary words outperform students taught with a more traditional approach on vocabulary quizzes?
- Do the results differ for students with disabilities compared to typically developing students?
- Do students enjoy and benefit from completing the *Quizlet* treatment for mastering vocabulary?

It is hypothesized that students will retain and master their vocabulary skills more effectively when using the intervention of the *Quizlet* educational program. Students during the *Quizlet* treatment will score a higher overall average on their vocabulary quizzes than the group that receives a more traditional approach to learning vocabulary, index cards.

This research was conducted in two English 11 (students in their Junior year of high school) inclusion classrooms. Through an alternating-treatments design, group 1 was given repeated exposure to the vocabulary words through a traditional approach of learning vocabulary. This group created index cards for each word and utilized rote memorization as a means of mastery their vocabulary skills. Group 2 was instructed through *Quizlet* as a means of mastering their vocabulary skills. The *Quizlet* program focuses on providing students with repeated exposure of vocabulary words through game-like activities. After one marking period (roughly nine weeks), group 1 and group 2 switched treatments.

Defining Key Terms

Index Cards – small note cards/pieces of paper (roughly 4” by 6” in size) that students create. One side of the card/paper contained vocabulary word and the other side contained the definition and a sentence (not required, but students were given the option to add this).

Rote Memorization – memorizing information based on repetition of vocabulary words. Students took class time to learn/remember their vocabulary words from their index cards.

Traditional Approach – students are instructed through the use of index cards and rote memorization in order to master vocabulary words.

Quizlet – a computer program (www.quizlet.com) used by educators and students to aid in practicing and mastering learning content. For this research, vocabulary words are added as a “class set” by the teacher. Students create logins using their school-provided Google accounts. Once logged in, students have the option and choice to “learn” (match vocabulary word with definition using multiple choice), “flashcard” (digital index cards [defined above]), “write” (correctly identify vocabulary word based on definition), “spell” (correctly spell vocabulary word after it is “said” by the program), “test” (assess knowledge of vocabulary words and definitions through matching, multiple choice, true and false, and written examples [students may change settings based on skill level]), “match” (match vocabulary word with its definition the fastest by clicking and dragging), “gravity” (correctly identify and spell either vocabulary word or definition [students may change settings based on skill level]). Teachers also have the option to employ “Quizlet

Live,” where students grouped in threes or fours work collaboratively to match each vocabulary word with its definition.

Game-like Activities – options in *Quizlet* (mentioned above) that engage students in a way that appears to be more like a game than a more traditional instructional strategy for learning vocabulary.

Repeated Exposure – students were exposed to each vocabulary word on a number of different occasions and through different mediums. For example, students used them in Do Now tasks, homework assignments, within text readings and assignments, and through all *Quizlet* options.

Vocabulary Mastery – having the ability to correctly define and use each word appropriately in a sentence.

Possible implications for learning are when alternating treatments students who enjoyed and felt that they learned best from *Quizlet* could continue to use it on their own instead of solely using their index cards to master vocabulary content.

In this study, the effects of the game-like activities in relationship with repeated exposure were employed through *Quizlet* to compare its effect on students’ vocabulary mastery. The researcher hypothesized that students in the experimental group would overall score a high average on their vocabulary quizzes based on the activities used in the *Quizlet* program.

Chapter 2

Literature Review

Acquisition of vocabulary is a skill that has been researched for decades.

Knowledge of vocabulary is a factor that has been linked to many skills from basic comprehension to analysis of content-specific material. For many students, vocabulary is difficult to master however, by practicing definitions/meanings and being exposed to these terms on a frequent basis, the likelihood of mastering these words increases drastically.

Vocabulary as a Skill

Fisher and Frey (2014) state that vocabulary is at the core of all literacy. Without it, students would not be able to comprehend anything they read. Conversely, if students understand complex vocabulary, they are more likely able to read and comprehend more complex texts and in turn write about more complex texts at a more complex proficiency. In order to improve vocabulary skills, teachers should employ a variety of techniques. The techniques discussed by Fisher and Frey (2014) include wide reading, selecting words and phrases to teach, using words in discussion, and modeling word solving. Wide reading is described as giving students time to read independently a range of topics for a period of time. Teachers should also select general academic and content-specific words to teach. By learning more difficult, complex words, students can use them in reading, writing, and discussion of content-specific material. The more a teacher uses the word in discussion, the more repetition a student is exposed to. In turn, if students are prompted to use academic language, they will be more likely to use, remember, and memorize said terms. By teaching students word solving strategies, when students encounter unfamiliar

words they can use context clues (or other methods) to learn the meanings of words on their own. By completing one or more of the previous techniques, teachers can support students' vocabulary learning and mastery.

McKeown and Beck (2014) researched the effects of different teaching approaches on vocabulary development and how the instruction would affect word meaning recognition from comprehension and production. There were three conditions in this study, and all students completed each condition (repetition, interactive, and control). The first treatment was the repetition condition. In this condition, students were read a story and while the story was being read to them, teachers described the target words. After reading, students completed target word review activities. During the interactive condition, the story is read to students and they are asked to interact with the text focusing on word meanings. The control condition consisted of reading the story out loud once (as is customary in most "read-alouds"). Students were used as their own controls to determine progress.

The subjects of the study were 8 teachers and their 131 kindergarten students in a public school setting. The families in the community were working-class and 50% of students receive free or reduced-priced lunch.

The materials used for the study were three children's books with intellectually stimulating language and plot details. These books also did not depend on pictures to aid in moving the plot. Teachers identified 10 words for students to focus on in each book, totaling 30 vocabulary words. These words are considered "Tier-2" which means they coincide with academic terms. The definitions for these terms were created in a way that

was “student-friendly” so all kindergarten students would understand their meaning. In both treatment conditions, students were exposed to each target word 12 times.

During the repetition condition, whenever a target word was encountered, the teacher would read the student-friendly definition out loud. After finishing the story, students were to complete activities that were based on definitions of the target words. During the interactive condition, each story was read once without any interruption. After the reading, students were to interact with the target words through specific activities, such as creating examples of non-examples of the words application. This condition focused more on students collaborating and connecting with the target words. Students were scored on meaning recognition, context, listening comprehension, and production based on researcher-designed measures.

The researchers found that both instructional conditions (repetition and interactive) yielded higher scores than the control condition. More specifically, the interactive condition better aided students in integrating words into context and producing words based on pictures.

The implications of this study further show that repetition and creating meaning out of vocabulary words aids in term mastery. By giving students the opportunity to work with, utilize and practice the words and their definitions, they are more likely to remember the definition and use it correctly in context.

Retention of Vocabulary

Samur (2012) researched how the retention of vocabulary words using a multimedia presentation would be affected by redundancy. The researcher wanted to study whether the redundancy principle would negatively affect student performance on

retention of Turkish vocabulary words. The redundancy principle states that adding on-screen text to a multimedia presentation that already has verbal narration leads to poorer learning in students.

In order to address the redundancy principle, Samur (2012) completed a quasi-experimental design where 22 students enrolled in undergraduate courses at a public university were split into two groups. The treatment “ANT” group received animation with concurrent narration and text while learning 10 Turkish action vocabulary words. The control “AN” group was instructed through animation and concurrent narration of the same words.

The subjects were given a 15 multiple-choice question pretest. The results of the pretest showed that all students scored a 30% or lower (3 correct questions out of 10 total questions). After the pretest, students were instructed through a 2-minute PowerPoint presentation using the treatment of animation, narration, and text or animation and narration. Then students were given a posttest, which was the same as the pretest. Finally, students were asked to reflect on their learning and the presentation through an open-ended question.

Samur (2012) found that students in the treatment “ANT” group scored higher on the posttest than the control “AN” group. Students in the treatment group also reported having positive experiences with learning and the control group reported having negative thoughts about learning. The researcher concluded that in learning a new language (as was completed in this study), the redundancy principle does not lead to poorer learning. The redundancy principle led to improved learning because students were able to pair Turkish word with the English translation.

This research shows that the more a student is exposed to words and definitions through multiple senses (visual and audio), the more likely they are to retain said words definition. Since the *Quizlet* program provides students with auditory, visual, and kinesthetic stimulation through different user-based choices, students use more than one sense to learn and master each word through repeated exposure.

Grillo and Dieker (2013) examined how diagnostic-prescriptive instruction affected students' with learning disabilities knowledge of biology vocabulary through the use of flashcards (both digital and paper). Researchers used a pretest, posttest, and delayed posttest over a six-week period of time.

The subjects of this study were 25 students with learning disabilities in a Biology 1 class. These students were randomly separated into two groups: the paper group and the digital group. There were 12 students in the paper group and 13 in the digital group. The paper group was given paper flashcards to study from and the digital group was given digital flashcards via Study Stack. There was no control group in this study since all students were meant to benefit from the treatment.

For the first five minutes of every class period, students completed prescriptive practice where they studied their vocabulary flashcards by reading the vocabulary word on the front of the card and thinking about its definition, flipping the card to determine whether the thought was correct, and then placing the card in the correct pile or incorrect pile depending on whether the vocabulary word was identified correctly or not. This process would be repeated until the five minutes was up or until students went through each vocabulary word. Finally, students would display their progress by graphing the number of flashcards in their "correct" pile.

After the two-week delayed posttest, researchers concluded that the prescriptive practice increased student mastery of vocabulary words for all students (in both groups). The semester grades for all students also increased from failing during first and second semesters to passing during the third semester.

Researchers concluded that by having students study target Biology vocabulary words daily enabled students to access their long-term memory and store their vocabulary words in order to master them. This not only helped students learn the subject-specific vocabulary, but also aided in the overall comprehension of the subject.

The implications of the results of this study show that through repeated practice, students can master vocabulary. Although the vocabulary in my study is not content specific, the words are useful for all future writing assignments or discussions in any setting.

Vocabulary Difficulties of Students with Disabilities

Reading comprehension is a difficult task for many students, both with and without learning disabilities. Similarly, mastering vocabulary is even more difficult for students when instructional techniques are limited and ineffective. In order to develop vocabulary skills, teachers must make effective vocabulary instruction selections in order to best suit all of their students. Spies and Dema (2014) reviewed different strategies for effectively teaching vocabulary to students with special needs. These strategies are essential because without explicit vocabulary instruction students with exceptional needs will continue to struggle and consequently fall behind their school aged peers, putting their success in later grades/schooling at risk.

Spies and Dema (2014) focused their instructional methods research on academic vocabulary. Academic language is defined as terminology used across multiple content areas (e.g. analyze, conclude) and terms specific to each subject (e.g. pathogen, osmosis). When teaching academic vocabulary, there must be a focus on three things: beyond core meaning, word structure, and grammatical placement.

Beyond core meaning refers to introducing more than just the term's basic definition within academic context. Students should be taught how the word is used in other contexts (academic and nonacademic), similar word forms (and their correct use), synonyms, and the use of said word in relation to other words within that academic discipline. Word structure relates to knowing and understanding each part of the word (root/prefix/suffix). By understanding each part of the word, students not only understand what each word means, but then can learn to generalize each prefix/suffix to apply to other words they are exposed to in other texts. In grammatical placement, understanding how words correctly fit into a sentence leads students to understand the connection between words and their parts of speech. Recognizing the parts of speech enables students to understand grammatical agreements with other words/phrases within the context they are reading.

In using these three techniques, students will have the tools they need to help improve both vocabulary identification and reading comprehension overall. Creating opportunities for students to create deeper meaning of vocabulary words and their definitions will only aid in increasing vocabulary word mastery and retention.

Kuder (2017) reviewed different strategies for effectively teaching students with special needs vocabulary. These strategies are essential because without explicit

vocabulary instruction, students with exceptional needs will continue to struggle and consequently fall behind their school aged peers, putting their success in later grades/schooling at risk. Seven studies were included in this review. All subjects within the seven studies were students with disabilities ranging in age from 11-17 years. Of the seven, three used group designs, two used quasi-experimental designs, and two used single-subject designs. Among the seven studies, five interventions were utilized: mnemonic instruction, learning strategies, peer-based approaches, repeated reading and direct instruction, and multimedia instruction.

The mnemonic instruction intervention yielded the most effective results. Students (all were with disabilities) in this study (Terrill et al. 2004) were placed in one of two groups: keyword method group or nonmnemonic group. In the keyword method, students created keyword associations for each vocabulary word. In the nonmnemonic group, students completed “traditional” vocabulary tasks, such as synonyms, fill-in-the blank definitions, and sentence completion. Each method was used in alternating order so each group received the each method every other week. The results of the study proved that mnemonic instruction was more effective than nonmnemonic instruction, as students in the mnemonic condition outscored their nonmnemonic condition peers, 92% compared to 48.8%.

In the Harris et al. (2011) learning strategies study, researchers wanted to study whether a generative (aid students in learning both target words and related words to those target words) or nongenerative (aids students in learning only target words) strategy would yield the best results in the memorization of meanings. Subjects were split into two groups in order to determine which strategy was most effective: the Word Mapping

Strategy (WMS) group or the Vocabulary Strategy (LINCS) group. In the WMS group, students used a graphic organizer to break each word into smaller (morphemic) parts in order to predict, learn, and memorize each words definition. The purpose of this group's instruction was to help predict the meanings of words through morphemic awareness. The LINCS group also used graphic organizers to use keyword, visual, and story strategies to help build prior knowledge of words into new knowledge of vocabulary words. Students in the LINCS group also utilized self-assessing in order to help memorize definitions. Subjects in both groups increased their vocabulary retention, however students in the WMS group exceed the skills of their peers in morphological analysis.

In one of the two peer-based approaches, Shook et al. (2011) implemented a CSR model that uses four steps to enhance reading skills: previewing, click and clunk, get the gist, and wrap-up and review. In the Previewing step, students previewed the reading to get an idea of the context. Next, students read the content and separated vocabulary words into “clicks” (words they already knew) and “clunks” (words they were unfamiliar with). Students were then split into study groups based on the words they were unfamiliar with. Students worked in their groups twice a week (180 minutes per week) for 8 weeks. Researchers found that all students increased in their post-assessment (averaging a 13 point increase), but students with disabilities improved their post-assessment scores by an average of 34 points.

In a second peer-based approach, Hughes and Frederick (2006) used classwide peer tutoring with a constant time delay approach. For 10 trials, students (in predetermined peer pairs) used a 0 second time delay where the definition was given

immediately after stating the vocabulary word. In the ensuing trials, tutees were given five seconds to correctly define each vocabulary word. If students did not give the correct definition, the tutor would provide the correct definition after five seconds. Student pairs tutored each other for eight minutes before switching roles. This 16-minute process was utilized once a day until students mastered all three sets of vocabulary words. Results of this study found that all students with disabilities mastered two out of three vocabulary sets, and two out of three subjects mastered all three sets. Researchers also found that all students (those with and without disabilities) learned the vocabulary words and definitions at the same rate.

In the repeated reading and direct instruction study, Seifert and Espin (2012) used three approaches to improve vocabulary and comprehension in students with special needs. In the “vocabulary learning” approach, students were shown vocabulary words on a flash card while the instructor read the definition out loud. Students were prompted to repeat the definition after the instructor had finished reading the definition. Finally, the instructor created a sample sentence with the target word and asked the student two probe questions (created to link target word with information from the textbook). In the “text reading” approach, used automatic word identification, adult modeling, reading aloud, repeated reading, and error correction. The third approach, the combined condition, used elements from both the “vocabulary learning” approach and the “text reading” approach. Researchers found that students mastered more vocabulary words through the “vocabulary learning” and combined approaches, however student comprehension did not increase.

Multimedia instruction was researched by Kennedy and his colleagues (2014 and 2015) to determine the effectiveness of podcast use in vocabulary instruction. Kennedy et al. (2014) studied the effects of two instructional strategies: “standard” and CAPs. The “standard” instructional strategy involved teachers giving students vocabulary words and definitions through an overhead projector that were to be copied in their notebooks. The CAPs instructional strategy was a teacher-created content acquisition podcast (CAP). Researchers found that students with disabilities learned at a faster rate and more effectively during the CAP strategy. In the other study conducted by Kennedy et al. (2015), researchers compared two different types of CAPs (utilizing explicit instruction, mnemonic method, or a combination) to determine effectiveness. Students in this study were all with special needs and were randomly assigned to one of four conditions: text-only representation, mnemonic instruction, explicit instruction, or a combination of mnemonic/explicit instruction. Researchers found that students who were instructed using both the explicit instruction and mnemonic strategy increased their post-test scores significantly.

Quizlet as Means of Learning Vocabulary

Franciosi et al. (2016) studied whether flashcard games and simulation games affected students’ vocabulary retention over a 14-week college course. The research question addressed was whether using a simple simulation game in conjunction with enabling activities effected collaborative gameplay on foreign language learning outcomes. The researchers employed *Quizlet* for the flashcard game and 3rd World Farmer for their simulation game to determine whether either treatment had a long-term effect on vocabulary retention.

The subjects in this study were college students (1st, 2nd, 3rd, and 4th year) enrolled in the researcher's course. Treatment and data collection took place on 4 different class meetings over the 14-week course. Students first completed a pretest, next the treatments were used during one 90-minute class, then students completed an immediate posttest one week after treatment, and finally, 11 weeks after treatment, students took the delayed posttest. There were two treatment groups: the control group and the simulation game group. The control group was instructed to use the *Quizlet* program for 80 minutes of their class (remainder of class time). The simulation game group was instructed to play 3rd World Farmer for 40 minutes and then *Quizlet* for the remaining 35 minutes of class time.

The researchers found that there was a significant improvement from pretest to immediate posttest with both groups, however, the simulation game group overall scored higher than the control group. After 11 weeks, the delayed posttest was administered. Similarly both groups declined in overall score, but again, the simulation game group scored higher overall.

The conclusions found in this study were that simulation games do supply students with educational benefits; in this case, increased vocabulary retention over a longer period of time. Since the simulation game used in this experiment was simple compared to other coined simulation games, this study shows there is opportunity for growth regardless of the complexity of the game.

The implications of the results for my study are that the *Quizlet* program does increase the retention of vocabulary. Even though the students in this study were learning vocabulary in a different language, students did learn and master the vocabulary words.

The studies discussed above demonstrate the effectiveness of vocabulary instruction. The studies completed by Samur (2012), Grillo and Dieker (2013), and McKeown and Beck (2014) showed that through repeated exposure and practice, students can learn and master different types of vocabulary. The more students are aware and cognizant of these words, the more likely they are to remember them and, hopefully, use them.

In secondary classrooms, it is especially important for students to gain mastery of not only more complex vocabulary terms, but also academic language that will enable them to be successful inside and outside of the classroom. The research conducted in my study will further analyze the vocabulary skills and possible effective interventions for students with special needs. If *Quizlet* proves to be an effective vocabulary intervention for students with and without special needs, it can be a useful tool for all teachers, regardless of the content area that is taught. With effective vocabulary mastery comes improved reading comprehension and analytical skills; in order for my students to be successful in future academic tasks, they must first master vocabulary.

Chapter 3

Research Methodology

Setting and Subjects

This study was completed in a high school in a suburban northern New Jersey school district. There are over 6,700 students enrolled in the school district as a whole. The district is comprised of seven elementary schools (Kindergarten-5th grade), three middle schools (grades 6-8), and one high school (grades 9-12). Based on a 2014 district report, 21% of students in the district receive free or reduced cost lunch. The racial composition of the district as a whole is 51% White, 31% Black, 10% Hispanic, <1% American Indian, and 7% Asian/Pacific Islander. Based on the 2014-2015 NJ School Performance Report, 16.6% of students enrolled in the high school are classified as Special Education.

The subjects in this study were students in two 11th grade inclusion classes. The 38 total students' ages range from 16 years to 18 years 1 month. The mean age of subjects is 16 years and 8 months. Between the two classes there are 27 males and 11 females. Of the 38 students, there are 10 total students with special needs. Of these 10, 6 are males and 4 are females. There were a total of 18 Black, 10 Hispanic, 9 White, and 1 Asian students in this study.

The disabilities among the 10 special education students were Other Health Impaired, Specific Learning Disability, and Emotionally Disturbed. Of the 10 total students with special needs, 3 were diagnosed with Other Health Impaired, 1 was diagnosed as Emotionally Disturbed, and 6 were diagnosed with Specific Learning Disabilities.

Procedure

This research used a two group, counterbalanced design. While group 1 used index cards (a traditional approach for vocabulary), group 2 used *Quizlet* as a means of learning and mastering vocabulary. After one marking period (roughly 9 weeks), the group 1 and group 2 switched treatments. Group 1 then used *Quizlet*, while group 2 used the traditional approach of index cards to master vocabulary.

During each week of instruction, students learned new vocabulary words (on Mondays) and were tested on these words the following Friday (students will be given 12 words each week). The vocabulary words were preselected from the text(s) (novel/short story/non-fiction article) being read during that marking period. During instructional time on Monday, students used the entire class period (44 minutes) to learn and memorize the words and their definitions. Students were provided with the vocabulary word, part of speech, definition, and a sample sentence using each vocabulary word correctly. Students in group 1 created index cards for the words and students group 2 logged on to *Quizlet* (log-in associated with district Google Apps) and practiced studying their words through the program. Students' assessment at the end of each week required students to write the definition and an authentic sentence for 6 vocabulary words (students were allowed to choose which 6) for that week. Some students with special needs were given a modified assessment. The modified quiz was only given to students who needed the extra support for learning and memorizing vocabulary. These students still had to memorize definitions through matching and be able to identify which vocabulary word correctly completes each sentence. Students were given a word bank in order to fill in the sentence with the correct vocabulary word. All 12 words were added to the word bank. All students were

scored based on correct definition and correct usage of the word in a sentence. For example, if a student correctly defined a word, but did not correctly use that word in a sentence, they were not given credit for the sentence. Each quiz was scored out of 18 possible questions; each question was worth 5.5 points.

At the end of each marking period, the group that used *Quizlet* as their treatment completed a survey based on their experience using the *Quizlet* program (Figure 1). Based on student replies, the researcher would be able to tell if students believed their mastery could be attributed to the *Quizlet* program.

Materials

The materials used in this study were:

- *Quizlet* program (Figures 2-9)
- Index cards (4 in. x 6 in. or lined paper cut into smaller pieces).

Below (Figures 2-9) are samples of all the possible instructional features of the *Quizlet* program. Students in the treatment group used this multifaceted program as an instructional tool to memorize their vocabulary word meanings. Figure 2 is *Quizlet's* “home screen” where students can select which instructional feature they would like to work on. Students may complete any feature and may complete each feature for as long and as many times as they would like. Figure 3 is the “Learn” option where students match the vocabulary word with its correct definition using multiple choice or written questions. Figure 4 is the “Flashcard” option where students can learn their vocabulary through digital index cards/flashcards. Students can view the vocabulary word or the definition first and click the “flashcard” to view the other “side” of the digital flashcard. Figure 5 is the “Write” option where students correctly identify and type the vocabulary

word based on definition and part of speech. Students must spell the vocabulary word correctly in order to receive “credit” for their answer. Figure 6 is the “Spell” option where students are prompted to correctly spell each vocabulary word after the program says the word out loud. Figure 7 is the “Test” option where students assess knowledge of vocabulary definitions. Students have the option to assess themselves through matching, multiple choice, true or false, and written examples by identifying the correct vocabulary word and its corresponding definition (these settings can be changed by students based on their skill level). Figure 8 is the “Match” option where students match a vocabulary word with its definition (in the shortest time) by clicking the word or definition and dragging it on top of its matching word or definition. Students can see other classmates’ times to see who has the fastest time. Figure 9 is the “Gravity” option where students correctly identify and spell either a vocabulary word or its definition before the asteroid (with the definition or vocabulary word) hits the planet. Students may also change the settings of this feature based on their skill level.

Assessment Instrument

The assessment instrument used in this study was vocabulary quizzes given at the end of each week. They were required to write the definition and an authentic sentence for 6 vocabulary words (of their choice) for that week (a sample assessment is shown in Figure 10). Some students with special needs (based on their skill level) were given a modified assessment. Students were required to match the word to its definition and fill in teacher-created sentences with the correct vocabulary word (a sample modified assessment is shown in Figure 11). Each score was based on correct definition and correct usage of the vocabulary word in a sentence. For example, if a student correctly defined a

word, but did not correctly use that word in a sentence, they were not given credit for the sentence. Each quiz was scored out of 18 possible questions; each question was worth 5.5 points.

Quizlet Survey

General Information

Please indicate your gender

- Male
- Female

Please indicate your race (not mandatory)

- Asian
- Black
- Hispanic
- White

Survey

Think about when you used *Quizlet* to learn and memorize your vocabulary definitions. How much do you agree or disagree with the following statements? For each statement, please **check** (✓) the appropriate box.

	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree
I enjoyed using the Quizlet program.				
I felt that I benefited from the Quizlet program.				
I learned best from the "learn" option.				
I learned best from the "flashcards" option.				
I learned best from the "write" option.				
I learned best from the "spell" option.				
I learned best from the "test" option.				

Learn - match vocabulary word with definition using multiple choice

Flashcards - digital index cards

Write - correctly identify vocabulary word based on definition/part of speech

Spell - correctly spell vocabulary word after program read it orally

Test - assess knowledge of words/definitions through matching/multiple choice/true or false, and written examples

Figure 1. Quizlet Survey.

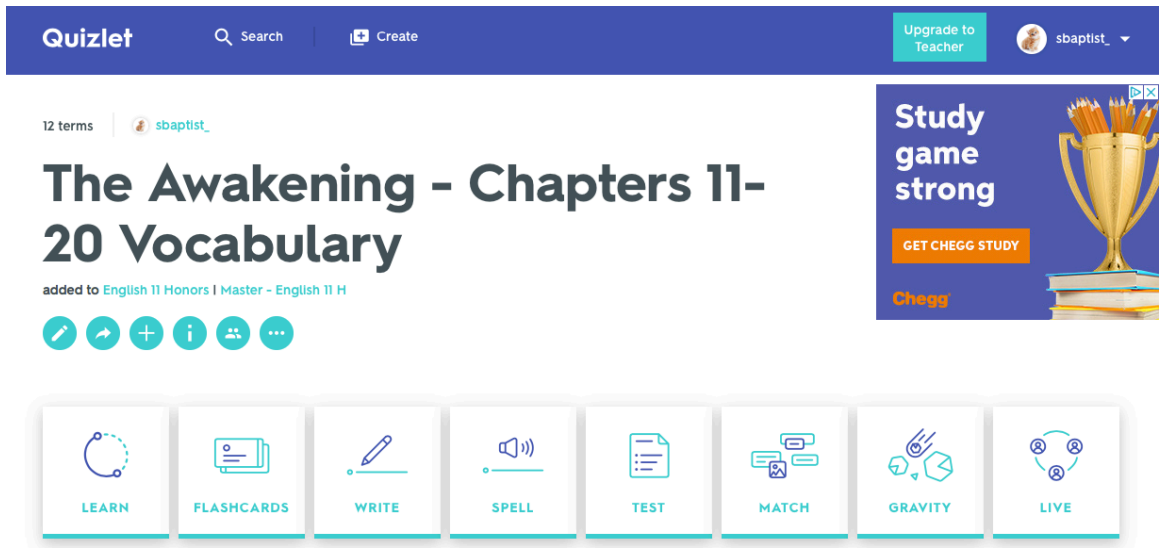


Figure 2. Quizlet “home screen” – students can choose which option they want to work on first.

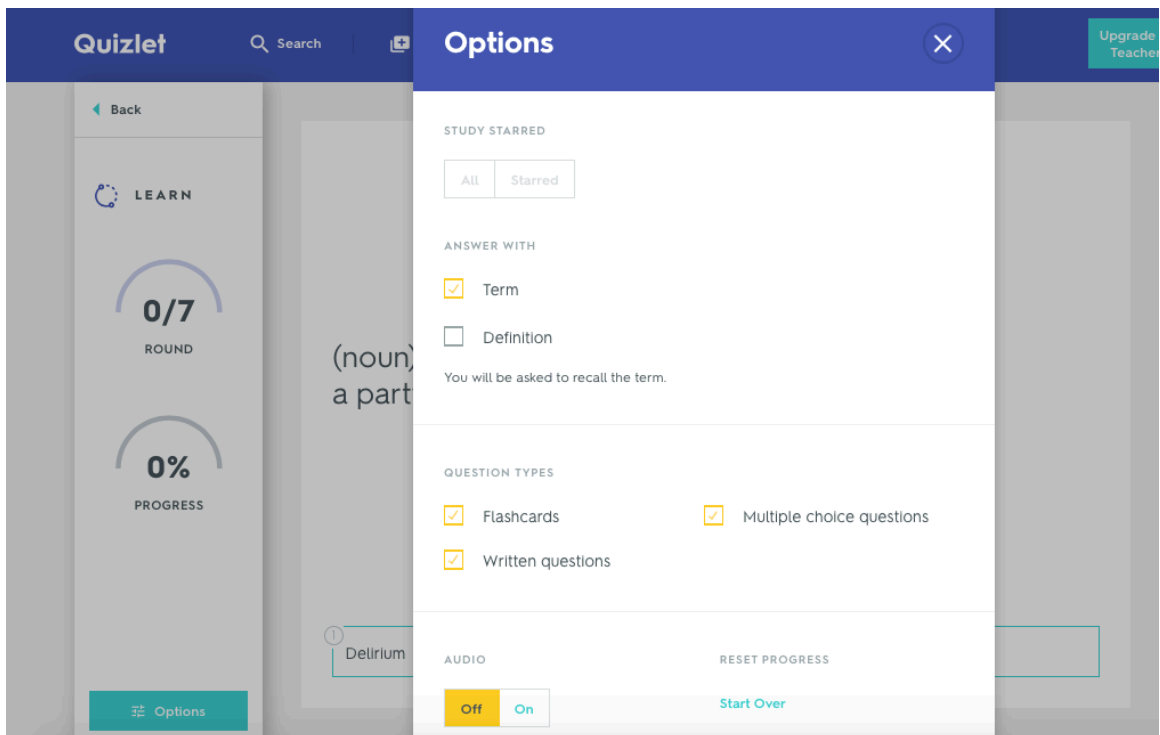


Figure 3. Learn option – students match vocabulary word with definition using multiple choice/written questions.

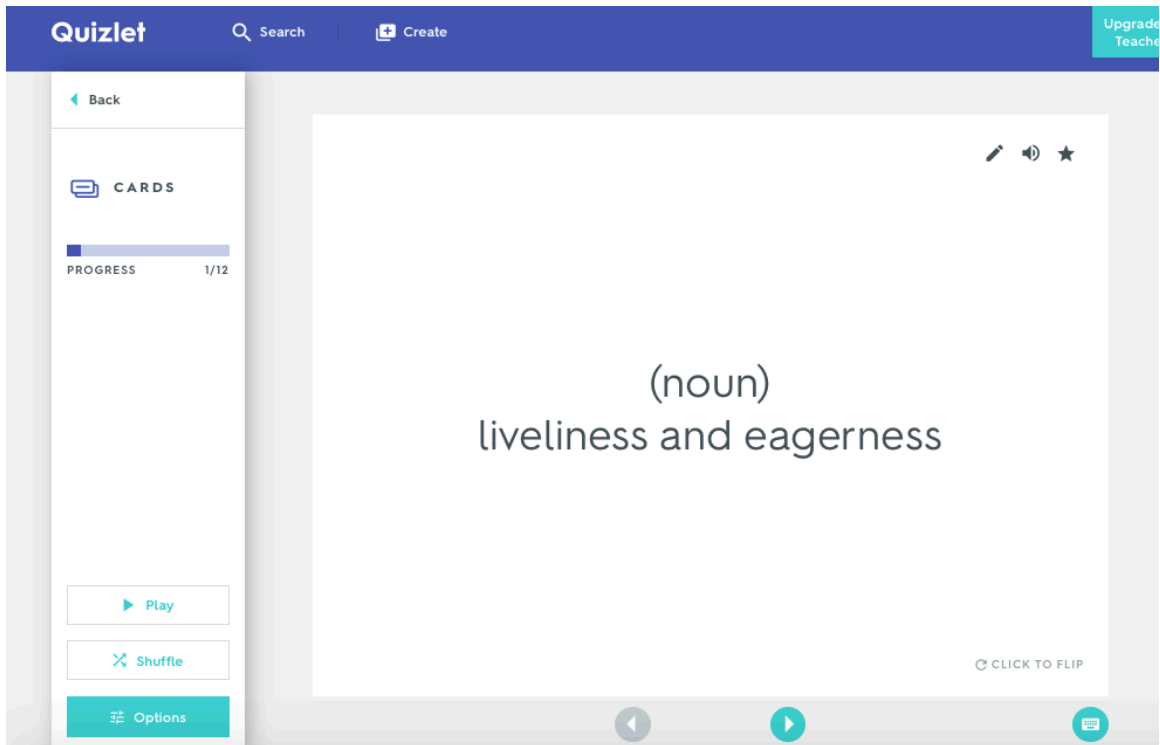


Figure 4. Flashcard option – digital index cards/flashcards.

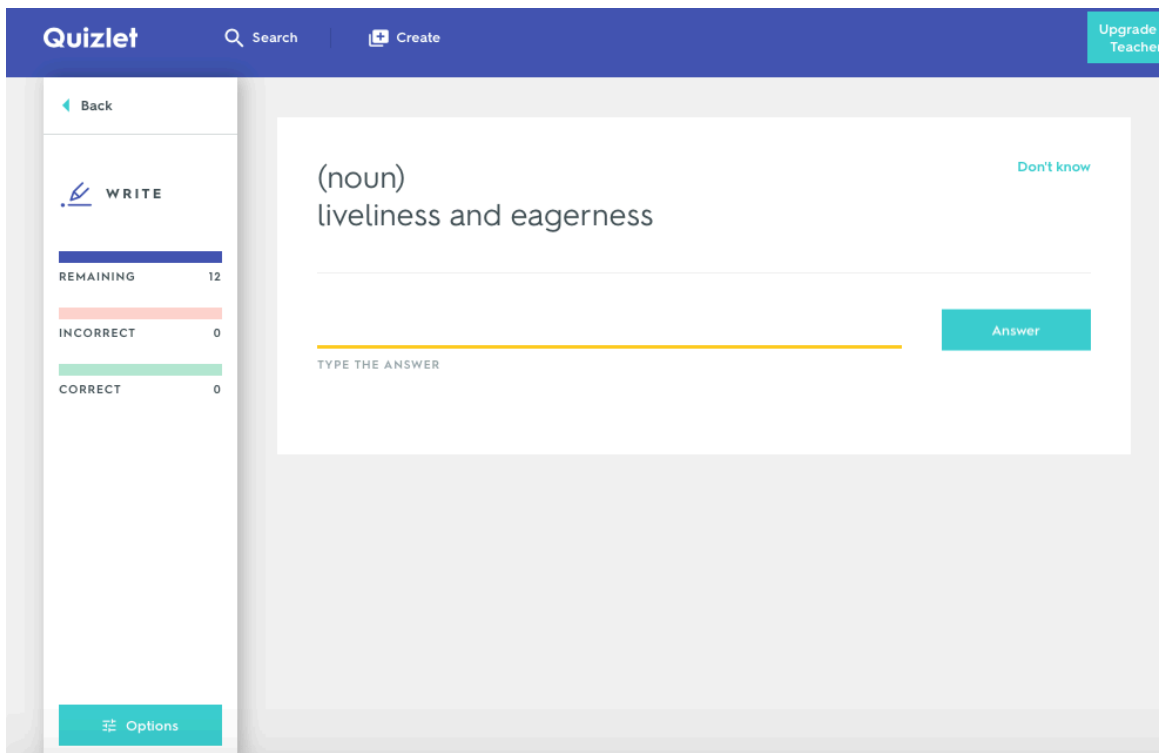


Figure 5. Write option – students correctly identify and spell vocabulary word based on definition/part of speech.

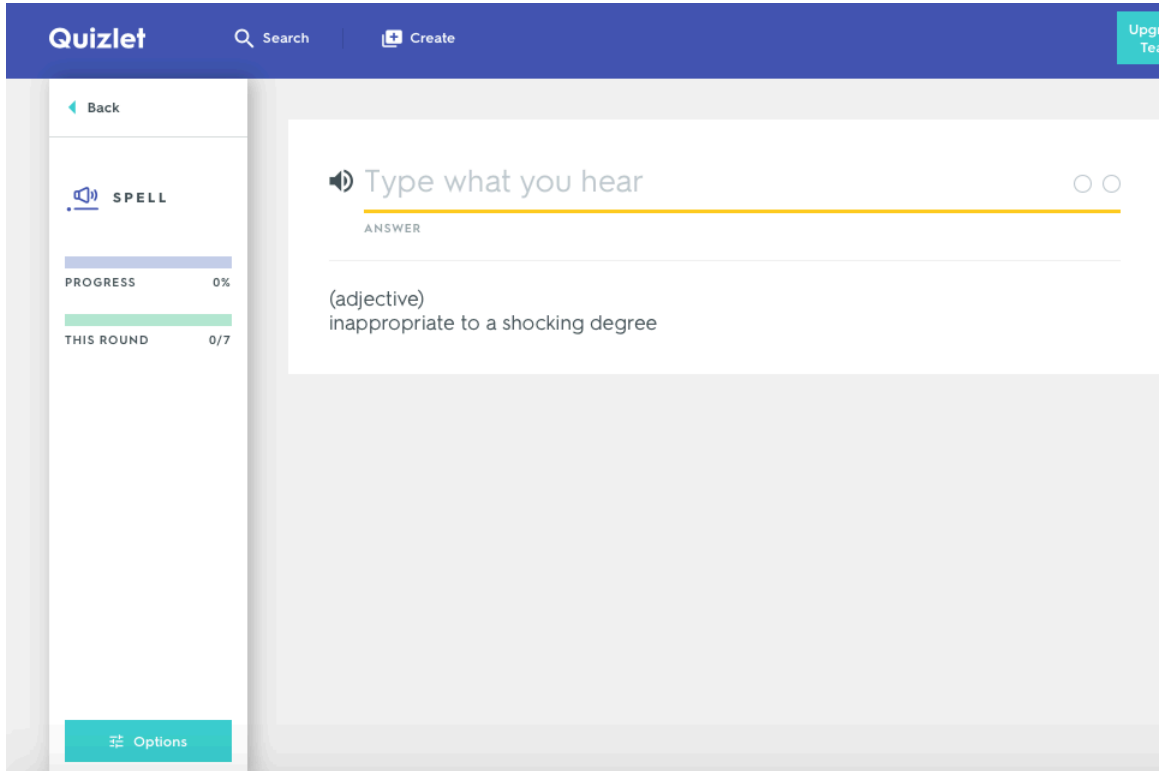


Figure 6. Spell option – students correctly spell vocabulary word after the program reads it orally.

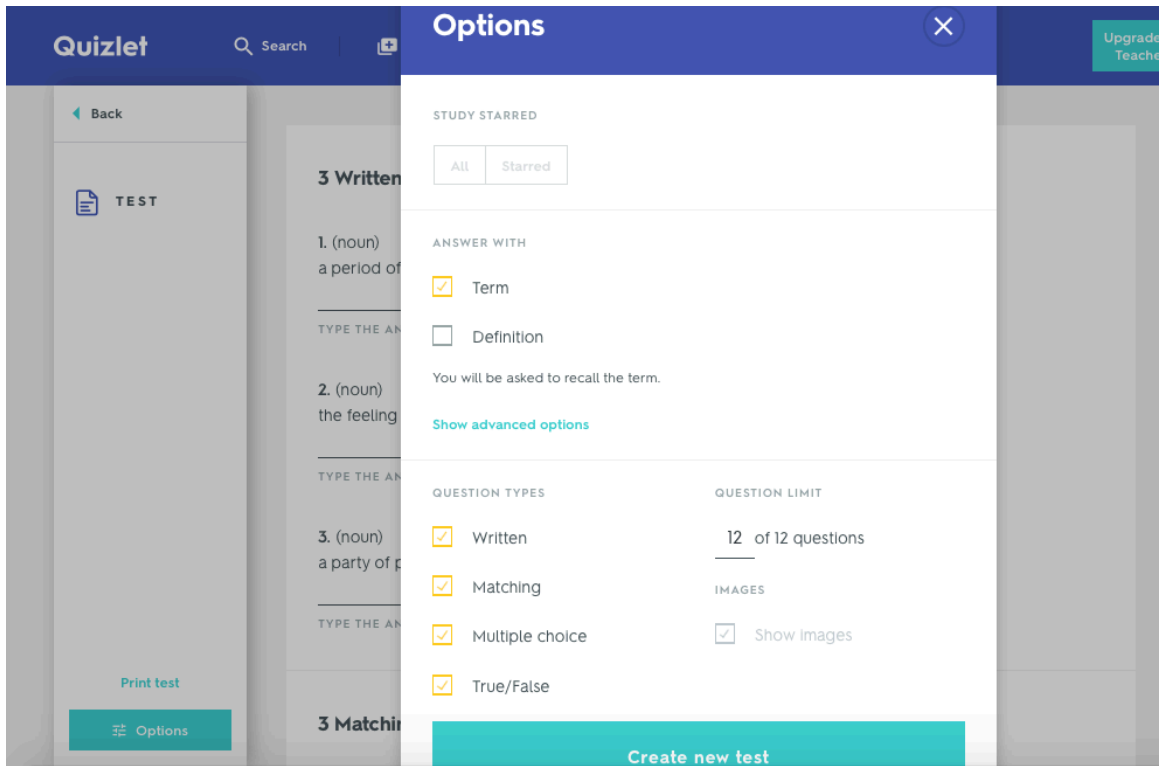


Figure 7. Test option – students assess knowledge of vocabulary definitions through matching, multiple choice, true or false, and written examples (students may change settings based on skill level).

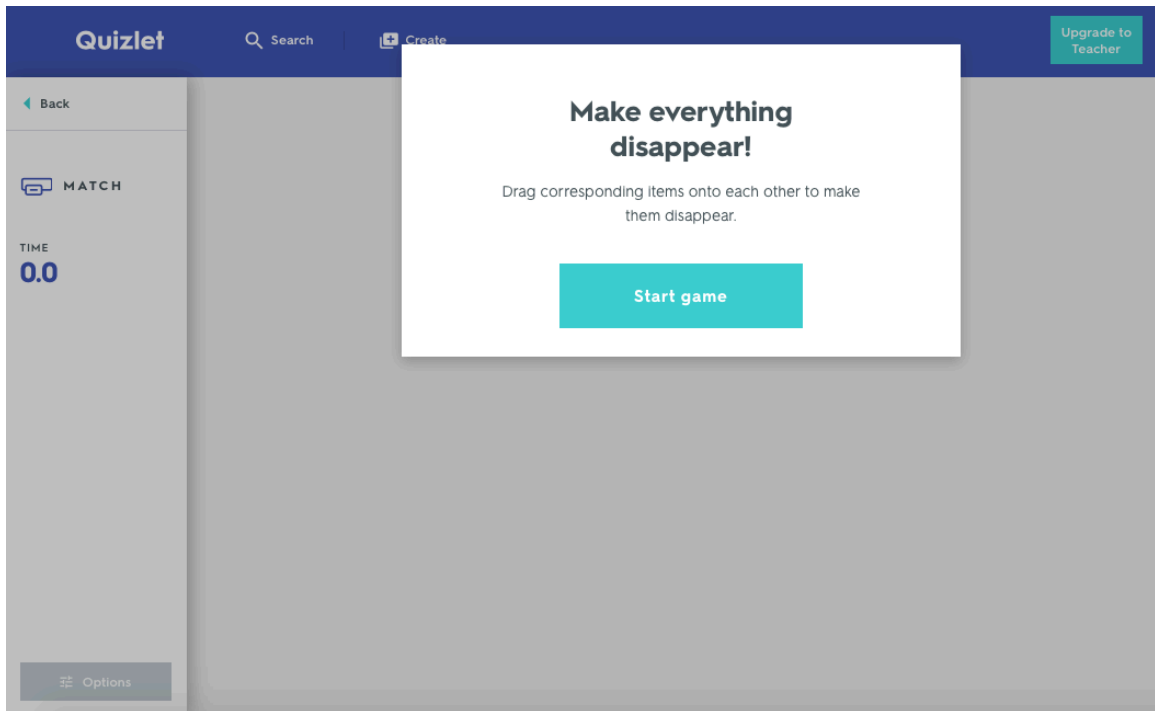


Figure 8. Match option – students match vocabulary word with its definition the fastest by clicking and dragging (goal is to have the fastest time).

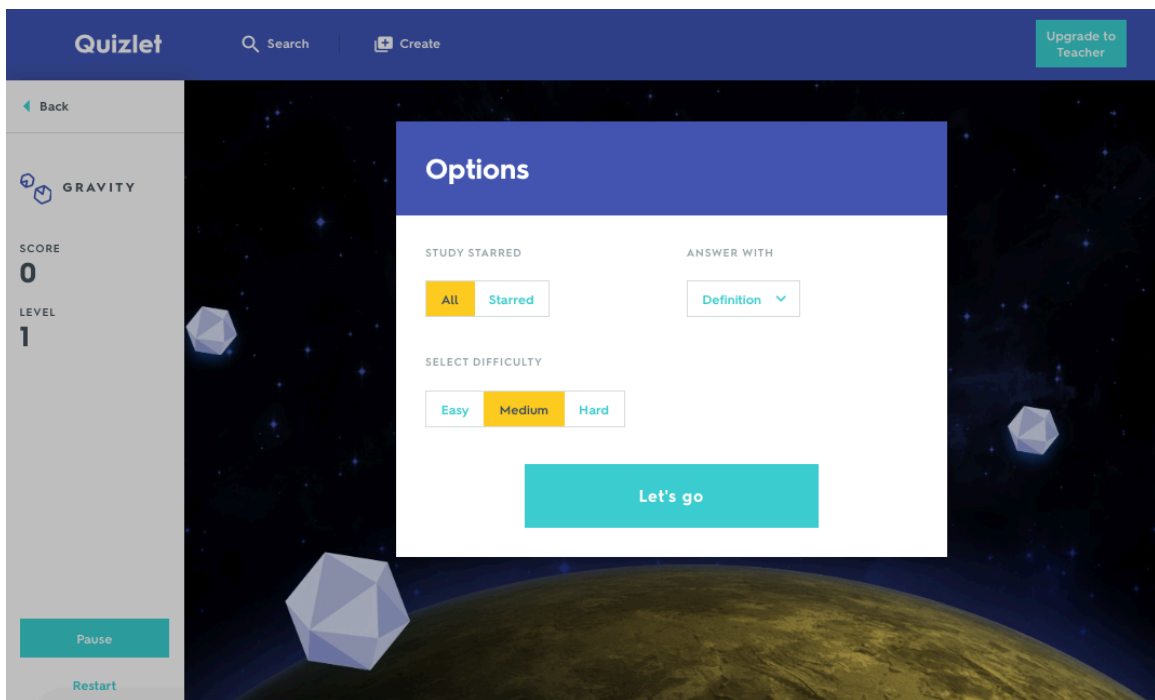


Figure 9. Gravity option – students correctly identify and spell either vocabulary word or definition (students may change settings based on skill level).

Name: _____ Period: _____ Date: _____

The Awakening (1-5) **Vocabulary Quiz**

Definitions: Provide the correct definition for each word.

1. **Vouchsafe** -

2. **Countenance** -

3. **Remonstrate** -

4. **Monotonous** -

5. **Implore** -

6. **Camaraderie** -

7. **Droll** -

8. **Iota** -

9. **Ail** -

Figure 10. Sample assessment.

10. **Bustle** -

11. **Upbraid** -

12. **Naivete** -

Sentences: Create one sentence for SIX different vocabulary words of your choice.

13. _____

14. _____

15. _____

16. _____

17. _____

18. _____

Figure 10 (continued).

Name: _____ Period: _____ Date: _____

The Awakening (1-5) **Vocabulary Quiz**

Directions: Place the correct letter as it corresponds to each term.

Terms:

1. Bustle _____
2. Countenance _____
3. Ail _____
4. Monotonous _____
5. Upbraid _____
6. Implore _____
7. Iota _____
8. Camaraderie _____
9. Vouchsafe _____
10. Naivete _____
11. Remonstrate _____
12. Droll _____

Letters:

- A. To call upon in supplication
- B. Sounded or spoken in a tone unvarying in pitch
- C. Argue in protest or opposition
- D. The quality of affording easy familiarity/sociability
- E. Lack of sophistication or worldliness
- F. Comical in an odd or whimsical manner
- G. Grant in a condescending way
- H. The appearance conveyed by a person's face
- I. A tiny or scarcely detectable amount
- J. Express criticism towards
- K. Move or cause to move energetically or busily
- L. Cause physical suffering to and make sick or indisposed

Directions: Place the correct vocabulary word in the blank space according to each sentence. You can select the appropriate answer from the word bank provided.

Word Bank

camaraderie	vouchsafe	naivete	remonstrate	droll	bustling
countenance	ailed	upbraid	implore	iota	monotonous

13. "He had gone to bed perfectly well, she said, nothing had _____ him all day."
14. "The boys were tumbling about, clinging to his legs, _____ that numerous things that he brought back to them."
15. "She was growing a little stout, but it did not seem to detract an _____ from the grace of every step, pose, gesture."
16. "He talked in a _____, insistent way."
17. The waitress was _____ in and out, giving orders in a high pitched voice, to the chef whenever she went to the kitchen and to the gardner whenever she went outside the house."
18. "Of tener than once her coming had interrupted the _____ story with which Robert was entertaining some amused group of married women."

Figure 11. Sample modified assessment.

Chapter 4

Results

Summary

This research used a two group, counterbalanced design and included a total of 38 students. While group 1 used index cards (a traditional approach for vocabulary), group 2 used *Quizlet* as a means of learning and mastering vocabulary. After one marking period (roughly 9 weeks), the groups switched treatments. Group 1 used *Quizlet*, while group 2 used the traditional approach of index cards to master vocabulary.

Students received vocabulary words on Monday and took the class period (44 minutes) to study through the treatment that was assigned to them (*Quizlet* or index cards). Students were given a vocabulary quiz each Friday that required them to write the definition of all 12 words and create 6 authentic sentences for 6 words of their choice, totaling 18 questions. Students were scored on correctness of definition and usage of the word in a sentence (each question was worth 5.5 points). Scores were recorded (rounded to the nearest whole number) and averaged based on 3 individual quizzes per treatment (beginning, treatment 1, and treatment 2).

Students were given a survey after completing their *Quizlet* treatment based on their experience using the *Quizlet* program as a means of studying and mastering vocabulary. Students were asked 9 total questions, 2 of which were identifying information (gender and race). Students were not required to answer the identifying information questions if they did not feel comfortable.

Results

Table 1 below shows the mean scores on vocabulary quizzes for group 1. The first column shows the results for vocabulary quizzes. Column 2 shows the results while using index cards. Column three shows the results when using *Quizlet*. Out of 20 total students, 11 increased and 6 decreased their overall mean score on 3 vocabulary quizzes when using the index cards. A total of 3 students in group 1 scored the same average for both the initial quizzes and the quizzes following the use of index cards. The class average increased from the initial testing to the first treatment by 3 points (87% to 90%).

The results for the use of *Quizlet* showed that the class average decreased by 3 percentage points (90% to 87%). Out of 20 total students in group 1, 8 students increased their overall averaged score from treatment 1 to treatment 2 and 9 students decreased. A total of 3 students scored the same overall average between the two treatments.

Table 1

Group 1 – Index cards quiz means at the beginning and end of the marking period

Name	Beginning	Treatment 1 (Index cards)	Treatment 2 (Quizlet)
MHS201	99	100	100
MHS202	96	90	86
MHS203	78	92	87
MHS204	72	84	88
MHS205	80	98	97
MHS206	100	100	100
MHS207	79	88	94
MHS208	81	83	85
MHS209	93	100	95
MHS210	86	96	93
MHS211	96	96	97
MHS212	86	99	85
MHS213	63	58	24
MHS214	97	98	98
MHS215	97	96	99
MHS216	93	88	94
MHS217	65	52	49
MHS218	87	92	93
MHS219	99	98	99
MHS220	96	96	72
Average	87	90	87

Table 2 shows the results on the vocabulary quizzes for group 2. Following the initial testing, group 2 studied vocabulary words using *Quizlet*. Of the 18 total students, 10 increased and 8 decreased their overall average for 3 vocabulary quizzes. From the initial testing to the first treatment the class average decreased by 2 percentage points (79%-77%). Following the second treatment (index cards) the class average increased from 77% to 81%. A total of 8 out of 18 students increased their overall average between

the *Quizlet* treatment and the index card treatment, and 10 students decreased their averaged score.

Table 2

Group 2 – Quizlet quiz means at the beginning and end of the marking period

Name	Beginning	Treatment 1 (Quizlet)	Treatment 2 (Index Cards)
MHS101	89	42	63
MHS102	51	82	77
MHS103	71	67	87
MHS104	86	97	86
MHS105	100	76	92
MHS106	65	89	96
MHS107	53	61	78
MHS108	87	100	94
MHS109	65	63	83
MHS110	85	66	50
MHS111	81	77	76
MHS112	79	83	76
MHS113	87	83	61
MHS114	84	50	76
MHS115	75	89	86
MHS116	84	98	95
MHS117	88	96	85
MHS118	88	77	90
Average	79	77	81

Table 3 shows the anonymous student responses to the *Quizlet* survey. Based on the “Strongly Agree” and “Somewhat Agree” responses, 82% of students enjoyed using the *Quizlet* program and 84% of students felt that they benefitted from the *Quizlet* program. Approximately 76% of students felt that they learned best from the “learn” option, 71% felt that they learned best from the “flashcards” option, 61% felt that they

learned best from the “write” option, 61% felt that they learned best from the “spell” option, and 71% felt that they learned best from the “test” option.

Conversely, based on the “Somewhat Disagree” and “Strongly Disagree” responses, 13% of students did not enjoy the *Quizlet* program and 13% did not feel that they benefitted from the *Quizlet* program. Approximately 18% of students felt that they did not learn best from the “learn” option, 24% felt that they did not learn best from the “flashcards” option, 29% felt that they did not learn best from the “write” option, 34% felt that they did not learn best from the “spell” option, and 24% felt that they did not learn best from the “test” option.

Table 3

Student responses to Quizlet survey

Question	Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree
Enjoyed using the <i>Quizlet</i> program	17	14	2	3	2
Benefited from the <i>Quizlet</i> program	18	14	1	3	2
Learned best from the 'learn' option (match vocabulary word with definition using multiple choice)	15	14	2	2	5
Learned best from the 'flashcards' option	13	14	2	4	5
Learned best from the 'write' option (correctly identify vocabulary word based on definition/part of speech)	9	14	4	4	7
Learned best from the 'spell' option (correctly spell vocabulary word after program read it orally)	8	15	2	8	5
Learned best from the 'test' option (assess knowledge of words/definitions through matching/multiple choice/true or false, and written examples)	16	11	2	4	5

Chapter 5

Discussion

Vocabulary is a skill that all students, through all walks of life, need in order to be successful in any given situation, especially in academia. Since my students have increasingly struggled with vocabulary throughout my 5 years of teaching, I found it imperative to study the effects of using the *Quizlet* program in my 11th grade English classroom. I decided to use *Quizlet* because I have found that students tend to enjoy using this program. The program uses different engaging techniques to help students master vocabulary. The following are three questions I focused my research on:

- Do 11th grade students in an inclusion class (students with and without disabilities) that use *Quizlet* to master vocabulary words outperform students taught with a more traditional approach on vocabulary quizzes?
- Do the results differ for students with disabilities compared to typically developing students?
- Do students enjoy and benefit from completing the *Quizlet* treatment for mastering vocabulary?

I hypothesized that students would retain and master their vocabulary skills more effectively when using the intervention of the *Quizlet* educational program.

The use of traditional index cards was compared to the use of the *Quizlet* program. Students also completed a survey based on their enjoyment of and/or benefit from using the *Quizlet* program to study/master their vocabulary. These results showed that students learned more vocabulary words while using the index cards treatment than the *Quizlet* treatment. However, the student survey showed that students overwhelmingly

enjoyed the *Quizlet* program and reported they felt that they benefitted from the *Quizlet* program.

According to my hypothesis, I expected to find that all students, including those with disabilities, would increase their overall mean of vocabulary quiz scores after using the *Quizlet* program. Based on the results for the students without special needs, 16 out of 28 students increased their score from the baseline to *Quizlet* treatment (approximately 57%) and 12 out of 28 students increased their score from the baseline to index card treatment (approximately 43%). Based on the results for the students with special needs, 7 out of 10 students increased their score from the baseline to *Quizlet* treatment (70%) and 8 out of 10 students increased their score from the baseline to index card treatment (80%). One student within the special needs population made no increase or decrease (mean score stayed at 100%). The *Quizlet* treatment was effective for 23 students in total (approximately 61%) and the index card treatment was effective for 20 students in total (approximately 53%).

Based on the collected data, the *Quizlet* treatment was more effective for students without special needs. Even though the *Quizlet* treatment was more effective, the index card treatment also aided in vocabulary mastery for these students. The index card treatment was more effective for students with special needs. The *Quizlet* treatment still assisted in vocabulary mastery for students with special needs, but not as successfully as the index card treatment.

Previous Research

The results of my research are similar to the results of Samur (2012), Grillo and Dieker (2013), and McKeown and Beck (2014). Based on the research completed by

Samur (2012), having the *Quizlet* program orally read each vocabulary word while students learn definitions benefitted 23 students (~61%) based on their responses from the *Quizlet* Survey. Grillo and Dieker's (2013) research was also similar to the research found in my research because the repeated exposure to vocabulary words (through either index cards or the *Quizlet* program) aided many of my students with and without special needs in mastering their vocabulary. McKeown and Beck's (2014) research the repetition of words also abetted students master their vocabulary words. Even though the *Quizlet* program had more opportunities for students to view, hear, and study each word, students were able to attain repeated exposure through both treatments.

Limitations

A limitation of this study was absences of students and other external factors, such as sports and familial issues that caused them to miss class. Specific sports teams were dismissed from school early because of tournament or championship games/matches. Student athletes along with students who were chronically absent may not have had as much time to study and practice their vocabulary words since it was probable that they missed classes on Monday that were dedicated to studying vocabulary.

Practical Implications

The results of the current study suggest that it is important to give students multiple strategies for studying vocabulary. Since approximately 71% of the students in this study increased their mean score from either treatment, it is evident that the more options students are given the more likely they are to find a strategy that is successful for them. Some students expressed their preference for either the *Quizlet* program or index cards after finishing each treatment. It is important to note that not all students learn the

same way, so in giving them different ways to learn, there is more chance for achievement within the given task.

A practical implication for understanding students with disabilities is that any constructive way to study helps. I have recently found that it is often difficult for students to study for any subject; they don't have an intrinsic ability to study. Studying must be taught and many of my students, both with and without special needs, have never be instructed on how to do it. In giving them both the *Quizlet* strategy and the index card strategy, they were able to explore different ways of learning and memorizing vocabulary words.

Conclusion

This study aimed to answer three research questions: Do 11th grade students in an inclusion class (students with and without disabilities) that use *Quizlet* to master vocabulary words outperform students taught with a more traditional approach on vocabulary quizzes? Do the results differ for students with disabilities compared to typically developing students? And, Do students enjoy and benefit from completing the *Quizlet* treatment for mastering vocabulary? Based on the data collected, 23 out of 38 total students (60%) increased their mean vocabulary quiz score from the initial testing to the *Quizlet* program treatment. Although this program did not help all students, it did help a majority of my students increased their vocabulary mastery. The percentage of students with disabilities that increased their mean score after using *Quizlet* was 70%, which was 10% higher than the overall class average. Based on student responses to the *Quizlet* Survey, a majority of students enjoyed and felt that they benefitted from using the *Quizlet* program.

After reviewing research and conducting this study, it is imperative to expose students to vocabulary words on multiple occasions in order to aid in mastery. Although the *Quizlet* program worked for many students, it did not work for all. Using the *Quizlet* program as a means of instruction may be beneficial for those with special needs, but all students should be given multiple strategies to help them learn the best way to study and master vocabulary based on the specific needs of all students.

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