

Using Vocabulary Visuals
To Teach Vocabulary Curriculum

A Special Project
Presented to
Dr. Robert P. Kraig
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FACULTY APPROVAL

Using Vocabulary Visuals
To Teach Vocabulary Curriculum

A Master's Special Project

by

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ABSTRACT

Using Vocabulary Visuals to Teach Vocabulary Curriculum

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The purpose of this project was to determine if using visuals for the vocabulary roots and stems would help boost scores on vocabulary tests. The researcher obtained permission to conduct the study by the high school principal. A partnership with one other freshman English teacher was established. The subjects were both given a pre and post test. The experimental group was also given a survey. The results for the data were tabulated using Microsoft Excel and Statpak, and it was found that students who were presented with vocabulary visuals in connection with the vocabulary curriculum scored significantly higher than students who were not presented with vocabulary visuals. The experimental group also expressed greater confidence levels. The hypothesis was accepted.

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CHAPTER 1

Introduction

Background for the Project

In 2001, President George W. Bush signed an act called The No Child Left Behind Act (NCLB). The act was implemented to hold schools accountable for the learning of all children. All teachers were expected to be highly qualified and use highly qualified instruction techniques to teach students in order to master certain concepts that the state determined were necessary for education and graduation. In addition, schools were held accountable for meeting Annual Yearly Progress (AYP). This was done through a state test known as the Washington State Assessment of Student Learning (WASL). Schools' scores were expected to increase each year. If a school didn't meet AYP in two consecutive years, they had four options in which to choose from, such as a turnaround, a re-start, a closure or a transformation. The WASL was replaced by the Measurement of Student Progress (MSP) in grades 3-8 and the High School Proficiency Examination (HSPE) in grades 9-12 in the 2009-2010 school year.

The use of three dissimilar vocabulary programs, over the past four years, brought about the yearning to do the study. Various vocabulary programs were implemented because the programs were not successful. There were numerous complaints about the first two programs from students and parents at Tenino High School (THS), which brought the administration to make the decision to look for a new program. The English Department at THS searched for a program that would be meaningful and offer success to all students. The program of choice was The Word Within The Word and involved the roots and stems of the English language. This program was chosen in order for students to learn the roots and stems to differentiate between the meanings of unfamiliar words. The department felt comfortable in their decision because the success of the program, students' scores on tests, and potentially the SAT, should be better.

The instruction methods used by teachers were imperative to their learning. When a safe and fun environment has been created, students have been more receptive to the information presented. Teaching morphology to students has been beneficial since teaching morphology began. Latin and Greek roots have made up the English language. When students learned morphology, they had the ability to decode words in the English language to determine the meanings of those words.

The use of symbols and pictures to teach students has proven to be beneficial. Whether the pictures and symbols consisted of charts, graphs, or other visual cues, students have potentially learned more of the information presented.

People have been placed in learning situations everyday, whether at work, school or another environment. Auditory information had been the predominant source of information presented. Although people have had to rely on auditory information, more learning took place when another learning technique had also been presented. This could have been because not everyone has been able to learn from auditory information.

Statement of the Problem

Because Tenino High School (THS) has had to implement its third vocabulary program in three years, the desire for the program to be successful was uttermost in the researcher's mind. The area of concern was that students were not retaining the roots and stems in the vocabulary program with direct instruction as was desired by the researcher. The curriculum offered assignments and reviews before the quizzes, but the researcher felt that more should be done for long-term retention.

The researcher believed that adding another learning technique, in addition to the technique currently used, would add success to the students' learning.

Research was conducted in order to determine how the vocabulary program could be successful. The review of literature determined that when multiple learning styles were presented to students, students' retention increased.

Purpose of the Project

The purpose of this study was to determine if using visuals for the vocabulary roots and stems would help boost scores on vocabulary tests. The study was also used to determine if using vocabulary visuals with students would help boost the confidence levels when taking vocabulary tests.

Delimitations

This project was delimited to one ninth grade class over the course of two quarters at Tenino High School in the Tenino School District, located in Tenino, Washington. The Tenino School District had over 1,300 students enrolled each year. There were four schools in the district: Parkside Elementary School, Tenino Elementary School, Tenino Middle School and Tenino High School.

Tenino High School consisted of 201 male students and 217 female students. The percentage of free and reduced lunch was 33%. The school was rural in nature and had a low turnover rate. There were 24 students enrolled in the Advanced Placement English course and 51 students enrolled in Special Education. The ethnicities of the students at the high school were: 91.4% White,

2.6% Hispanic, 1.9% Asian/Pacific Islander, 1.2% American Indian and 0.7% Black. English was the primary language spoken, which consisted of 93.6% of the students. English as a second language consisted of 6.4% of the student population.

The study was conducted during the 2010-2011 school year. A one hundred word root and stem test was the assessment tool of choice for the study to assess student success. The test was administered twice during the course of the study: once at the beginning of the first quarter and once at the end of the second quarter.

Assumptions

For this study, it was assumed that every student gave full attention to the vocabulary visuals that were presented during instruction each week. All students tried their hardest during each testing phase. All students understood the visuals being presented was another assumption. It was supposed that all classes had the same range in ability levels (low, average, high). It was believed that the teacher, who taught the control group, only used the vocabulary curriculum. It was assumed that the students answered the survey questions truthfully. It was believed that the pre and post tests were valid and reliable since the tests came from a published curriculum.

Hypothesis

Students who receive visual aids in vocabulary curriculum will show a higher class average on vocabulary tests than students who do not receive visual aids. After using vocabulary visuals with the vocabulary curriculum, students will express more confidence about taking vocabulary tests.

Null Hypothesis

Students who receive visual aids in vocabulary curriculum will show just as high a class average on vocabulary tests as students who do not receive visual aids. After using vocabulary visuals with the vocabulary curriculum, students will not express more confidence about taking vocabulary tests.

Significance of the Project

The purpose of this project was to provide a factual base of information regarding the use of visual aids in vocabulary instruction. The results of this study were presented to the staff in the English department and administration to determine implementation of vocabulary visuals in all English classrooms.

Procedure

For the purpose of this project, the following procedures were implemented:

1. Permission to conduct research at Tenino High School was granted by Principal Bradley Ramey (see Appendix A).
2. A review of literature was conducted on all four literature sets at Heritage University, Tenino High School, through databases and the Internet.
3. A partnership was formed with one other teacher at THS for the purpose of a control group.
4. A pretest was given to all students; both the experimental group and the control group (see Appendix B).
5. Students were given instruction using the use of visuals (see Appendix C).
6. A post test was given to all students; both the experimental group and the control group (see Appendix B).
7. Results were tabulated and graphed on both the pretest and the post test (see Appendix D).
8. A survey was administered to the students in the experimental group (see Appendix E).
9. Results of the survey were tabulated and graphed (see Appendix F).
10. Results of the study were examined, evaluated, and conclusions were drawn.

11. A meeting was conducted to determine the effectiveness of the program and to make a decision in regards to future implementation of vocabulary visuals in vocabulary curriculum across grade levels.

Definition of Terms

For the purpose of this study, the following words were defined:

Vocabulary visuals. Vocabulary visuals are pictures that represent the words in the lesson. For example, if one of the vocabulary words was antho, then the vocabulary visual would be a picture of a flower.

Essential Academic Learning Requirements. “The Basic Education Act of 1993 led to the development of four learning goals which have provided the foundation for the development of all academic learning standards in Washington State” (OSPI www.k12.wa.us/CurriculumInstruct/EALR_GLE.aspx). The EALRs are the standards that the state has determined are necessary for students to attain in order for students to graduate.

High School Proficiency Exam. “The HSPE measures the proficiency of students in high school and serves as the state’s exit exam. Students must pass this assessment or a state-approved alternative in reading and writing in order to be eligible to graduate” (OSPI www.k12.wa.us/assessment/statetesting/HSPE.aspx).

Turnaround. “The principal and half the staff is replaced” (Randall, 2010, para. 15).

Re-start. “Closing the school, selecting new staff and creating a charter school (since this is not allowed in Washington state, this is an invalid option)” (Randall, 2010. Para. 15).

Closure. “Reassign students to other district schools” (Randall, 2010, para. 15).

Transformation. “The principal is replaced, some of the staff is involuntarily transferred to other schools, and a performance-based evaluation process is developed for the staff” (Randall, 2010, para. 15).

Acronyms

NCLB. The No Child Left Behind Act.

THS. Tenino High School

AYP. Annual Yearly Progress

WASL. Washington Assessment of Student Learning

HSPE. High School Proficiency Examination

MSP. Measurement of Student Progress

EALR. Essential Academic Learning Requirements

CHAPTER 2

Review of Selected Literature

Introduction

This chapter has been organized around the following topics: (a) No Child Left Behind, (b) Curriculum Instruction, (c) Curriculum Assessments, (d) Learning Styles and (e) Summary.

No Child Left Behind

According to No Child Left Behind (2010), the No Child Left Behind Act was signed by President George W. Bush in 2001, shortly after he came into office. This act was designed to essentially make all students successful in reading and math throughout the country. Standards-based education reform was the basis for the act. This meant that high standards were put into place with goals that could be measured. States had some leeway on the act; states were required to create their own standards and measurable goals that were to be tested in certain grades in order to receive any federal funding for districts. Washington State's standards were called the Essential Academic Learning Requirements (EALRs).

As stated in *Is Your Child Being Left Behind* (2007), schools were held accountable for the standards by meeting Annual Yearly Progress (AYP). This meant that schools had to have improvement in all categories in order to reach AYP. Scores for low-income, minorities and special education also needed to reach proficiency. All students needed to reach proficiency by 2013-2014.

According to *Laws and Regulations* (2010), in order for students to reach this goal, teachers were required to be highly qualified in core subjects by the school year 2005-2006. Washington state teachers must take and pass the WEST-E test in their content area in order to be classified as a highly qualified teacher.

As stated by OSPI: *Washington Comprehensive Assessment Program* (2010), a factor that came into play to meeting AYP was the state testing. According to OSPI, “Statewide testing is important because it helps ensure all public school students, no matter where they go to school, receive a quality education” (para. 1). The students in Washington State were tested once a year. The criterion for graduation had changed several times due to students not meeting proficiency. OSPI was in charge of all state testing from developing and selecting the test to even administering the tests. OSPI also reported the data to students, families, communities and the school districts.

According to OSPI: Testing Students in Washington State (2010), the state has developed the Measurement of Student Progress (MSP) and the High School Proficiency Exam (HSPE). The MSP was administered to students in grades 3-8 and was used to show student progress. The HSPE was given to high school students in grade 10. Currently, students must take and pass the reading and writing portion of the HSPE in order to graduate. If a student wasn't successful in one or more categories, they could retake the test at a later date. The students were given five chances to pass the HSPE. The class of 2013 was also required to take and pass the science portion of the HSPE. In the area of math, there were end-of-course exams. Students were given an end-of-course exam in Algebra I and Geometry. The state also moved the science to an end-of-course exam in Biology in 2012.

The portion of the HSPE that related to this study was the reading assessment. Since the reading portion was required, vocabulary was an integral part of all English classes at THS. The reading test consisted of both multiple choice questions and long answer questions from various reading selections. It was important for students to know and understand the passage in order to answer the questions correctly. Therefore, teaching vocabulary played a major part in students being successful on the reading HSPE exam.

Curriculum Instruction

Stevens (2006) stated that students changed drastically during the middle school years. One of the main concerns was that students' academic learning and motivation plummeted during this time frame. This was especially evident in reading and writing, which had been a problem because students were required to pass the reading and writing tests in high school before graduation.

According to Stevens (2006), when a positive and cooperative learning environment had been created, students were more productive and more learning took place. According to Stevens, "cooperative learning uses peers as both an instructional and motivational resource, taking advantage of students' increasing sense of independence and stronger peer orientation during adolescence" (p. 1). Students were more motivated to learn when the instruction was comprehensible, meaningful and fun. Reaching the students was imperative to learning and student success.

Price and Willingham (2009) stated that morphology instruction had been the study of roots, suffixes and prefixes, predominantly taken from the Latin and Greek languages. The basis behind this type of instruction had been that if students had learned morphology, they had the ability to decode word meanings in any context.

According to Marzano et al. (2001), “One of the best ways to learn a new word is to associate an image with it” (p. 126). When associating an image or symbol to a new word being learned, the effects were very powerful. In 11 studies done by Powell, it was shown that people who were instructed using images or symbols had 34 percent higher gains than any other instructional strategy. In addition, Marzano et al. stated “imagery-based techniques produced achievement gains that were 37 percentile points higher than those produced by techniques that focused on having students continually review word definitions” (p. 126).

Curriculum Assessment

According to Meadan et al. (2008), symbols have been used in many studies and classrooms. Pictures have been found in all sorts of textbooks to help aid students in comprehension. Symbols have come in many different forms, from pictures to charts and graphs. The three types of symbols were transparent, translucent and opaque. When a symbol represents something, it is known as the referent. A transparent symbol was “easily guessed in the absence of a referent” (p. 46). A translucent symbol was when “the referent’s meaning may or may not be obvious but the relationship can be perceived once the meaning is provided (p. 46).” An opaque symbol was when “no relationship is evident even when the symbol’s meaning is known” (p. 46). In a study they conducted with preschool

children, it was found that when the children were assessed on sight words, they performed better when the sight word had a picture attached with the word. They concluded that the use of pictures to assess students' learning was beneficial.

According to Bravo and Stahl (2010), there were three main assessment methods for assessing vocabulary. The three main methods were multiple-choice, fill-in-the-blank or matching. Even though these methods were the most common, they weren't necessarily the best forms of assessment. It was believed by Bravo and Stahl that there were four stages to vocabulary development. People must not just know the definition of a word but must be able to apply it as well. There should have been multiple ways to assess vocabulary development. When learning vocabulary, students should be first tested to know whether or not they have retained the definition. Then, the students should have to apply the words as well. A great way to ensure that students knew the definition of a word and could apply it was to have students circle or connect the words that were related.

Butler (2001) defined the several different assessment methods. Her view of assessment and evaluation differ. She viewed assessment as just a collection of information and evaluation is the judgment of worth of the assessment. Based on her definitions, a summative assessment was based on evaluation and a formative assessment was based on assessment. For the purpose of this study, the

assessment was formative and the results tabulated were summative. Summative assessments were basically ongoing. Butler also pointed out that assessments needed to be relevant, reliable and valid before being used in a classroom. If an assessment wasn't relevant, reliable or valid, there was no point in using it in the first place. Traditional assessments were those that consisted of selecting an answer. These types of assessments were made up of true/false, multiple-choice and fill-in-the-blank. Alternative assessments were when students generated a response. These types of assessments consisted of short-answer or essay questions. Authentic assessments were demonstrative in nature. These types of assessments were real life assessments and could consist of speeches or debates. Any assessment that required students to use real life situations was authentic. Quality assessments were when the subjects knew the criteria before they began the assignment. These types of assessments would have included a rubric for students from the start.

Learning Styles

According to Gilbert (2005), "average adults spend about one-half of available communication time listening. Students, however, are in listening situations much longer; some estimate 65 to 90 percent" (p. 2). Although many people have been classified as auditory learners, they may not have been

predominantly auditory learners. Many people have a variety of learning styles. People relied on auditory skills to communicate and make connections with others; therefore, they required them to listen. Although auditory skills have been known to be a big part of learning, more learning occurred when another learning style was also implemented.

According to Nunley (2002), in a study she conducted, teenagers between the ages of 13-19 were selected. The subjects were given the Dunn, Dunn, and Price Learning Style Inventory in order to determine what the subjects thought their learning styles were. The subjects that were selected consisted of those who preferred visual and auditory. All subjects were given the magnetoencephalography (MEG) test by a neuroscientist. Both visual information on a screen and auditory information through headphones were given to the subjects. According to Nunley, “of the 25 students whose brain images have been interpreted so far, 10 have a visual preference, 1 subject has an auditory preference, and 14 subjects have no preference” (p. 54). Therefore, according to the MEG test, 10 subjects learned primarily through visual information, 14 subjects could learn either with visual information, auditory information, or both, and only one subject learned primarily through auditory information. Therefore,

when more than one learning style was implemented in the classroom, more learning could occur.

Marcus (2007) made a few great points to learning styles. She believed that more research needs to be conducted on the topic, yet the evidence was visible. When more learning styles were presented, the subject learned more. Marcus gave an example of a librarian and learning styles. A librarian helping a patron find a book was using three different types of learning. Walking the patron to the book was kinesthetic learning, showing the patron where the book was located on the shelf was visual learning and speaking to the patron throughout the book-finding process was verbal learning. If the librarian only gave the patron the call number, the patron may have returned to the desk or spent a great deal of time trying to find the book. Throughout the process, the patron learned a great deal and may not need the extra help the next time they tried to find a book on the shelves.

Summary

The focus of this chapter was to address the available evidence to the topics of (a) No Child Left Behind, (b) Curriculum Instruction, (c) Curriculum Assessment, and (d) Learning Styles. Because of NCLB, students must reach mastery on the reading and writing HSPE in order to graduate from high school.

Therefore, teaching vocabulary was essential. Instruction was best when more than one way of learning was presented. The material should have been engaging and fun for the students. The assessment needed to be reliable and valid before considering using the assessment. Students should have also been assessed in multiple ways, from formative to summative. Also, teachers needed to present information in a variety of different learning styles to optimize the learning environment. The more learning styles a teacher presented, the more students that teacher reached.

CHAPTER 3

Methodology and Treatment of the Data

Introduction

This chapter has been organized around the following topics: (a) Methodology, (b) Participants, (c) Instruments, (d) Design, (e) Procedure, (f) Treatment of the Data, (g) Summary. Tenino High School's English department had implemented its third vocabulary curriculum over the course of four years. The researcher wanted to see if the students would retain more vocabulary words if vocabulary visuals were implemented along with the regular vocabulary curriculum as opposed to only using the provided curriculum.

Methodology

The researcher chose to do a descriptive/quasi-experimental research project. The researcher wanted to determine if using a new approach (vocabulary visuals) to teaching vocabulary curriculum would be more successful and students would retain more information. Experimental research determined relationships

between causes and effects. According to Gay (2009), there were many steps involved in experimental research, such as: “selecting and defining a problem, selecting participants and measuring instruments, preparing a research plan, executing procedures, analyzing the data, and formulating conclusions” (p. 240). Experimental research also involved the formulation of a hypothesis and the researcher sought to prove the hypothesis through direct interaction with the participants. Descriptive research or survey research, on the other hand, “determines and describes the way things are; involves collecting numerical data to test hypotheses or answer questions about the current subject of study” (p. 601).

The researcher first began the study with a review of literature conducted through Heritage University’s on-line databases, internet search engines and books. The researcher obtained data during the first and second quarters of the 2010-2011 school year at Tenino High School (THS). Students were given a 100 word cumulative vocabulary test at the beginning of the first quarter. The test was repeated at the end of the second quarter. The purpose of the research was to test the hypothesis and determine whether or not a cause and effect relationship existed between vocabulary visuals and vocabulary test scores.

The researcher’s next step was descriptive research in the form of a post-test survey. All participants in the experimental group received the survey. The

survey was used to determine the confidence levels of the participants in the experimental group after receiving the treatment of the vocabulary visuals in addition to the regular vocabulary curriculum.

Participants

According to OSPI, Tenino High School consisted of 201 male students and 217 female students. The percentage of free and reduced lunch was 33%. The school was rural in nature and had a low turnover rate. There were 24 students enrolled in the Advanced Placement English course and 51 students enrolled in Special Education. The ethnicities of the students at the high school were: 91.4% White, 2.6% Hispanic, 1.9% Asian/Pacific Islander, 1.2% American Indian and 0.7% Black. English was the primary language spoken, which consisted of 93.6% of the students. English as a second language consisted of 6.4% of the student population.

The experimental group consisted of 41 ninth grade students in the Tenino High School. There were 25 male participants and 16 female participants. Of the 41 participants, 2 were Hispanic and 1 was Pacific Islander. Three of the participants (all males) were also on 504 Plans.

The control group consisted of 31 ninth grade students in the Tenino High School. There were 11 male participants and 20 female participants. Of the 31

participants, 2 were Hispanic and 1 was multicultural. One participant (female) was on a 504 Plan and 2 participants (one male and one female) were also in Special Education classes.

Instruments

Two instruments were used in the gathering of the data. The vocabulary test #15 from The Word Within The Word was the assessment of choice. This assessment was the assessment used with all ninth grade students at the end of the second quarter. The assessment was given to all the participants in the study in September 2010 and again in January 2011. The classroom teachers administered the vocabulary assessment. The assessment was distributed to both the control group and the experimental group. Students were told to fill in as many of the answers to the 100 stems as possible. Participants were informed that this was a pre-test to determine growth by the end of the second quarter. Scores from the assessment were tabulated and graphed (see Appendix D). The assessment was again given at the end of the second quarter. Participants were instructed to fill in as many of the 100 stems as they could remember. Scores from the assessment were tabulated and graphed (see Appendix D).

The second instrument used for this study was in the form of a survey. The survey asked the participants questions about their perceptions of the

vocabulary tests and their attitudes about the vocabulary visuals. The survey was used to determine participants' confidence level of taking the vocabulary test after using the vocabulary visuals. The survey consisted of ten questions. The scale range was strongly agree, agree, disagree or strongly disagree. Participants were asked to circle the choice that corresponded to their feelings most accurately. The survey was only administered to the experimental group since the survey asked questions about confidence levels after using the vocabulary visuals.

The participants were already pre-selected into classes before the study began, so a validity issue was present. Because participants were already in designated classes, differences may have already been present. To limit the effect of this issue, the researcher chose to study the whole ninth grade class. The ethnicity make-up of both groups was fairly even. Both groups were pretty close in regards to number of participants. The experimental group had a larger number of male participants than the control group, and the control had a larger number of female participants. The experimental group had three students on 504 plans and the control group had one 504 plan student and two students who were also in special education classes; therefore, both groups had lower level participants.

The issue of validity was not present with the instrument of choice. The same vocabulary assessment was used for both the pre-test and the post-test. The

pre-test and post-test were administered by the same teachers. The testing procedures for both the pre-test and post-test and for both the experimental group and the control group were identical. The vocabulary test used was objective and measured how many word stems the participants had retained between the pre-test and the post-test. The researcher's bias was insignificant because the testing procedures were consistent and a subjective assessment tool was not present.

Design

A single-variable design was used in this particular study. The variable that was manipulated was the intervention of the vocabulary visuals with the experimental group. The control group received no additional support beyond the vocabulary curriculum. Since the groups were selected prior to the study, it falls into the category of a quasi-experimental study. Because the classrooms were selected before the study began, a true experimental design was impossible. Both the experimental group and the control group were pre-tested using the vocabulary 15 test. The experimental group received the intervention of the vocabulary visuals. Both the experimental group and the control group were post-tested using the same assessment instrument (vocabulary 15 test).

Procedure

The following procedures were implemented:

1. Permission to conduct research at Tenino High School was granted by Principal Bradley Ramey (see Appendix A).
2. A review of literature was conducted on all four literature sets at Heritage University, Tenino High School, through databases and the Internet.
3. A partnership was formed with one other teacher at THS for the purpose of a control group.
4. A pretest was given to all students; both the experimental group and the control group at the beginning of September 2010 (see Appendix B).
5. Students were given instruction using the use of visuals (see Appendix C). Pictures of the vocabulary words and the vocabulary words were placed on the board on Mondays. Each picture and word was placed on one sheet of 8 ½ by 11 inch paper and taped to the front of the white board.
6. Students received the vocabulary packet, with words of the week on the front, on Mondays. The assignment in the packet was explained by the researcher. The teacher and the class did the first five analogies together and the last five in small groups. The written short-answer questions were done individually by the students.
7. The words and pictures were reviewed each day of the week. The teacher pointed to the picture and the students said the definition.

8. The students were given a vocabulary review to study from on Thursdays.
The students were also given a crossword with the words as clues and they must place the definition in the crossword to complete. The review sheet was used for reference to this.
9. The students were given a quiz each Friday on the words for the week and some review words. The quizzes were cumulative.
10. A post test was given to both the experimental group and the control group at the end of January 2011 (see Appendix B).
11. Results were tabulated and graphed on both the pretest and the post test (see Appendix D).
12. A survey was administered to the students in the experimental group (see Appendix E).
13. Results of the survey were tabulated and graphed (see Appendix F).
14. Results of the study were examined, evaluated, and conclusions were drawn.
15. A meeting was conducted to determine the effectiveness of the program and to make a decision in regards to future implementation of vocabulary visuals in vocabulary curriculum across grade levels.

Treatment of Data

The data collected from both the experimental group and the control group for both the pre test and the post test were calculated using Microsoft Excel. The students were given a letter in place of their name. Students were separated and labeled according to male and female. The pre test and post test scores were entered. Another column was created to calculate each student's growth from the pre test to the post test. A graph of the mean scores was tabulated for the control group and the experimental group. A graph of the average growth was tabulated for the control group and the experimental group. The growth for each student was also entered using the STATPAK program. The STATPAK program identified the mean, mode, and t-score values of the growth the researcher collected.

The survey given to the experimental group was also tabulated using the Microsoft Excel Program. Students were given a letter in place of their name. Students were separated from male and female. Each survey item was entered into a different column with the question number located as the header. The number the student chose, on a scale of 1-4, was entered in the columns. The researcher graphed the responses of each question distinguishing male from female. The researcher was able to use the mean score of the males' responses

and compare the same question to the females' responses. Results were also graphed for each of the ten survey items.

Summary

This chapter was designed to review the methodology and treatment of data related to the September and January vocabulary test of the entire freshman class at Tenino High School. This chapter also reviewed the methodology and treatment of data related to the survey given to the experimental group regarding confidence levels at Tenino High School. The analysis of data and findings from this study are reported in Chapter 4.

CHAPTER 4

Analysis of the Data

Introduction

Chapter 4 has been organized around the following topics: (a) Description of the Environment, (b) Hypothesis, (c) Results of the Study, (d) Findings and (e) Summary.

Description of the Environment

This project was delimited to one ninth grade class over the course of two quarters at Tenino High School in the Tenino School District, located in Tenino, Washington. The Tenino School District had over 1,300 students enrolled each year. There were four schools in the district: Parkside Elementary School, Tenino Elementary School, Tenino Middle School and Tenino High School.

Tenino High School consisted of 201 male students and 217 female students. The percentage of free and reduced lunch was 33%. The school was

rural in nature and had a low turnover rate. There were 24 students enrolled in the Advanced Placement English course and 51 students enrolled in Special Education. In addition, during the 2010-2011 school year, THS employed 26 certificated teachers. Some of those teachers were also placed at the middle school for half of the day. The ethnicities of the students at the high school were: 91.4% White, 2.6% Hispanic, 1.9% Asian/Pacific Islander, 1.2% American Indian and 0.7% Black. English was the primary language spoken, which consisted of 93.6% of the students. English as a second language consisted of 6.4% of the student population.

The study was conducted during the 2010-2011 school year. A one hundred word root and stem test was the assessment tool of choice for the study to assess student success. The test was administered twice during the course of the study: once at the beginning of the first quarter and once at the end of the second quarter.

The experimental group consisted of 41 ninth grade students in the Tenino High School. There were 25 male participants and 16 female participants. Of the 41 participants, 2 were Hispanic and 1 was Pacific Islander. Three of the participants (all males) were also on 504 Plans. The experimental group was taught by a teacher with five years of experience.

The control group consisted of 31 ninth grade students in the Tenino High School. There were 11 male participants and 20 female participants. Of the 31 participants, 2 were Hispanic and 1 was multicultural. One participant (female) was on a 504 Plan and 2 participants (one male and one female) were also in Special Education classes. The control group was taught by a teacher with ten years of experience.

Hypothesis

Students who receive visual aids in vocabulary curriculum will show a higher class average on vocabulary tests than students who do not receive visual aids. After using vocabulary visuals with the vocabulary curriculum, students will express more confidence about taking vocabulary tests.

Null Hypothesis

Students who receive visual aids in vocabulary curriculum will show just as high a class average on vocabulary tests as students who do not receive visual aids. After using vocabulary visuals with the vocabulary curriculum, students will not express more confidence about taking vocabulary tests.

Results of the Study

In order to determine whether or not the hypothesis could be accepted, the researcher collected and analyzed the data. The data was analyzed using the

STATPAK program and the Microsoft Excel program. The calculations reported involve the sum, mean, t-scores and degrees of freedom.

Table 1 depicted the scores on the vocabulary assessment for the control group. The vocabulary assessment was given twice over the course of the study, once at the beginning of September 2010 and once at the end of January 2011. Table one showed both the pre test scores and the post test scores for each student in the control group. The growth was also displayed by taking the post test scores and subtracting the pre test scores. The growth demonstrated the improvement the students made from the pre test to the post test. The growth for each student was calculated with a sum score of 1583 and a mean score of 51.06. The mean score was representative of the average score growth for the students in the control group. Consequently, the average increase of vocabulary words answered correctly for students in the control group was 51.06.

Table 1

Vocabulary Scores for Pre and Post Test for Control Group

Student	Gender	Pre	Post	Growth
A	M	2	35	33
B	M	0	11	11
C	M	0	49	49
D	M	5	61	56
E	M	0	53	53
F	M	2	40	38
G	M	1	67	66
H	M	0	98	98
I	M	2	98	96
J	M	5	90	85
K	M	1	93	92
L	F	0	12	12
M	F	0	28	28
N	F	3	19	16
O	F	0	88	88
P	F	0	23	23
Q	F	1	15	14
R	F	2	58	56
S	F	2	40	38
T	F	1	34	33
U	F	0	77	77
V	F	0	19	19
W	F	5	66	61
X	F	1	38	37
Y	F	1	64	63
Z	F	0	65	65
AA	F	1	50	49
BB	F	1	27	26
CC	F	2	39	37
DD	F	3	100	97
EE	F	4	71	67
Sum		45	1628	1583
Mean		1.45	52.52	51.06

Table 2 depicted the scores on the vocabulary assessment for the experimental group. The vocabulary assessment was given twice over the course of the study, once at the beginning of September 2010 and once at the end of January 2011. Table two showed both the pre test scores and the post test scores for each student in the experimental group. The growth was also displayed by taking the post test scores and subtracting the pre test scores. The growth demonstrated the improvement the students made from the pre test to the post test. The growth for each student was calculated with a sum score of 2679 and a mean score of 65.34. The mean score was representative of the average score growth for the students in the experimental group. Consequently, the average increase of vocabulary words answered correctly for students in the experimental group was 65.34.

Table 2

Vocabulary Scores for Pre and Post Test for Experimental Group

Student	Gender	Pre	Post	Growth
A	M	0	72	72
B	M	1	71	70
C	M	2	82	80
D	M	0	87	87
E	M	0	23	23
F	M	1	53	52
G	M	0	11	11
H	M	5	72	67
I	M	0	94	94
J	M	0	61	61
K	M	4	95	91
L	M	0	87	87
M	M	0	44	44
N	M	0	30	30
O	M	1	65	64
P	M	0	52	52
Q	M	0	83	83
R	M	4	74	70
S	M	1	82	81
T	M	2	56	54
U	M	2	100	98
V	M	4	91	87
W	M	0	45	45
X	M	2	83	81
Y	M	0	74	74
Z	F	0	70	70
AA	F	3	87	84
BB	F	0	93	93
CC	F	0	59	59
DD	F	0	33	33
EE	F	0	60	60
FF	F	0	44	44
GG	F	0	44	44

HH	F	0	90	90
II	F	3	51	48
JJ	F	0	81	81
KK	F	0	57	57
LL	F	0	48	48
MM	F	0	69	69
NN	F	0	69	69
OO	F	0	72	72
SUM		35	2714	2679
Mean		0.85	66.20	65.34

Figure 1 portrayed the variation between the mean scores for the control group and the experimental group on the vocabulary assessment. The graph depicted both the experimental groups' scores and the control groups' scores on the pre test done in September 2010 and the experimental groups' scores and the control groups' scores on the post test done in January 2011.

Figure 1

Vocabulary Mean Score Comparison

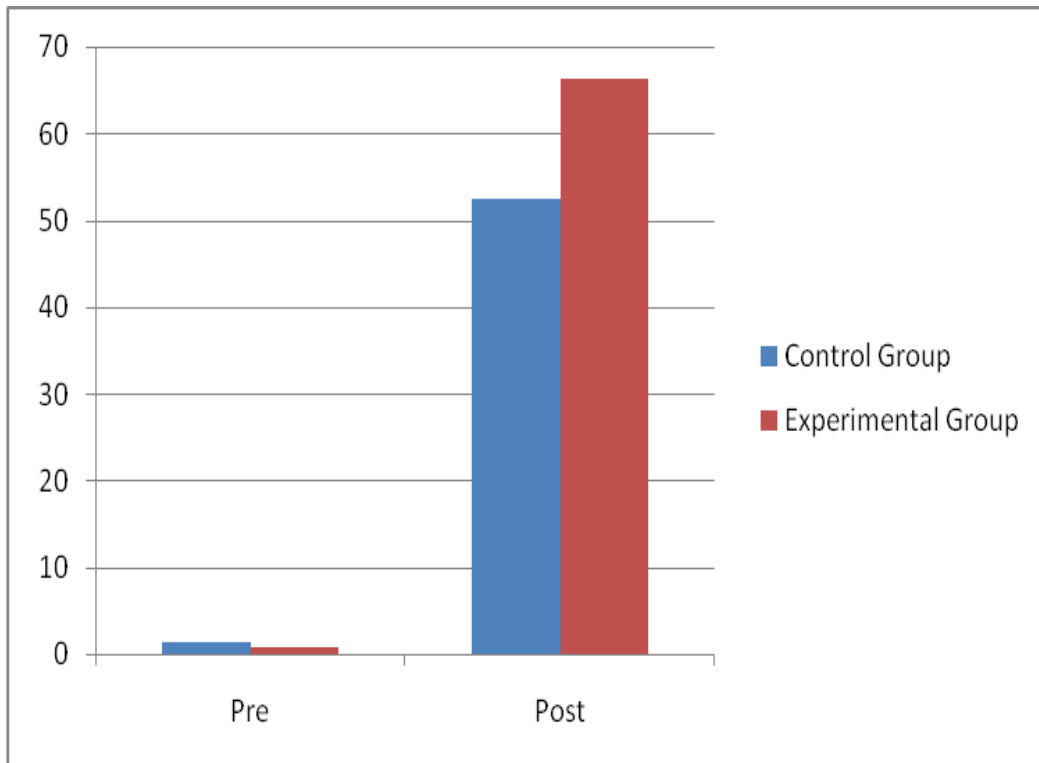


Figure 2 signified the growth overall for the control group and the experimental group. The growth was determined by calculating the difference between the pre test that was taken in September 2010 and the post test that was taken in January 2011. The control group displayed a growth of 51.06 from September 2010 to January 2011. The experimental group displayed a growth of 65.34 from September 2010 to January 2011.

Figure 2

Average Growth per Student on Vocabulary Test

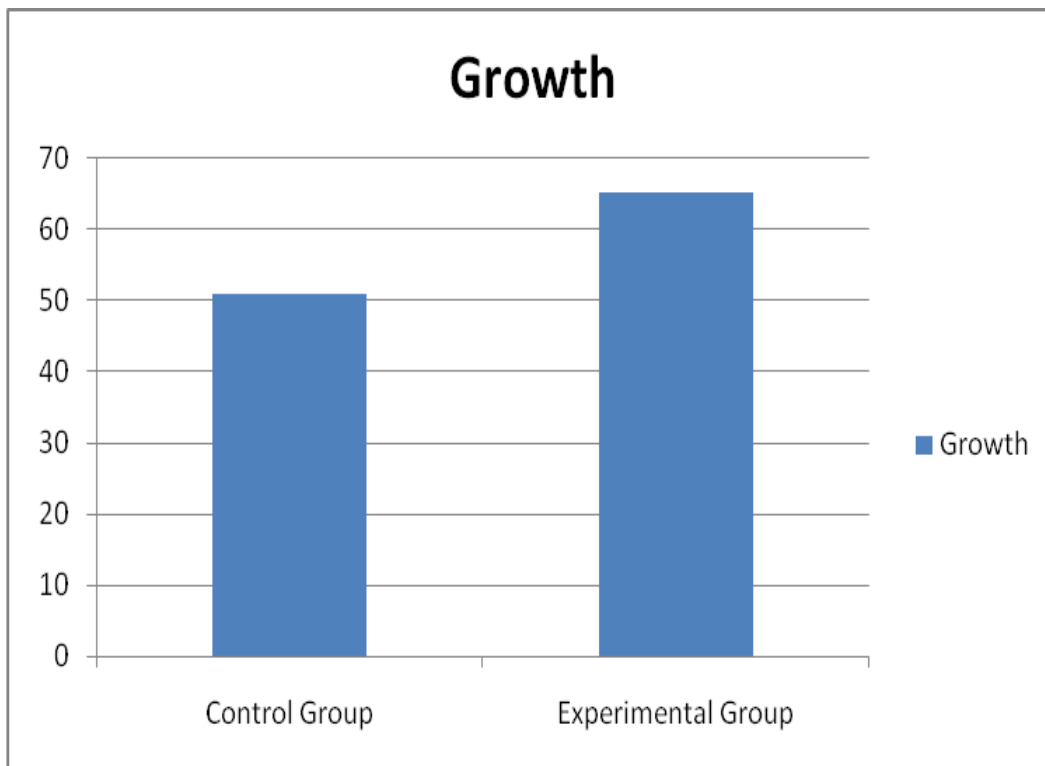


Table 3 displayed data results for a t-test for Independent Groups using the STATPAK program. The growth values, from both the experimental group and the control group for the vocabulary test, were calculated by the researcher using this program. Formulas and charts were also used from the textbook Educational Research: Competencies for Analysis and Applications by Gay, Mills and Airasian (2009).

Table 3

Control Group and Experimental Group t-score comparison

Statistics	Value
No. of Scores in Experimental Group	41
Sum of Scores in Experimental Group	2679
Mean Score of Experimental Group	65.34
No. of Scores in Control Group	31
Sum of Scores in Control Group	1583
Mean Score of Control Group	51.05
t-value	2.52
Degrees of Freedom	70
Distribution of t at $\alpha = 0.05$	2.000

Figure 3 depicted data taken from the vocabulary survey given after the post vocabulary test. The scores were reported using a scale from 1-4. A score of 1 represented a “Strongly Disagree” response. A score of 2 represented a “Disagree” response. A score of 3 represented an “Agree” response. A score of 4 represented a “Strongly Agree” response. Figure 3 showed the mean score for each student’s response to question 3. The mean score indicated that both males and females indicated an answer of agree or strongly agree.

Figure 3

Mean Scores for Survey Question 3

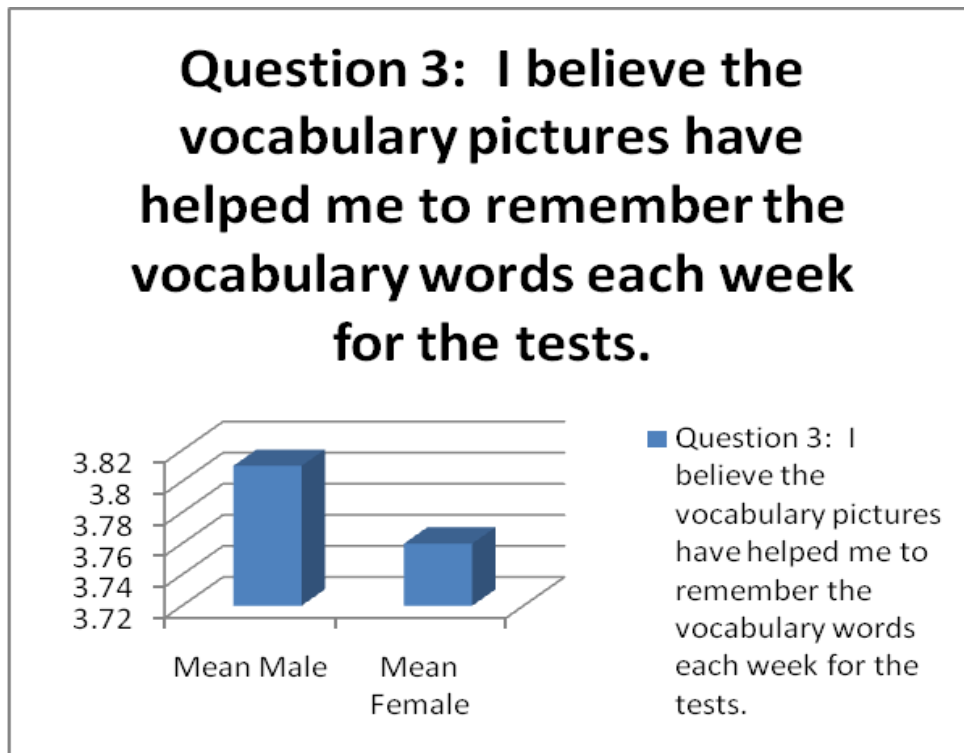


Figure 4 depicted data taken from the vocabulary survey given after the post vocabulary test. The scores were reported using a scale from 1-4. A score of 1 represented a “Strongly Disagree” response. A score of 2 represented a “Disagree” response. A score of 3 represented an “Agree” response. A score of 4 represented a “Strongly Agree” response. Figure 4 showed the mean score for each student’s response to question 4. The mean score indicated that both males and females indicated an answer of agree or strongly agree.

Figure 4

Mean Scores for Survey Question 4

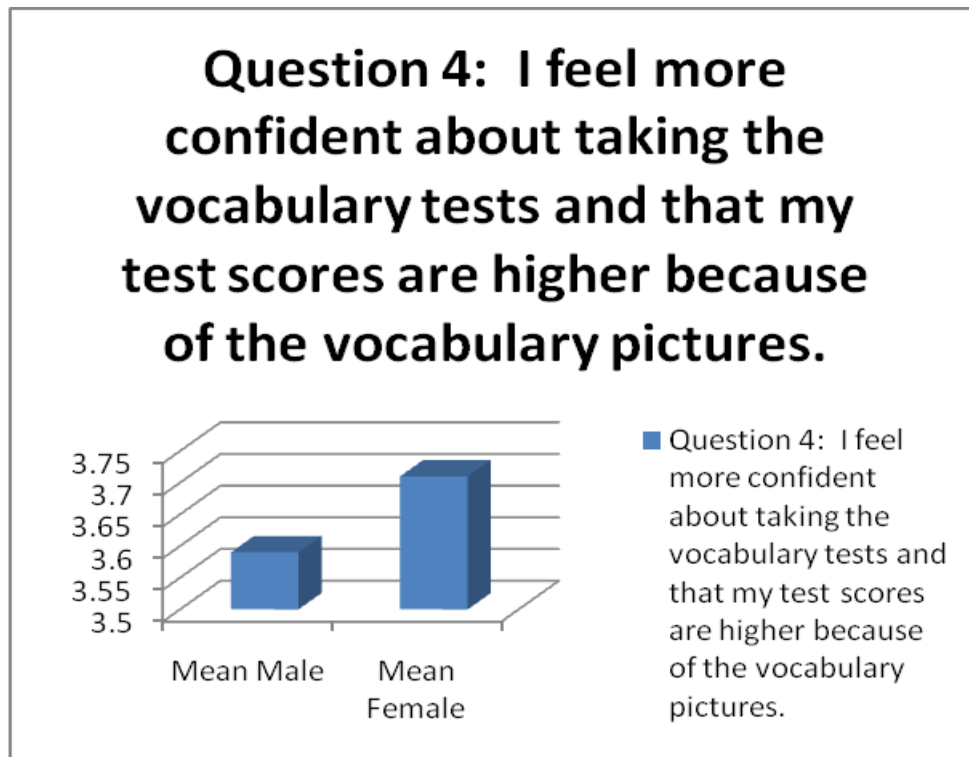


Figure 5 depicted data taken from the vocabulary survey given after the post vocabulary test. The scores were reported using a scale from 1-4. A score of 1 represented a “Strongly Disagree” response. A score of 2 represented a “Disagree” response. A score of 3 represented an “Agree” response. A score of 4 represented a “Strongly Agree” response. Figure 5 showed the mean score for each student’s response to question 7. The mean score indicated that both males and females indicated an answer of agree or strongly agree.

Figure 5

Mean Scores for Survey Question 7

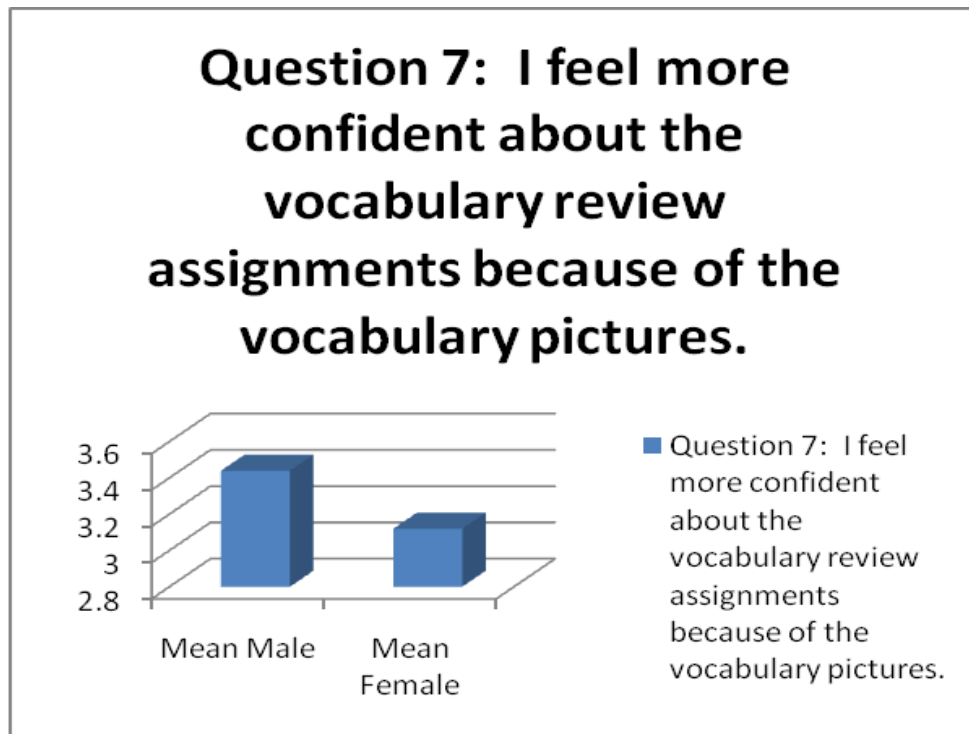


Figure 6 depicted data taken from the vocabulary survey given after the post vocabulary test. The scores were reported using a scale from 1-4. A score of 1 represented a “Strongly Disagree” response. A score of 2 represented a “Disagree” response. A score of 3 represented an “Agree” response. A score of 4 represented a “Strongly Agree” response. Figure 6 showed the mean score for each student’s response to question 8. The mean score indicated that both males and females indicated an answer of agree or strongly agree.

Figure 6

Mean Scores for Survey Question 8

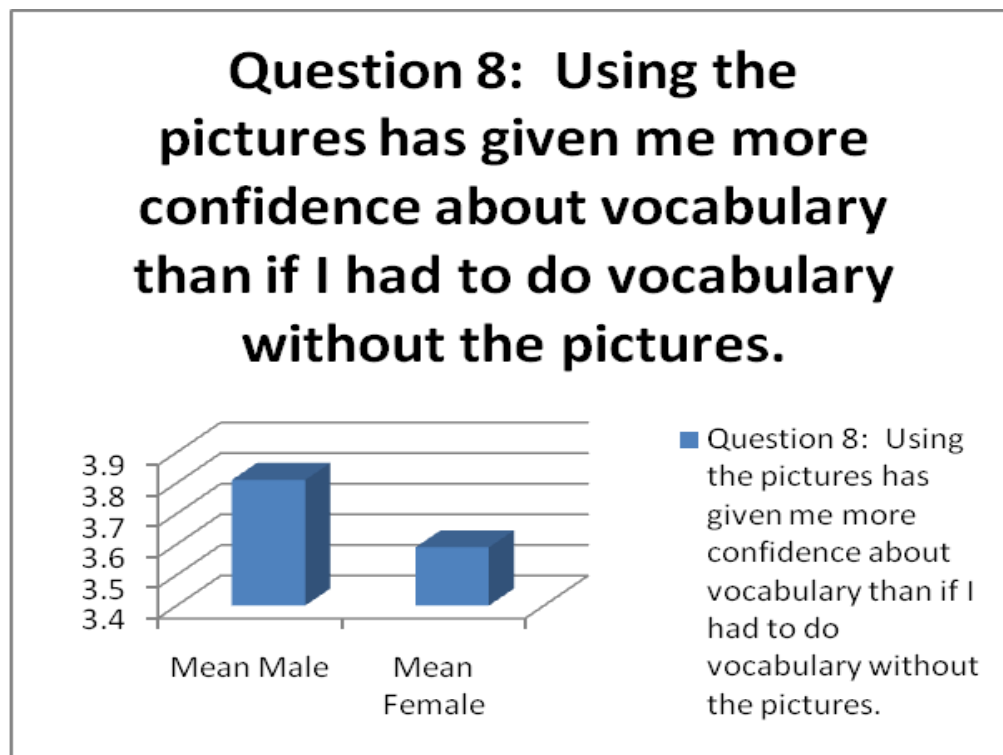


Figure 7 depicted data taken from the vocabulary survey given after the post vocabulary test. The scores were reported using a scale from 1-4. A score of 1 represented a “Strongly Disagree” response. A score of 2 represented a “Disagree” response. A score of 3 represented an “Agree” response. A score of 4 represented a “Strongly Agree” response. Figure 7 showed the mean score for each student’s response to question 9. The mean score indicated that both males and females indicated an answer of agree or strongly agree.

Figure 7

Mean Scores for Survey Question 9

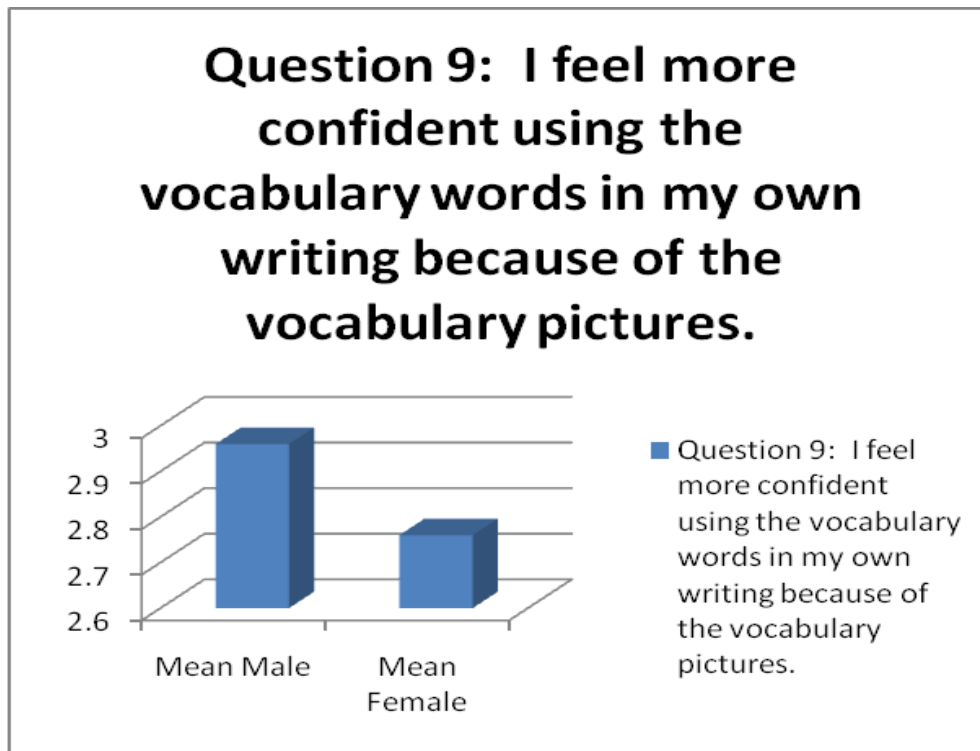
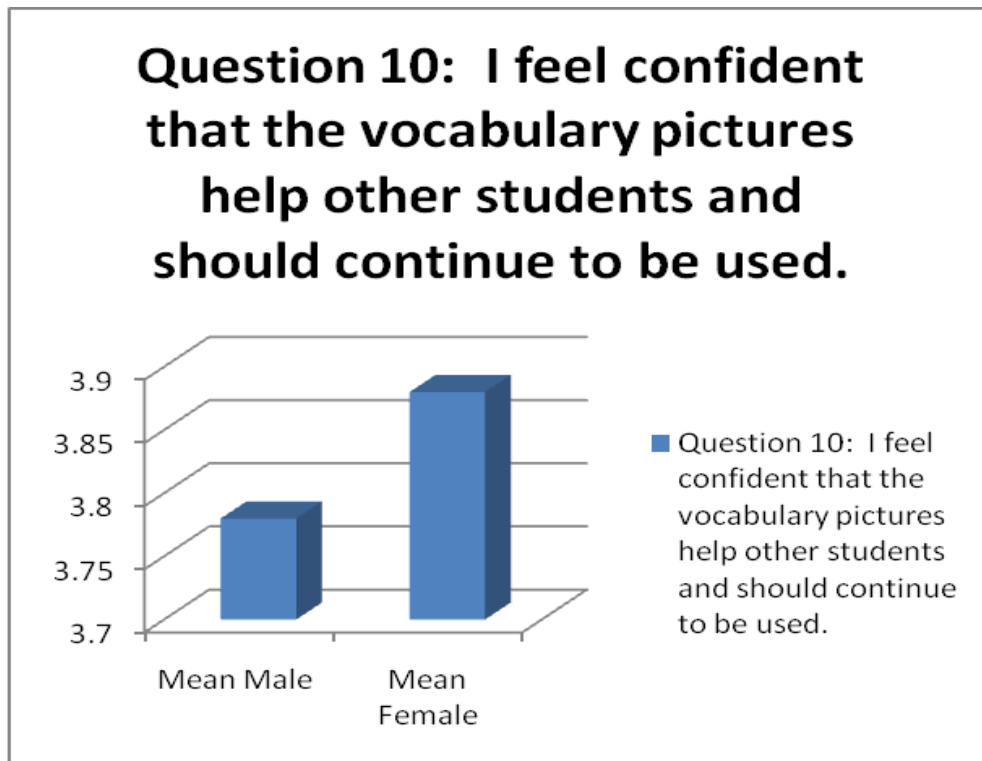


Figure 8 depicted data taken from the vocabulary survey given after the post vocabulary test. The scores were reported using a scale from 1-4. A score of 1 represented a “Strongly Disagree” response. A score of 2 represented a “Disagree” response. A score of 3 represented an “Agree” response. A score of 4 represented a “Strongly Agree” response. Figure 8 showed the mean score for each student’s response to question 10. The mean score indicated that both males and females indicated an answer of agree or strongly agree.

Figure 8

Mean Scores for Survey Question 10



Findings

T-test for group x (experimental group), consisting of 41 participants, showed sum of scores being 2679, mean scores of 65.34 and SS of 17261.22. The t-test for group y (control group), consisting of 31 participants, showed sum of scores being 1583, mean scores of 51.06 and SS of 22269.87. A t value was used using STATPAK with a score of 2.52 and degrees of freedom being 70.

Figure 9

STATPAK Results

t - TEST FOR INDEPENDENT SAMPLES		
Statistic	Values	
No. of Scores in Group X	41	Group X
Sum of Scores in Group X	2679.0000	Enter Score
Mean of Group X	65.34	Calculate
Sum of Squared Scores in Group X	192311.00	Clear Scores
SS of Group X	17261.22	Print
No. of Scores in Group Y	31	Group Y
Sum of Scores in Group Y	1583.0000	
Mean of Group Y	51.06	
Sum of Squared Scores in Group Y	103105.00	
SS of Group Y	22269.87	
t - Value	2.52	
Degrees of freedom	70	Main Menu

Table 1 represented the vocabulary test scores for every student in the control group. The table displayed the pre test scores, the post test scores and the growth of each student from September 2010 to January 2011. Table 2 represented the vocabulary test scores for every student in the experimental group. The table displayed the pre test scores, the post test scores and the growth of each student from September 2010 to January 2011. Figure 1 showed the mean scores between the control group and the experimental group. The control group displayed a pre mean score of 1.45 and a post mean score of 52.52. The experimental group displayed a pre mean score of 0.85 and a post mean score of 66.20. Figure 2 showed the average growth scores between the control group and the experimental group. The control group displayed a growth score of 51.06 and the experimental group displayed a growth score of 65.34. Therefore, the experimental group showed a growth of 14.28 more than the control group. The growth rate displayed a t-value of 2.52. The t-value of 2.52 was over the required t-value of 2.000 required to accept the hypothesis. Therefore, the hypothesis that students who receive visual aids in vocabulary curriculum will show a higher class average on vocabulary tests than students who do not receive visual aids was accepted and supported by the data. The null hypothesis that students who receive visual aids in vocabulary curriculum will show just as high a class average on

vocabulary tests as students who do not receive visual aids was rejected because it wasn't supported by the data.

Based upon the findings taken from the vocabulary survey, many conclusions could be drawn. Figures 3-8 depicted that the average responses of both males and females indicated a response of agree or strongly agree. The responses are as follows:

1. Student believed the vocabulary pictures helped them to remember the vocabulary words each week for the tests.
2. Students felt more confident about taking the vocabulary tests and that their test scores were higher because of the vocabulary pictures.
3. Students felt more confident about the vocabulary review assignments because of the vocabulary pictures.
4. Using the pictures has given the students more confidence about vocabulary than if they had to do vocabulary without the pictures.
5. Students felt more confident using the vocabulary words in their own writing because of the vocabulary pictures.
6. Students felt confident that the vocabulary pictures helped other students and should continue to be used.

The findings from the survey did accept the hypothesis that after using vocabulary visuals with the vocabulary curriculum, students will express more confidence about taking vocabulary tests, so it was accepted. Therefore, the null hypothesis that after using vocabulary visuals with the vocabulary curriculum, students will not express more confidence about taking vocabulary tests was rejected.

Discussion

The results of this study were fairly consistent with the researcher's expectations. The researcher believed that the vocabulary pictures would raise both test scores and confidence levels. The researcher didn't, however, determine that the results would be as significant as was found. The hypothesis was that students who receive visual aids in vocabulary curriculum will show a higher class average on vocabulary tests than students who do not receive visual aids. The results from the data have proven this hypothesis to be true and were accepted by the researcher. The second part of the hypothesis stated that after using vocabulary visuals with the vocabulary curriculum, students will express more confidence about taking vocabulary tests was also found to be true. The researcher knew that the students enjoyed the vocabulary pictures and believed

that they helped their test scores, so the results of the vocabulary survey were as expected by the researcher.

Based upon the data, that the experimental group's scores were significantly higher than the control group's scores, the researcher can generalize that if the study were conducted over a longer period of time, the growth between the experimental group and the control group would become even further apart. It would be expected that the experimental group would continue to have more growth than the control group due to the vocabulary pictures.

According to the research conducted from three different sources, Gilbert, Nunley and Marcus, they all found that offering multiple learning style opportunities to people at one time would benefit them and increase learning. The research conducted stated that very few people solely learn from auditory information. Majority of people learn from visually presented information and even prefer this method of presentation over others. This research supports the researcher's data. The students (experimental group) who were presented with the vocabulary pictures retained more vocabulary words than students (control group) who were not presented with the vocabulary pictures.

Summary

This chapter was designed to analyze the data and identify the findings. From the data, the hypothesis was supported and the null hypothesis was rejected. The experimental group showed significant growth over the control group with the vocabulary test scores. The experimental group also believed that the vocabulary visuals helped them learn the vocabulary words, gave them more confidence about taking the tests and that the vocabulary visuals should continue to be used. Consequently, the hypothesis was supported by the data collected.

CHAPTER 5

Summary, Conclusions and Recommendations

Introduction

This chapter has been organized around the following topics: (a) Introduction, (b) Summary, (c) Conclusions and (d) Recommendations.

Summary

Three dissimilar vocabulary programs were implemented over the course of four years. Each vocabulary program proved unsuccessful for student achievement and mastery. When the third vocabulary program was implemented at THS, the researcher desired for the program to be a success. The English department had looked at several programs and decided on a program that included Latin and Greek stems, roots and suffixes called The Word Within the Word. The researcher conducted research and found that people learned better when multiple learning styles were addressed simultaneously. There was a strong correlation between multiple learning styles presented at once and maximum learning. The researcher created vocabulary visuals to present along with the vocabulary words and packets. The purpose of this study was to determine if students who received vocabulary visuals along with the vocabulary curriculum would score higher on tests and have more confidence about vocabulary.

Four separate freshman classes participated in the study. There were two separate groups involved: the experimental group and the control group. The control group received the standard vocabulary curriculum in which the vocabulary review is incorporated, created by either the control group teacher or the researcher. The experimental group received the standard vocabulary curriculum in which the vocabulary review is incorporated, created by either the control group teacher or the researcher. In addition, the experimental group also received instruction with the use of vocabulary visuals created by the researcher. The vocabulary visuals intervention took place from September 2010 through January 2011. Both the control group and the experimental group took the vocabulary pre test and post test, once in September and once in January. The vocabulary test scores were used to measure the growth to establish whether or not the hypothesis could be accepted or rejected.

Conclusions

Once the study was conducted, data was gathered and evaluated by the researcher; and it was determined that the data supported the hypothesis. The vocabulary visuals intervention used did result in significant gains on the vocabulary test. In addition, the survey indicated that the vocabulary visuals intervention did result in higher confidence levels of the students.

The vocabulary test results for the control group for the pre test, post test and the growth between both tests was displayed in Table 1. The vocabulary test results for the experimental group for the pre test, post test and the growth between both tests was displayed in Table 2. The average growth for both the control group and the experimental group was displayed in Figure 2. The average growth for the control group was 51.06 and the average growth for the experimental group was 65.34. Consequently, the experimental group showed a growth of 14.28 over the control group. The t-value resulted in a value of 2.52. The t-value of 2.52 more than met the required value of 2.00 at $p=0.05+$ and thus the hypothesis was accepted.

Recommendations

The literature reviewed indicated that when students were presented with more than one learning style, their particular learning style was met and more learning was achieved. Studies have shown that when students' vocabulary retention improves, their reading comprehension levels also improve. Therefore, students would score higher on state standardized tests.

The experimental group in this study showed a significant growth over that of the control group. This researcher recommends that all English classes at THS implement the use of the vocabulary visuals to raise students' vocabulary test

scores, confidence levels and state standardized test scores. Over the course of one entire school year, it is believed by the researcher that the vocabulary test scores would continue to grow significantly higher with the use of vocabulary visuals than if vocabulary visuals were not used.

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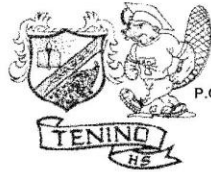
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Appendix A



TENINO HIGH SCHOOL

P.O. BOX 4024/500 WEST SECOND STREET
TENINO, WASHINGTON 98589
(360) 264-3500

Brad Ramey
Principal

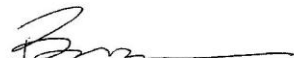
Richard Staley
Director of Curriculum &
Assessment / Principal

Jeff Zenisek
Athletic Director

Carol Benek
Counselor

Letter of Permission to Conduct Research

I, Brad Ramey, give Joanna Munsell permission to conduct research for the Masters Degree at Heritage University during the 2010-2011 academic school year at Tenino High School. The research will be conducted using the freshman class. The hypothesis to be determined is students who receive visual aids in vocabulary curriculum will show a higher class average on vocabulary tests than students who do not receive visual aids. After using vocabulary visuals with the vocabulary curriculum, students will express more confidence about taking vocabulary tests.


Principal's Name, School Name

9/2/2010
Date

Appendix B

The Word Within the Word- Test #15

Efflux	_____	SOMatic	_____
DICHotomy	_____	ZYGote	_____
PHYLOgeny	_____	TRANSducer	_____
DEXTERous	_____	TOXic	_____
DORSal	_____	ZYMurgy	_____
ARTHRitis	_____	POSTillion	_____
GASTROenteritis	_____	PROvide	_____
teleKINesis	_____	PODiatrist	_____
myOPIA	_____	PLEOmorphic	_____
carniVORe	_____	SCHIZOphrenia	_____
HOLOcaust	_____	RHIZome	_____
corpuLENT	_____	TRICHina	_____
rubidIUM	_____	euTHOPHication	_____
MACROcosm	_____	comMEMorate	_____
helioTROPe	_____	anthropoPHAGy	_____
PHOSphene	_____	glucOSE	_____
HAPLOid	_____	MESOmorph	_____
pentaGON	_____	VACation	_____
BRANCHIOpod	_____	INFRAlapsarian	_____
BRACHYcephalic	_____	MYOcardium	_____
BRACHIOpod	_____	OLIGOcene	_____
BLASTOgenesis	_____	LEUKOcyte	_____
haLITE	_____	hypoGLYCemia	_____
pteroDACTYL	_____	CHLORine	_____
VENTRicle	_____	FILiform	_____
DIPLOma	_____	AERodynamics	_____
ALBumen	_____	ABrogate	_____
STRUCture	_____	CYANide	_____
ERYTHROMycin	_____	anEMIA	_____
inteROGAtive	_____	APOplexy	_____
SENate	_____	AGent	_____
LUMinous	_____	FICtion	_____
CARNage	_____	VERTex	_____
MUTAgenic	_____	UNIform	_____
LOQUacious	_____	PALEOntology	_____
GENder	_____	THEOcraCy	_____
COTerminous	_____	GRAPHite	_____
astroNOMY	_____	INGest	_____
disTRACtion	_____	GESTation	_____
METAphor	_____	ANIMus	_____
andrOID	_____	DEMigod	_____
ECTOthermic	_____	ACRONm	_____
OSTEOblast	_____	ORNITHology	_____
ectoZOa	_____	DIALogue	_____
DERMatitis	_____	folliCLE	_____
polyGAMY	_____	SEcede	_____
TEMPORize	_____	TETRAhydroxide	_____
MIGRation	_____	EPICenter	_____
OCTAgenarian	_____	CHRONicle	_____
CONTRArY	_____	GEOmetry	_____

Appendix C

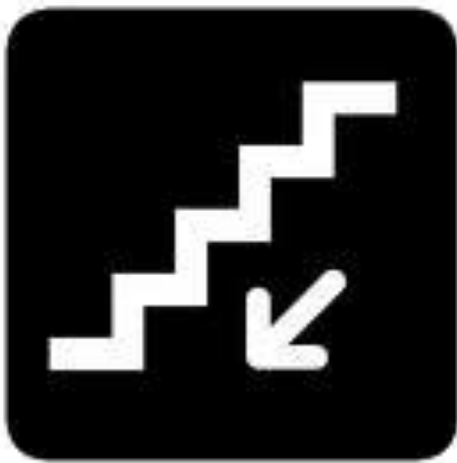
The following are examples of vocabulary visuals on a smaller scale. When used with the students, the picture would take up most of the page and the vocabulary word would be larger.



Com



Con



De



Dis

Appendix D

Vocabulary Scores for Pre and Post Test for Control Group

Student	Gender	Pre	Post	Growth
A	M	2	35	33
B	M	0	11	11
C	M	0	49	49
D	M	5	61	56
E	M	0	53	53
F	M	2	40	38
G	M	1	67	66
H	M	0	98	98
I	M	2	98	96
J	M	5	90	85
K	M	1	93	92
L	F	0	12	12
M	F	0	28	28
N	F	3	19	16
O	F	0	88	88
P	F	0	23	23
Q	F	1	15	14
R	F	2	58	56
S	F	2	40	38
T	F	1	34	33
U	F	0	77	77
V	F	0	19	19
W	F	5	66	61
X	F	1	38	37
Y	F	1	64	63
Z	F	0	65	65
AA	F	1	50	49
BB	F	1	27	26
CC	F	2	39	37
DD	F	3	100	97
EE	F	4	71	67
Sum		45	1628	1583
Mean		1.45	52.52	51.06

Vocabulary Scores for Pre and Post Test for Experimental Group

Student	Gender	Pre	Post	Growth
A	M	0	72	72
B	M	1	71	70
C	M	2	82	80
D	M	0	87	87
E	M	0	23	23
F	M	1	53	52
G	M	0	11	11
H	M	5	72	67
I	M	0	94	94
J	M	0	61	61
K	M	4	95	91
L	M	0	87	87
M	M	0	44	44
N	M	0	30	30
O	M	1	65	64
P	M	0	52	52
Q	M	0	83	83
R	M	4	74	70
S	M	1	82	81
T	M	2	56	54
U	M	2	100	98
V	M	4	91	87
W	M	0	45	45
X	M	2	83	81
Y	M	0	74	74
Z	F	0	70	70
AA	F	3	87	84
BB	F	0	93	93
CC	F	0	59	59
DD	F	0	33	33
EE	F	0	60	60
FF	F	0	44	44
GG	F	0	44	44
HH	F	0	90	90
II	F	3	51	48

JJ	F	0	81	81
KK	F	0	57	57
LL	F	0	48	48
MM	F	0	69	69
NN	F	0	69	69
OO	F	0	72	72
SUM		35	2714	2679
Mean		0.85	66.20	65.34

Appendix E

Vocabulary Survey

Circle one of the following: I am a male I am a female

For the following questions, please choose one of the following.

Strongly Agree (4) Agree (3) Disagree (2) Strongly Disagree (1)

1. I feel the vocabulary pictures selected relate directly to the definition.
(4) (3) (2) (1)
2. I feel that when I see the vocabulary pictures, I have a good idea what the vocabulary word will mean.
(4) (3) (2) (1)
3. I believe the vocabulary pictures have helped me to remember the vocabulary words each week for the tests.
(4) (3) (2) (1)
4. I feel more confident about taking the vocabulary tests and that my test scores are higher because of the vocabulary pictures.
(4) (3) (2) (1)
5. I feel more confident that I will remember the words long-term because of the vocabulary pictures.
(4) (3) (2) (1)

For the following questions, please choose one of the following.

Strongly Agree (4) Agree (3) Disagree (2) Strongly Disagree (1)

6. When I see the vocabulary word, I can also see the vocabulary picture in my mind.
(4) (3) (2) (1)
7. I feel more confident about the vocabulary review assignments because of the vocabulary pictures.
(4) (3) (2) (1)
8. Using the pictures has given me more confidence about vocabulary than if I had to do vocabulary without the pictures.
(4) (3) (2) (1)

9. I feel more confident using the vocabulary words in my own writing because of the vocabulary pictures.

(4)

(3)

(2)

(1)

10. I feel confident that the vocabulary pictures help other students and should continue to be used.

(4)

(3)

(2)

(1)

Appendix F

Vocabulary Survey Results

Name	Male	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
Student 1	Male	3	2	3	3	2	2	2	3	2	3
Student 2	Male	3	4	3	4	2	2	3	3	2	3
Student 3	Male	3	4	4	2	4	3	3	4	3	4
Student 4	Male	4	4	4	4	4	4	4	4	4	4
Student 5	Male	3	4	4	3	2	1	2	2	2	3
Student 6	Male	4	4	4	4	4	2	3	4	3	4
Student 7	Male	4	4	4	4	3	3	4	4	3	4
Student 8	Male	4	4	4	3	3	4	4	4	3	4
Student 9	Male	4	3	4	4	3	3	2	4	2	4
Student 10	Male	4	4	4	4	4	2	4	4	1	4
Student 11	Male	3	3	4	3	3	3	3	4	3	4
Student 12	Male	4	4	4	4	4	4	4	4	4	4
Student 13	Male	4	4	4	4	3	3	4	4	3	3
Student 14	Male	3	4	4	3	3	4	4	3	3	4
Student 15	Male	3	4	3	3	3	4	3	4	3	4
Student 16	Male	3	4	4	4	3	3	4	4	2	3
Student 17	Male	3	3	3	2	3	4	3	4	3	3
Student 18	Male	3	3	4	4	4	2	4	4	2	4
Student 19	Male	4	4	4	4	3	4	3	4	4	4
Student 20	Male	4	4	4	4	4	3	4	4	4	4
Student 21	Male	3	4	4	4	3	3	3	4	3	4
Student 22	Male	4	3	4	4	4	4	4	4	4	4
Student 23	Male	4	4	4	4	4	3	4	4	3	4
Student 24	Male	4	4	3	3	3	3	4	4	3	4
Student 25	Male	4	3	4	4	4	4	4	4	4	4
Student 26	Male	4	4	4	4	3	4	4	4	3	4
Student 27	Male	3	4	4	4	3	3	3	4	4	4
Student 28	Female	4	4	4	3	2	2	2	3	2	4
Student 29	Female	4	4	4	4	3	2	4	4	3	4
Student 30	Female	4	3	4	4	3	2	3	3	3	4
Student 31	Female	4	4	4	4	4	3	3	4	4	4
Student 32	Female	3	4	4	4	4	2	4	4	4	4

Student 33	Female	3	3	4	3	3	2	3	4	2	4
Student 34	Female	2	3	2	3	2	2	2	3	2	3
Student 35	Female	3	3	3	3	3	2	3	4	3	3
Student 36	Female	3	3	4	4	4	3	4	4	3	4
Student 37	Female	3	3	3	3	3	3	2	4	3	4
Student 38	Female	4	4	4	4	3	2	3	3	3	4
Student 39	Female	3	4	4	4	4	4	4	4	2	4
Student 40	Female	4	4	4	4	4	3	4	4	2	4
Student 41	Female	3	4	4	4	3	3	2	3	2	4
Student 42	Female	3	3	4	4	3	2	3	4	3	4
Student 43	Female	3	3	4	4	3	2	3	3	2	4
Student 44	Female	3	3	4	4	4	1	4	3	4	4