

A Quasi-Experimental Study of the use of Structured-Pairing and Technology to
Help English Language Learners Achieve at the Same Level
As Their English-Speaking Peers

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Table of Contents

List of Tables	2
Abstract	3
I. Introduction	5
Overview	5
Statement of the Problem	6
Hypothesis	7
Operational Definition	7
II. Review of the Literature	8
III. Methods	20
Design	20
Participants	20
Instrument	21
Procedure	22
IV. Results	24
V. Discussion	38
Implication of Results	39
Threats to Validity	40
Connections to Previous Literature	41
Implications for Future Research	42
Conclusion	42
References	44

Appendix A: Unit Test	46
Appendix B: Post Survey Experimental	51
Appendix C: Post Survey Comparison	53

List of Tables

1. Table 1: Descriptive Statistics Pre / Post Tests	11
2. Table 2: Results of T-Tests	12
3. Table 3: Ratings of Effectiveness	26
4. Table 4: Summary of Free Response Survey Items 11, 12c, 13	28
5. Table 5: Summary of Free Response Survey Items 9a-c	29
6. Table 6: Summary of Free Response Survey Items 10a-b	30
7. Table 7: Summary of Free Response Survey Items 11b-c	32
8. Table 8: Summary of Free Response Survey Items 12b-c	35
9. Table 9: Summary of Free Response Survey Items 13b-c	36

Abstract

Teachers are facing a major issue within the modern day school; how to successfully help English Language Learners (ELL) adapt to a new culture, acquire or improve English proficiency, and assimilate into the American educational system. This study focused on the strategy of incorporating technology to help ELL students learn with partners to help them understand the difficult vocabulary and concepts of a high school American Government class. Findings indicated unit test performance was inclusive for the group who used technology with a partner versus just having a partner with whom to work. Participants also completed a survey which asked them to rate and describe the helpfulness of learning strategies intended to help them. Their responses suggested that the ELL students felt technology was effective and the structured pairs were less effective at helping them. They indicated more technology would help them more. Future research with larger and varied samples (for example, of different ages or with different language backgrounds) who are enrolled in varied courses might further clarify what methods are most effective for helping ELL students succeed in American schools and curricula.

CHAPTER I

INTRODUCTION

Overview

One of the most complex issues facing teachers today is how to strategically plan and instruct the large number of English Language Learners (ELLs) that are entering their classrooms. The ELL students in the typical American Government class face an array of issues such as language acquisition, understanding of vocabulary and concepts, cultural change, and assimilation into the American educational system. The majority of teachers have little experience or training on how to ensure that these students are receiving a fair and equitable education. A recent survey of Social Studies teachers found that there is little professional development being offered and that they also need cultural training and bilingual resources and strategies for the classroom in order to be successful in teaching ELL students (Cho, S., & Reich, G.A., 2008).

The problem is prevalent across the United States. For example, in the 2019-20 school year in California alone there were 1,148,024 English learners in the public school system, who constituted 18.63 percent of the total enrollment in California public schools (CalEd, 2020). Arizona public schools, which segregated their ELL students, reported that 15% of their students were ELLs (Gandara, P., & Orfield, G., 2010). ELLs in Maryland public schools now comprise over 8% of the student population. With this expanding population of ELL students, it is time to find new strategies that will enhance their learning and bring these students' achievement on par with that of their English-speaking peers.

There have been many strategies implemented in classrooms across the nation that have sought to help ELL students achieve on the same level as English learners. As this is a fairly recent issue, much of the research has been conducted within the past ten years. Strategies such as using cognates, word walls with multiple languages and visuals, pairing students with bilingual peers, speak-to-text, self-contained ELL classrooms, and graphic organizers have been implemented without much success. Technology and collaboration are the newest interventions under study (Case, 2015). Research into combining the use of structured pairs of students with technology may be key to providing an equitable education for these students.

Statement of Problem

Imagine walking into a high school as a new immigrant to the United States who does not speak English fluently. You look around the room and cannot read what is on the board or posted around the classroom. You cannot understand much of what is being said by your classmates or teachers. You receive the day's assignment and are lost. You end the semester with a failing grade. These are problems that many of our ELL students face today. On the other hand, just think if on the first day the teacher had paired you with an English speaking peer and allowed you to use familiar technology to complete lessons. The outcome might be very different as one researcher found when he paired adult ELL students with English students while incorporating video technology (Case, A. F., 2015). This researcher was interested in developing this type of strategy to help his ELL students achieve on the same level as English learners.

Hypothesis

Based on his review of literature, the researcher hypothesized that using a variety of technology in lessons would help ELL students' achievement.

The null hypothesis tested in this study follows:

Gains in unit test scores for ELL students paired with English speakers but not using technology to complete American Government class lessons and assessments will equal gains in unit test scores for ELL students paired with English speakers and using technology to complete American Government class lessons and assessments

Operational Definitions

ELL students – English Language Learners: Students who are unable to communicate fluently or unable to learn effectively in English, who often come from non-English-speaking backgrounds, and who often require specialized or modified instruction in the English language and in academic courses.

Structured pairing – ELL students will be paired with an English speaking student. The pairing will be randomly selected based on subgroups of language proficiency, i.e., each ELL student participant will be paired with an English speaking student

Media/technology – This will include instructional video and animation as well as student creations using applications such as Tik-Tok, Movie maker, short movies, etc. The control group will be utilizing the standard graphic organizers with their peers.

Achievement level – scores as recorded on both pre and posttests of knowledge in American Government class

C HAPTER II

REVIEW OF THE LITERATURE

This review of literature discusses the various barriers that impact English Language Learners (ELL) from achieving at the same level as their English speaking peers. The literature will also examine the ways in which we approach this issue as well as offer several strategies that can aid in breaking down the barriers. The introduction of this literature review will focus on defining issues within the classroom environment as well as the role of the family and community. The next section will discuss ways in which researchers approach the issue of equity in the classroom. The last section will offer strategies that can help teachers prepare ELL students for success.

Introduction

One of the biggest issues in schools around the United States is how to integrate ELL students into the mainstream classrooms. There has been a large influx of these students over the last twenty years. According to *The National Center for Education Statistics*, 10.1% or 5 million ELL students, are attending school in this country. This is a 2% increase from the year 2000. (Woodsworth, 2017). The increasing ELL population has created a variety of problems for both teachers and students.

The inundation of ELL students has led to the question of how to ensure that these students are receiving an education equal with those of the English speaking students. This issue has often been underappreciated as resources have been scarce and teachers do not have the training to break through the language barrier. The emphasis on solving this issue is

understandable given the enormous role that language plays in learning. But, must we focus only on the issue of language, or as Case states in her research, are there other means of achieving success? (Case, 2015).

Barriers: Family and Community Involvement

Communication with the family and the ELL community is critical if we are to overcome the language barrier and have better parental involvement in the ELL student's educational pursuits. Some of the barriers include language comprehension, understanding of the school culture and community, and lack of programs designed to help families work through these issues. Many of these families have a low literacy level in their native language, in addition to no comprehension of the English language. About half of the parents of ELL students have less than a high school education with only 35% graduating high school (Arias & Morillo-Campbell, 2008).

While many ELL parents share a deep concern about their child's education, they may have different expectations about their role. Parents from diverse backgrounds see the role of the school and the teachers as "experts" and defer to them on the methods of learning. While there are contradicting studies on the issue of parental involvement, most analysis showed a moderate but statistically significant correlation between parent involvement and academic achievement (Fuga, M.T., 2016). The school system must advocate for programs that will bring the families and schools together as a cohesive unit, both working for the betterment of the child.

Barrier: Teacher Inexperience

A recent survey conducted by researchers showed that Social Studies teachers were particularly challenged by ELLs' lack of background knowledge of content area, language barriers, and the lack of time, resources, and support at the school level (Cho, S., & Reich, G.A., 2008). While many teachers offered ELL students extra time to complete assignments and adjusted their rate of speech when lecturing, this has been seen unsuccessful as students are still not meeting expectations. The need for strategies to help students understand the complex concepts of American government is of a particular concern. Teachers complain that there is a lack of professional development and that they need cultural training and bilingual resources and strategies for the classroom.

Classroom Environment

While there are many barriers that inhibit ELL students from succeeding on the same level as their English speaking peers, none is more important than setting the table. By this researchers mean that these students need to be in an atmosphere that is conducive to learning. The ELL students, many who are just entering the country and the school system, are often seen as troublesome or an unwanted burden by students and teachers alike. Some teachers, in a study conducted in Virginia, commented that ELL students should not be in integrated classes unless they are fluent English speakers. Others stated that these students should be in immersion classes because the "system" should not have to adapt to their home language (Case, 2015)

The issue of segregating ELL students is prevalent across the United States. As the population of ELL students continue to rise, these students are expanding from the urban school districts into the suburban and rural areas. Many of these school districts do not have the resources or experience necessary to successfully integrate these students into the general classroom and thus are segregating them. This inhibits the student's from learning the English language and adjusting to their new culture.

In Arizona, a state with approximately 15% of students classified as English learners, 81% being Latino, the courts had to step in to help remedy the situation. The 1951 *Gonzalez vs Sheely* case saw the federal courts outlaw the segregation of Latino students in separate schools. (Gandara, P., Orfield, G., & University of California, 2010), concluding that, "children are retarded in learning English by lack of exposure to its use because of segregation, and commingling of the entire student body instills and develops a common cultural attitude among the school children which is imperative for the perpetuation of American institutions and ideals."

Assimilating into the American culture is just one detrimental aspect of school or classroom segregation. Most of the ELL students come from families that live in poverty and are more likely to attend poorer schools that lack the facilities and materials to successfully educate them. These schools will likely have a staff of teachers not significantly trained to help ELL students. The dropout rate is usually high and the few that do attend college are less likely to be successful (Gandara, 2010). This leads to less capital flow for ELL communities, as they are more likely to enter the job market in fields that pay minimum wage.

There is a significant amount of research that documents the issue of ELL and non-ELL interactions in the classroom, but very little documentation on strategies to help overcome this problem. Much of the current research focuses on strategies based on vocabulary, grammar, cognates, and graphic organizers. If we are to set the table and provide the means for these strategies to work, we must first find a way to fully integrate ELL students into the classroom. One study achieved this by thinking outside the box and creating a video project that paired ELL/non-ELL students. (Case, 2015). He suggested that the best way to forge relationships that relationships between the groups was to create a cooperative project that relied on expertise from all parties.

Developing Approaches

We have identified many barriers that are detrimental to ELL students succeeding on the same level as their English speaking peers. From family and community participation to having the proper resources and teacher professional development it would seem that the issue could be insurmountable. But current research has proven that there is hope. Researchers and educators have been exploring a variety of approaches to attacking this issue.

Multi-tiered Approach

A multi-tiered approach is necessary when teaching the Social Studies curriculum because while the ELL students are learning a new language and culture they must also learn a different interpretation of historical events, develop a different conception of government, and learn a different philosophy of citizenship (Szpara, M. Y., & Ahmad, I. 2007). While a bilingual

approach would be preferable as it allows students to better their literacy skills, it is seen as a non-starter due to educational space, cost, materials, and trained teachers.

Socially Supportive Classroom Environment

As noted in our review of the literature on the barriers that inhibit ELL students' from learning, the classroom environment is the first step in ensuring the success of the ELL students. One major approach to facilitating this is to recognize the home culture and language of the students. This will help alleviate the culture shock of attending school in a new country. Incorporating aspects of their culture into the curriculum or asking the students of their perspective on social issues will allow them to actively participate while talking about things that are familiar with them. As they learn about American Government they could compare and contrasts the similarities and differences with their home country.

Inclusive Learning Community

A new approach is being tried in the American Midwest as they are seeing a large influx of ELL students in their schools. Traditionally the ELL teachers were the main point of contact for issues dealing with ELL students. They would have to be present for parent meetings, disciplinary actions, and other contact with students or parents. A new pilot program has been implemented to change this. Principals and administrators are implementing professional development in which all teachers will eventually be intensively trained and held accountable for implementing research-based instructional practices for ELL students (Brooks, K., Adams, S., & Morita-Mullaney, T., 2010). This program should free up administrators from focusing on

surface issues and start to implement changes in curriculum, school culture, and the classroom environment.

Teacher Perception of Preparedness

Many teachers state that they were not prepared to teach ELL students because there was no specific training during their academic studies. While many also stated that they took classes in teaching in diverse societies, none received specific training in strategies to work with ELL students. A survey of 79 teachers showed that 54.4% of educators indicated that they were not at all prepared and 38% said they were slightly prepared (Correll, P. K. 2016). More than half also stated that they did not work with ELL students either in college or during their student teaching.

The participants in this particular study offered suggestions on how to prepare teachers for ELL instruction. Ideas such as placement in diverse classrooms during student teaching and observing other teachers in schools with large populations of ELL students would be the best practice. Some suggested that teachers' field work should be tied in to college coursework that focused on this issue. Whatever strategies are finally implemented, it is clear that something needs to be done to prepare future teachers in this field of study, as the ELL population is expanding throughout the country.

How Do We Begin?

Getting educators prepared to start their teaching career or having experienced teachers alter the way in which they teach can be a difficult process. New and more experienced teachers are often burdened with multiple tasks such as lesson planning, Individual Education Plans (IEPs), meetings, parental communication, and extra duties. Asking teachers to add additional professional development in order to teach ELL students often frustrates them. Unfortunately it can be the students who suffer.

There should be no need to become frustrated. A recent article in the *SRATE Journal* (Whitsett, G., & Hubbard, J., 2009) offers regular teachers initial steps for accommodating ELL students. The researchers start with investigating the background of the students. Teachers should access school records, talk to other teachers, get information from the ELL department and talk to guidance counselors to gain an overall profile of the student. Educators should also look at past scores to assess their English-language ability. For example, a student may be at or above grade-level in their native language but be at a much lower level in English. If this is the case the teacher must install supplemental material or strategies to aid in the student's ability to understand the curriculum.

Whitsett and Hubbard (2009) also suggest that teachers meet with the families of ELL students in order to gain an understanding of their values and culture. What are the family's concerns regarding their child's education? What is their experience, their favorite activities? Do they celebrate certain holidays or events that can be added to the curriculum? These questions may lead us to look at our cultural identities and prejudices and aid teachers in making the necessary adjustments to their teaching.

Strategies to Improve Learning

There has been a lot of research in recent years on methods and strategies that would allow ELL students to succeed in American classrooms. Unfortunately these strategies are not always implemented due to real and artificial barriers. As school systems around the country are starting to see an influx of ELL students they are beginning to implement some professional development to help these students acclimate to the classroom. While we still have a long way to go to fully meet the needs of our diverse student body we are beginning to see some progress.

Building Vocabulary

Vocabulary knowledge is one of the most crucial aspects of language acquisition. Language learners need to master at least 3000 word families in order to communicate and understand 95% of the language communicated by native speakers. (Alharbi, 2015). In order to be both capable speakers and writers they must be able to associate the vocabulary with comprehension of the meaning of the words. A strategy that has had proven success is the creation of a word wall in the classroom in which key vocabulary and concepts are written in both English and other native languages used by the ELL students. The addition of a visual with the vocabulary word or concept provides additional support in the ELL student's comprehension.

Cognates

As most of the ELL students are from Spanish speaking nations, the use of cognates is an efficient strategy to use. About 40% of English words have a related word in Spanish that has similarities in how they are spelled and pronounced (Jimenez-Silva, M., & Gomez, C. L., 2012). This can help the Spanish student identify the meaning of a word. Teachers and students should examine words that fit this criteria, but use caution as there are false cognates such as parents and parientes (relatives) that could be a cause for confusion. As discussed in the previous section on vocabulary, the use of cognates displayed visually in the classroom helps both English and native speakers.

Oral Language

In order for the ELL student to master the language they must be able to speak it. This is a basic communication skill which helps students connect with each other and feel they are a part of the community. A great classroom tool, that aids in both reading and oral communication, is speak-to-text or *Window's Read Aloud*. This built in tool reads selected text aloud for the student. The program highlights the words as the student follows along and aids in the proper pronunciation of the desired vocabulary as well as with reading fluency (Fu, D., 2004).

Graphic Organizers

Graphic organizers are a tool that can be introduced for any subject but are crucial in learning social studies content. These allow the ELL student to organize their thoughts, sequence events, compare and contrast, and in summarizing main points. They are also good for creating

visuals such as timeline which helps ELL students understand the concept of time in relation to the evolvement of government or policies (Pang, Y., 2013). Graphic organizers are also an informal way for students to organize their thoughts in English prior writing an essay.

Collaboration

Often, when we hear about collaboration and ELL students it is assumed that the general education teacher is collaborating with the ELL teacher to identify strategies to help the students adapt to the English language. While this is often necessary, real collaboration is pairing the ELL student with an English speaking peer. Most teachers will try to pair the new student with a bilingual student that understands their language and can help with translation. This often detracts the bilingual student from their own work as they are too engaged in helping another student. Purposeful collaboration is a better strategy. The use of structured pairing or placing the ELL student with an English peer allows students to have more interaction, thus improves the overall classroom environment. The English student should be one that has patience and is willing to spend their time working with others.

Technology

The use of technology in the instruction of ELL students is a great tool. The use of video and graphics during direct instruction allows the student to visualize the concepts that are being taught. It creates a variety of methods to teach the difficult concepts of American Government and for the students to demonstrate their understanding through peer-to-peer interaction. Social

media platforms such as Tik-Tok, Snap Chat, and Instagram give the students an opportunity to share video or messages with their peers. Media platforms allow students to be creative in displaying their work, completing assessments, or participating in group activities.

Conclusion

Developing strategies that allow ELL learners to achieve on the same level as English learners is not an easy task. Most of the research on this topic has been completed within the past ten years and is still an ongoing topic of discussion. Researchers have focused on areas such as the barriers to learning, collaboration between ELL communities and the school system, and classroom strategies to enhance learning. While some research has been focused, for the most part, on specific issues or strategies, an all-inclusive approach would be more beneficial in solving this problem. As in all students, ELL students learn through different means and there is not an all in one approach that could solve this problem. As more researchers study this issue, we need to start thinking outside the box and be inventive in our approach. It is critical that we find a solution so that there is equity in our classroom as we become a more diverse nation.

Chapter III

This study examines the impact of technology that may help ELL students achieve at the same level as English speaking students in American Government class.

Design

The study used a quasi-experimental pretest-posttest design. Two pairs with one ELL student and one English-speaking student each comprised the experimental group and two pairs with one ELL and one English speaking student were in the control group. The experimental group received the intervention (technology use in addition to pairing). The comparison group did not receive the technology intervention but was paired.

The participants were in two separate classes. The research used a t-test for independent samples to compare the gains in U.S. Government learning objectives (unit test scores) of the ELL students in the comparison and experimental groups.

The study also included descriptive methodology through survey research. The ELL and English speaking participants in the class which received the intervention (pairing plus technology use during lessons) were asked to describe and evaluate their experiences using specific strategies to learn vocabulary and government concepts.

Participants

This study focused on 9th-grade students in the American Government class. There were two separate classes containing participants who were ELLs. There were two ELL students studied in each class. The ELL students are rated according to the World-Class Instructional

Design and Assessment (WIDA) which consists of six levels of development. The students in the experimental class group were one male and one female. They were rated according to WIDA as Level 2: Developing. The comparison group also consisted of one male and one female ELL student. They were rated as WIDA Level 4: Bridging. The ELL students in the first class (WIDA level 2) were structurally-paired with an English-speaking peer as their partner for four particular learning activities. These pairs remained constant throughout the study and each included one ELL student and one English speaking learner. ELL students in the second class completed the units as usual. They were paired and did not use technology for the Unit under study.

Instrumentation

Instruments used in the study included a unit test which assessed the current course topic of study and a survey. The researcher administered the same unit test as a pre-test and post-test. The test was a standard unit test written by the office of curriculum to be administered by Baltimore County Schools at the end of the current unit for this course (see a copy in Appendix A). The county has tests like this for all units, so students are familiar with them and they have been developed to accurately reflect and measure unit learning objectives. The test contained 15 items and scores were reported as raw scores out of 15 points.

A survey (see a copy in Appendix B), was given after the interventions which was divided into two sections. The first section consisted of a Likert-type scale that asked students to rate the helpfulness of eight learning strategies which are implemented in each government class

on a five point scale. The second section consisted of a series of open-ended questions which asked students to identify what strategies work best for them and why and how they might work even more effectively.

The survey was available in student's home language if requested and the the instructor offered to verbally read the instructions and questions on the survey for clarification as requested did this happen? If not, note no one needed it but you read to them. The survey was read aloud to the ELL students in order to have them better comprehend the questions.

Procedure

The researcher established two classes to serve as the treatment group and one class as the comparison group for this study. The researcher then administered the pretest to all four ELL students in his two 9th-grade American Government classes who were participating in the study prior to the start of the research.

The treatment group received instruction utilizing structured pairs and use of additional technology in instruction for the unit. The treatment group created their own Kahoot games that defined the various vocabulary and concepts used in the American Government curriculum and then played the game with the entire class as a review or check for understanding. The students also viewed CNN Daily News on a regular basis and then created their own podcast using

Google Meets as their virtual platform. Furthermore, the students created a debate platform by creating a philosophical chairs activity utilizing avatars as the students.

The technology intervention and structured pairs were intended to aid help the ELL student gain a better understanding of the vocabulary and concepts utilized in the American Government unit's curriculum. The structured pairs were intended to help the ELL students assimilate socially into the classroom environment and lessons in a comfortable manner. The comparison group participated in regular lessons without any special pairing or use of technology as they completed the same unit. The comparison group received instruction as usual which includes the use of PowerPoints and some videos.

Upon completion of the unit, all of the students were re-administered the same unit test as a posttest. Pre and post test data were then compared to determine if the treatment group showed larger gains than the comparison group, suggesting intervention strategies were helpful. The ELL students in the treatment class completed the post intervention survey located in Appendix B and the ELL students in the comparison class completed the chart on the survey located in Appendix C and their responses were compared. This allowed for all four ELL participants to rate the helpfulness of classroom interventions typically used and perceptions of teacher support. The treatment 1 group was also asked to share their perceptions of the pairing and technology interventions and how they might be improved.

Chapter IV

Description of Study

Pre and post unit test scores were recorded for two groups of two ELL students each. One group (who were in one classroom) was paired with an English-speaking peer and used technology with the partner to complete U.S. Government class lessons. The comparison group was also paired with an English-speaking peer but did not use technology with their partner as they participated in the same unit in their U.S. Government classes.

Comparison of Treatment and Comparison Group Gain Scores

In order to determine whether they differed significantly, t-tests for independent samples were run to compare the pretest, post-test and gain (post-pre) scores for the ELL students in the treatment and comparison groups. Descriptive statistics follow in Table 1 and the results of the t-tests follow in Table 2.

Table 1

Descriptive Statistics for mean Pre-intervention and Post-intervention and Gain scores on Unit tests for the treatment and comparison groups

	ELL Students/Group	N	Mean	Std. Deviation	Std. Error Mean
Pre-test	Treatment Group	2	6.5	.71	.50
	Comparison Group	2	2.0	.00	.00
Post-test	Treatment Group	2	11.0	.00	.00
	Comparison Group	2	5.5	.71	.50
Gain score	Treatment Group	2	4.5	.71	.50
	Comparison Group	2	3.5	.71	.50

Table 2

Results of t-tests comparing the pre-test, post-test and gain scores for the ELL students in the treatment and comparison groups (equal variances not assumed)

	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Pre-test	9	1	.070	4.5	.500	-1.853	10.853
Post-test	11	1	.058	5.5	.500	-.853	11.853
Gain score	1.414	2	.293	1.0	.707	-2.042	4.042

Results of the t-test comparing the mean pre-test scores indicated they did not differ significantly ($t=9$, $p<.070$). The post-test scores did not differ significantly either ($t=11$, $p<.058$). The mean difference in the gain scores of one for the ELL students in the treatment and comparison groups also did not differ significantly ($t=1.414$, $p<.293$), although both groups' mean scores did increase (by 4.5 points for the treatment group and 3.5 points for the comparison group). Based on these results, the null hypothesis, that the mean gain scores for the ELL students assigned to partners *and* using supplemental technology would not statistically significantly differ from those of the two ELL students who were assigned partners but did not use technology, was retained.

Finally, descriptive data were computed to summarize results of the survey which all four ELL students (in both groups) and their assigned English-speaking partners completed at the end of the unit. The students did not know their unit test results prior to the survey.

The two ELL students in the experimental class who used technology were asked two final questions on the survey about the intervention which the others were not (items 12 and 13). Tallies of the survey results follow in Tables 3 to 9.

Table 3

Descriptive statistics of ratings of effectiveness of instructional strategies disaggregated by group (Survey items 1-8)

	Group 1ELL treatment 2 ELL comparison 3 English treatment 4 English comparison	N	Range	Mean	Std. Deviation
1. Interactive Word Wall	1ELL treatment	2	3-3	3.0	.00
	2 ELL comparison	2	4-5	4.5	.71
	3 English treatment	2	3-4	3.5	.71
	4 English comparison	2	5-5	5.0	.00
2. Graphic Organizer	1ELL treatment	2	3-4	3.5	.71
	2 ELL comparison	2	4-5	4.5	.71
	3 English treatment	2	3-4	3.5	.71
	4 English comparison	2	4-4	4.0	.00
3. Class Discussion	1ELL treatment	2	3-5	4.0	1.41
	2 ELL comparison	2	5-5	5.0	.00
	3 English treatment	2	5-5	5.0	.00
	4 English comparison	2	5-5	5.0	.00
4. Note-taking	1ELL treatment	2	2-5	3.5	2.12
	2 ELL comparison	2	4-5	4.5	.71
	3 English treatment	2	3-5	4.0	1.41
	4 English comparison	2	4-4	4.0	.00

5. Dictionary	1ELL treatment	2	3-5	4.0	1.41
	2 ELL comparison	2	4-5	4.5	.71
	3 English treatment	2	3-4	3.5	.71
	4 English comparison	2	1-4	2.5	2.12
6. Visuals	1ELL treatment	2	5-5	5.0	.00
	2 ELL comparison	2	4-4	4.0	.00
	3 English treatment	2	4-4	4.0	.00
	4 English comparison	2	5-5	5.0	.00
7. Technology: Video	1ELL treatment	2	5-5	5.0	.00
	2 ELL comparison	2	4-4	4.0	.00
	3 English treatment	2	2-4	3.0	1.41
	4 English comparison	2	4-5	4.5	.71
8. Group work	1ELL treatment	2	2-5	3.5	2.12
	2 ELL comparison	2	4-5	4.5	.71
	3 English treatment	2	2-5	3.5	2.12
	4 English comparison	2	4-5	4.5	.71

Tallies of yes/no responses to items 11, 12 13 (yes=1 no=2)

Three survey items asked yes and no (dichotomous) questions about whether their teacher, partner or the technology helped them. The responses are summarized below in Table 4.

Table 4

Group	11. Did the teacher help you gain a better understanding of the vocabulary and concepts in the Unit? 1=yes 2= no		12a. Did working with your assigned partner HELP you gain a better understanding of the vocabulary and concepts in the Unit?		13. Did the use of technology in the lessons for this unit help you gain a better understanding of the vocabulary and concepts in the Unit? Circle one: YES or NO	
	Yes	No	Yes	No	Yes	No
1ELL treatment	2	0	2	0	2	0
2 ELL comparison	2	0	na	Na	Na	Na
3 English treatment	2	0	1	1	2	0
4 English comparison	2	0	na	Na	Na	na

On question eleven that pertained to the teacher helping the students gain a better understanding of the vocabulary and concepts the response was a yes from all four participants. Question twelve responses indicated that ELL students in both the control and experimental groups felt they benefited from working with a partner. The response on question thirteen suggests that the

students in the treatment group (both ELL and English speaking partners) believed that technology helped them gain a better understanding of the vocabulary and concepts.

Finally, the surveys asked the participants to list ideas about what might help them more, how they best learn and ways the teacher, partner and use of technology helped them and could have helped them more in order to learn more and gather ideas to improve instruction and outcomes. The responses are presented by group in the tables below.

Table 5

List of responses to Item 9a-c

Group	Item 9 (Blank= no response)		
1 ELL treatment 2 ELL comparison 3 English treatment 4 English comparison	Please list up to three strategies NOT mentioned in this survey you feel would help you learning new vocabulary and concepts in our class		
	9 a	9b	9c
1	Textbooks with detailed info	Vein diagrams	
1			
2	Different sources for learning	Review	
2			

3	Every method was stated up above.		
3	I don't really know		
4	Vocabulary games	Drawing it out	Creating a scenario
4	Interactive scenes or Roleplay movies	Quizlets/ Kahoots	Teacher Explanation

The responses in Table 5 shows that the ELL students suggested some standard methods of learning that were not included in Table three. Their responses suggest that in addition to the eight interventions suggested on the survey (see Table 3), students learn in a variety of ways. The most commonly reported helpful ways were diagrams, more review, textbooks, and additional sources of information.

Table 6

List of responses to Item 10a-b

Group	Item 10
-------	---------

1ELL treatment 2 ELL comparison 3 English treatment 4 English comparison	10a. In your opinion, what is the best way for you to learn new vocabulary and concepts?	10 b. Tell why you think that strategy is best for you:
1	Quizlet vocabulary or playing Kahoot with the whole class.	Kahoot is the best since everybody collaborates and learns together.
1	For me I often find the best way is through visual or talking with others about it.	I think it is nice to learn through the opinion's others may have.
2	Reading it maybe	Because reading a new word a decent amount of times helps me understand the word and use it in my vocabulary
2	It would be videos definitely interesting videos	because its more entertaining and not boring
3	note-taking.	Once I write a down and take note of it, it helps me remember it more often since I had written it down. Also, I can always go back to the page where it was written.
3	Learning about it and talking about it and then being able to go back and read a simplified definition of the word	Because I can learn the word and what it means and what it applies to and then I can go back and review the word when I need to
4	Discussion helps me	
4	I am a Visual learner so when I see something, I would be easier for me to remember	I think this is the best for me because it images are easier to remember instead of a whole bunch of words.

Table 6 depicts the students' opinions about what works for them in learning new vocabulary and concepts, as well as why those strategies work best. The ELL student in the experimental group stated that they learn best by playing Kahoot with the whole class because everyone collaborates on their learning. One ELL student in the control group responded that repetition of the word while reading as well as visuals work the best. The other ELL student in the comparison group stated that video is more entertaining.

Table 7

List of responses to Item 11b-c

Group	Item 11					
Group 1ELL treatment 2 ELL comparison n 3 English treatment 4 English comparison	11b. List up to 3 ways your teacher helped you gain a better understanding of the vocabulary and concepts in the Unit?			11c. List up to 3 ways your teacher could have helped you MORE than he did		
1	Power point presentations	Jam boards	CNN daily news trivia	Not being rude but less talking and more focusing on	More Educational news trivia	Historical songs to gain better understanding about topics.

				assignments		
1	He talked with us on similarities to the word and gave us an idea of it	. He showed us visuals that explained the word or concept	He had videos and examples pre-made to teach us.	He could have had resources like note cards	He could have given more examples and ways to understand	We could have spent more time on the ideas
2	1. We watched videos on the subject	We had a discussion	3. We had debates about the topics which help me understand more about subjects	I can't think of anything		
2	Talking would be one	going over certain things	breaking it down	he's a great help		
3	Discussions	Explanations	New vocab with definitions in class presentation	More notetaking		
3	Had whole class discussions and had everyone say their different ideas and opinions of the word	Had a PowerPoint with the word and definition so you could see it	In addition to the PowerPoint he also explained the word and said different interpretations of it	Have a little more examples of the topic, like the constitution and which right applies to the scenario		

4	He explained each new word thoroughly.	he gave relatable examples that allowed me to understand it on a personal level.	He showed us videos that explained in another way to cover all bases.	He could have made us use each word in a sentence.	He could've made us make pictures that depicted what each word meant.	He could've made us record a conversation at home of us using the words regularly.
4	Go into detail about the certain topic or word	Gives reference ideas like the topic or word	Elaborates of questions to make it easier	Make sure that I am always correct	Keep a steady pace just to make sure I do not miss anything	Just always be there if I need help

The responses to the question 11b indicated that the ELL students believed that the teacher helped them learn vocabulary and concepts through the combined use of visual, video, and discussion. In particular the students mentioned the use of CNN Daily News and Jam Board, which was some of the technology introduced. Other students listed class discussion in which the vocabulary and concepts were broken down and explained through real-time events, which were further discussed from multiple perspectives. The main ways teachers could help more was by incorporating more note taking, using words in sentence form, and using historical songs.

Table 8 summarizes responses to item 12, which asked how working with partners was helpful and could help more. The control group had partners but did not complete item 12.

Table 8

List of responses to Item 12b-c

Group	Item 12 (completed by ELL students only)					
Group 1 ELL treatment 3 English treatment on	12b. List up to 3 ways working with your assigned partner helped you gain a better understanding of the vocabulary and concepts in the Unit?			12c. List up to 3 ways working with ANY assigned partner could have helped you MORE than it did		
1	I heard different ways	I had fun		The partner can talk in mic and not type everything in chat because it is hard to explain	My partner explain it in details.	
1	Having two heads was better than a single thought	My partner had some different opinions	Having someone I did not know made it feel different and strange	Working with someone I know makes me feel less shy	When I work with people, I know I can rely on them	Working with friends means that the work is suited for people's personal best abilities

3	Helping each other	Mutual Understanding	Notetaking together	More communication	More discussion	More Notetaking
3	I got a new perspective of the topic	There's nothing else		Having more even sides of an opinion vs only one person in a group having a different opinion	Idk I just don't overly like working with people most the time	

According to question 12b on this chart all students noted that working with a partner allowed them to learn through new perspectives of an issue though one student stated that they felt strange working with someone they did not know. According to item 12c which asked the students to list 3 ways in which working with any assigned partner could have helped, students replied that they would feel less stressed and communicate more.

Table 9

List of responses to Item 13b-c

Group	Item 13					
1ELL treatment 3 English treatment	13b. List up to 3 ways the use of technology helped you gain a better understanding of the vocabulary and concepts in the Unit?			13c. List up to 3 ways the use of technology could have helped you MORE than he did		
1	I could easy access to my grades	I could easily talk through my	3. I could easily submit my work and	I think the technology help me enough		

	and lessons	classmates and teacher	earn a better grade	and there is no more help I need.		
1	The use of technology meant that we could research it ourselves	It meant that we could find articles and websites on the idea	We could see firsthand examples in the news on the idea	Goggle was able to cover a lot more ground than him	Some of the articles gave stronger examples	Having access to notes and flashcards on the idea made it much easier
3	Notetaking	Discussions during virtual class	Google	Less restricted websites		
3	I could see the words written on the power point and look back to it whenever			Have the definitions on Schoology		

The responses in Table 8, question 13b indicate that the ELL students believed that technology helped them gain a better understanding of the vocabulary and concepts because it allowed them to access more material and could better submit work and access lessons. The responses in Table 8, question 13c indicate that the ELL students thought that the use of technology helped them more because the use of sites such as Google allowed them to research more material such as articles that gave more examples than the teacher.

A discussion of the results follows in Chapter V.

CHAPTER V

DISCUSSION

This research attempted to determine if the use of technology would allow ELL students paired with English speaking peers to achieve success on a course unit test at the same level as other ELL students who were also paired with English-speaking peers but did not use technology as they worked on the same unit.

The mean gain scores for the ELL students in the treatment and comparison groups did not differ significantly ($t= 1.414$, $p<.293$), although both groups' mean scores did increase (by 4.5 points for the treatment group and 3.5 points for the comparison group). Based on these results, the null hypothesis, that the mean gain scores for the ELL students assigned to partners *and* using supplemental technology would not statistically significantly differ from those of the two ELL students who were assigned partners but did not use technology, was retained.

The survey gave a much better understanding of how the students learn as they answered specific questions in regards to learning strategies that help them achieve at a high level. The students were also asked specific questions pertaining to both working with a partner and the use of technology. The survey was completed at the end of the study which allowed insight into the strategies that were implemented.

Questions 10a /10b and 13b /13c referred specifically to the use of technology. When asked in question 10 about the best way to learn and why, the ELL students mentioned Kahoot

because it allowed the students to collaborate and learn together. The students had utilized this strategy in class by working together to create their own game and present it to the whole class. The students also mentioned the use of visuals which was incorporated through the usage of multiple video formats. Question 13 asked the participants on ways in which technology helped them and ways in which it could help in the future. The ELL respondents stated that technology allowed the more access to the means to conduct research and cover more ground than what the teacher could accomplish.

Implications of Results

While the data did not show a statistically significant difference between the mean gain scores for the two ELL students assigned to partners and using supplemental technology and the two ELL students who were assigned partners but did not use technology, there was an expected improvement in scores from pre to post test for both groups and the treatment group did improve slightly more (4.5 vs. 3.5 points) on the post test. The null hypothesis was retained based on these results, but the student responses to the survey (Appendix B) did evoke promising ideas for future interventions and research based on student responses on preferred learning strategies that seem to indicate more interactive methods of learning could help them engage and succeed in school?

Threats to Validity

There were several threats to the external validity of this study. The participants were initially being taught utilizing the virtual format and students did not have to show their faces on camera, therefore, it was possible that they were not present during some of the instruction. Students also communicated either through the chat box or voice when in structured pairs which may have limited their participation. In the middle of the study the district changed to hybrid learning in which some students were physically in the classroom while others participated virtually. The hours of class also changed from a later start to an earlier one. The class also extended from 50 minutes to 90 minutes with participants able to opt out the last 40 minutes as it was designated as small group time. These unusual and inconsistent class settings impacted the delivery of the intervention and lessons and likely impacted the partners' interactions and results.

The study was also based on a very small sample of students, in part due to the virtual/hybrid schedule. These students were all 14 years old and in a 9th grade American Government class. Sampling the effect of partnering and technology use across subject areas and age levels may have resulted in different findings. Additionally, the two small groups of ELL students differed in their English abilities. Controlling for that could help learn more about how best to deliver instruction and group students. The study was also conducted in a short three-week period with three asynchronous days in which students worked alone. This disruption could have impacted the results compared to more consistent and face to face instruction and support.

The research also has threats to its internal validity. The descriptive survey was completed at the end of the posttest and given prior to the posttest grade being reported. This may have influenced the answers given by the participants because they did not realize how successful or unsuccessful they were. The survey was completed by all participants but the control group had partners but did not complete items twelve or 13 on the survey for unknown reasons.

Connections to Previous Studies/Existing Literature

The results of this study align with a past study that examined the issue of ELL and non-ELL interactions in the classroom, which noted that there was little documentation on strategies to help overcome this problem of ELL students falling behind academically compared to their English-speaking peers. (Case, 2015). Much of the past research focused on strategies *based on how to teach? Say what about these:* vocabulary, grammar, cognates, and graphic organizers. In that study, Case suggested that in order to fully integrate the ELL students into the classroom, teachers should be creative and think outside the box. He suggested that the best way to forge relationships between the groups was to create a cooperative project that relied on expertise from all parties and, as an example, he created a video project that paired ELL/non-ELL students. This study attempted to further this research by requiring collaboration and use of technology that was familiar to both the ELL student and that of their English-speaking peers.

Implications for Future Research

The results of this research, though suggest that this generation of students may learn more through the use of technology. The survey answers displayed this conclusion based on what participants said they felt helped them and what they felt is needed to achieve success. Future studies should examine and compare the efficacy of types of technology for supposing learning for particular populations of ELL and other students as well.

This particular study was conducted during a time of disruption throughout the educational system due to the Corona virus. The move to the virtual format and the further move to hybrid learning likely affected the results by reducing consistency and controls in the lesson delivery. A future study in a more structured virtual or physical classroom would allow the researcher to expand the number of students and add additional older students who may have failed the class in the past. The study should also be replicated and extended over a longer time frame in order to implement and compare the impact of various partnering configurations and more applications of technology and not rush through the curriculum at a fast pace. This would allow the students to become more familiar with the technology and focus more on lesson objectives.

Conclusion

The goal of this study was to assess the impact of incorporating the use of technology and pairing with peers into the American Government class on ELL students' ability to understand

the vocabulary and concepts related to the curriculum. Based on the literature review and his observations, this researcher believes that given a stable environment conducive to learning, these interventions would actually improve results for ELL students in terms of content mastery and success in school and with peers. Future research should focus on using these interventions in both virtual and physical classrooms in order to meet the needs of all learners and enhance the validity of future findings so ELL students experience greater success in school.

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APPENDIX A: UNIT TEST

(Given Pre and Post Unit)

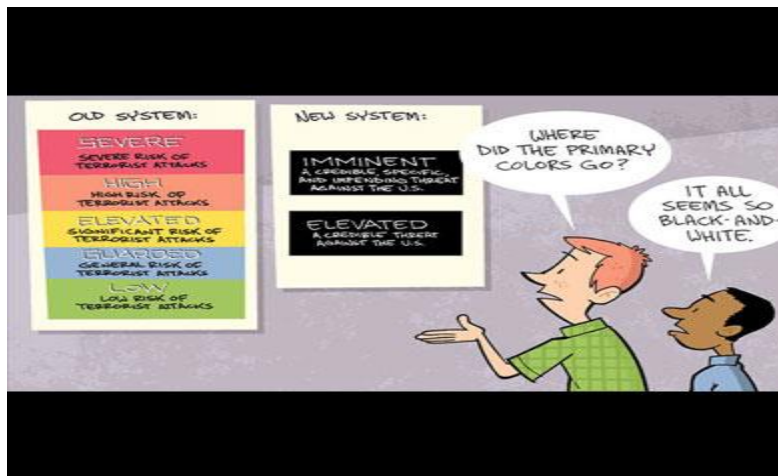
1. Read the quote below and answer the question that follows?

“The legitimate object of government is to do for a community of people whatever they need to have done but cannot do at all, or cannot so well do for themselves in their separate and individual capacities. But in all that people can individually do for themselves, government ought not to interfere.” —Abraham Lincoln, 1854

Which principle of government best applies the the quote?

- a. rule of law
- b. popular sovereignty
- c. majority rule
- d. citizen participation

2. Please examine the cartoon and answer the question below.



What purpose of government is being discussed in the cartoon?

- a. maintain social order
- b. provide public services
- c. make economic decisions
- d. provide national security

3. A violent riot breaks out in the streets of Los Angeles. Several city police officers come to the scene and makes arrests. What purpose of government is being fulfilled in this example?

- a.to make economic decisions
- b. to provide public services
- c. to maintain social order
- d. to provide national security

4. In which system of government are leaders most accountable to citizens?

- a. Oligarchy
- b. Dictatorship
- c. Absolute Monarchy
- d. Representative Democracy

5. In a market economy, who decides how resources are used and distributed?

- a board of trustees (small group)
- b. consumers and producers
- c. national and state government
- d. no one decides

6. Examine the quote below to answer the question.

**“United States House of Representatives proposes amendment to ban flag burning.”
Based on the quote above, which principle of government would be affected by the proposed amendment?**

- a. individual rights
- b. popular sovereignty
- c. separation of powers
- d. checks and balances

7. Which of the following excerpts from the Constitution describe federalism?

“The right of the people to be secure in their persons...against unreasonable searches...shall not be violated...”,

“The right of citizens...who are eighteen years of age or older, to vote shall not be denied...on account of age.”,

“The powers not delegated to the United States by the Constitution...are reserved to the States...”,

“The judicial Power shall extend to all cases arising under the constitution.”

8. Which of the following powers is NOT included in the Constitution?

- a. the government must provide education to all citizens
- b. the duties of the president
- c. the term limitations of Congress members

d. the powers of the Supreme Court

9. The major purpose of the Articles section of the Constitution is to:

- a. introduce the Constitution
- b. describe the goals of the government
- c. describe the structure and function of the government
- d. guarantee rights to the citizens

10. A young man is caught shoplifting a pack of gum from the local convenience store. The judge that hears his case is sick of crime, so to send a message to the community, he decides to sentence the young man to 10 years in prison.

Which amendment is being violated in this scenario?

- a. Amendment 8 – Freedom from cruel and unusual punishment,
- b. Amendment 4 – Freedom from unreasonable search and seizure
- c. Amendment 5 – Right to due process
- d. Amendment 1 – Freedom of speech/religion/assembly/press/petition

11. Which of these is guaranteed by the Bill of Rights (first ten amendments)?

- a. checks and balances
- b. right to remain silent
- c. separation of powers
- d. women's right to vote

12. Students protest Burger King's use of growth hormones in their meat by refusing to buy food from the local Burger King and instead eating at McDonald's and Wendy's.

Which form of dissent and protest is represented in this scenario?

- a. picket
- b. referendum
- c. media communication
- d. boycott

13. Examine the resource and answer the question that follows

The UDHR was adopted by the United Nations General Assembly on December 10, 1948.

Article 13

"Everyone has the right to freedom of movement and residence. . . . Everyone has the right to leave any country, including his own, and to return to his country."

Article 18

"Everyone has the right to freedom of thought, conscience and religion . . . and freedom, . . . to manifest his religion or belief in teaching, practice, worship and observance."

Article 19

"Everyone has the right to freedom of opinion and expression; this right includes freedom to hold opinions . . . and impart information and ideas through any media and regardless of frontiers."

Article 20

"Everyone has the right to freedom of peaceful assembly and association."

—The Universal Declaration of Human Rights

What type of government best applies to the principles in the resource above?

- a. Oligarchy
- b. Monarchy
- c. Dictatorship
- d. Democracy

14. Examine the quote and answer the question that follows.

"The necessity of a Bill of Rights appears to me to be greater in this government than ever it was in any government before.... All rights not expressly and unequivocally reserved to the people are impliedly and incidentally relinquished to rulers.... If you intend to reserve your unalienable rights, you must have the most express stipulation; for ... If the people do not think it necessary to reserve them, they will be supposed to be given up." —Patrick Henry, 1788

Which of the following in the Bill of Rights (1st ten amendments) best applies to the quote above?

- a. 1st Amendment
- b. 4th Amendment
- c. 5th Amendment
- d. 9th Amendment

15. In Texas v. Johnson, the Supreme Court ruled that burning an American flag is a protected form of free speech. As a result, the United States House of Representatives proposes an amendment to ban flag burning.

Based on the information above, which principle of government is reflected in the proposed amendment?

- a. individual rights
- b. popular sovereignty
- c. separation of powers
- d. checks and balances

Appendix B: Post intervention survey for Experimental Group

Name: _____

Please answer the following questions as honestly as you can:

Instructional Strategy	Rating				5
	1	2	3	4	
	Don't help at all	Don't help much	Don't help or hurt	Help some	Help a lot
1. Interactive Word Wall					
2. Graphic Organizer					
3. Class Discussion					
4. Note-taking					
5. Dictionary					
6. Visuals					
7. Technology: Video					
8. Group work					

9. Please list up to three strategies NOT mentioned in this survey you feel would help you learning new vocabulary and concepts in our class.

1.
2.
3.

10. In your opinion, what is the best way for you to learn new vocabulary and concepts?

10 b. Tell why you think that strategy is best for you:

11. Did the **teacher** help you gain a better understanding of the vocabulary and concepts in the Unit?

Circle one: YES or NO

- 11b. List up to 3 ways your teacher helped you gain a better understanding of the vocabulary and concepts in the Unit?

1.
2.
3.

11c. List up to 3 ways your teacher could have helped you MORE than he did

1.
2.
3.

12a. Did working with your **assigned partner** HELP you gain a better understanding of the vocabulary and concepts in the Unit?

Circle one: YES or NO

12b. List up to 3 ways working with your assigned partner helped you gain a better understanding of the vocabulary and concepts in the Unit?

1.
2.
3.

12c. List up to 3 ways working with ANY assigned partner could have helped you MORE than it did

1.
2.
3.

13. Did the **use of technology** in the lessons for this unit help you gain a better understanding of the vocabulary and concepts in the Unit?

Circle one: YES or NO

13b. List up to 3 ways the use of technology helped you gain a better understanding of the vocabulary and concepts in the Unit?

1.
2.
3.

13c. List up to 3 ways the use of technology could have helped you MORE than he did

1.
2.
3.

Appendix C: Post intervention survey for Comparison Group

Name: _____

Instructional Strategy	Rating				
	1	2	3	4	5
	Don't help at all	Don't help much	Don't help or hurt	Help some	Help a lot
1. Interactive Word Wall					
2. Graphic Organizer					
3. Class Discussion					
4. Note-taking					
5. Dictionary					
6. Visuals					
7. Technology: Video					
8. Group work					

Please answer the following questions as honestly as you can:

9. Please list up to three strategies NOT mentioned in this survey you feel would help you learning new vocabulary and concepts in our class.

1.
2.
3.

10. In your opinion, what is the best way for you to learn new vocabulary and concepts?

10 b. Tell why you think that strategy is best for you:

11. Did the **teacher** help you gain a better understanding of the vocabulary and concepts in the Unit?

Circle one: YES or NO

- 11b. List up to 3 ways your teacher helped you gain a better understanding of the vocabulary and concepts in the Unit?

1.

2.
3.

11c. List up to 3 ways your teacher could have helped you MORE than he did

1.
2.
3.

