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Blended Learning And Its Effect On Student Achievement: An Action Research Study

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BLENDED LEARNING AND ITS EFFECT ON STUDENT ACHIEVEMENT: AN ACTION RESEARCH STUDY

by

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DEDICATION

This dissertation is dedicated to all of those who have been by my side throughout my graduate experience. To my family: my mom and dad, Betty and Roy, for all of their encouraging words and unwavering belief in my ability to make it through; to my sister and brother-in-law, Sandy and David for understanding the pressures of combining life, work, and school, always believing that I would be successful; and to my niece and nephew, Sarah and John for accepting me even though I became a Gamecock (even if it’s just for these three years). To Jason, for dealing with three years of long nights, three years of ‘homework weekends’ that never seemed to end, three years of helping me deal with the stress and pressure of class, after class, after class, and for offering me support in any way he could with encouraging words and gestures that can never be fully repaid – I could not have done this without his support and encouragement. To my friends: to Hailey for always believing in me when I didn’t believe in myself and telling me that everything always works out in the end; to Mandie for calling me on my stress and always reminding me that I can handle everything that is put in my path, and to Jesse for all of the years of love, support, and encouragement in every aspect of my life. To my students, old and new, you are the reason I will continue working. Thank you, everyone, from the bottom of my heart – you all mean more to me than you will ever know. I am eternally grateful for each one of you.
ABSTRACT

This action research study seeks to determine the effects of blended learning on student achievement in a social studies classroom. The research focus is centered on the idea that students are not reaching their full potential on assessments, and a question about how to most effectively assist them in realizing their potential through a new teaching method. This action research study follows Mertler’s (2014) action research framework to find an answer to the research question. The participants of this study were a group of 10th grade students enrolled in an Honors World History course. Students were taught using a blended learning approach with 50% of information in one unit delivered using direct instruction methods and the remaining 50% of the information delivered using blended methods through technology. Qualitative and quantitative research was conducted through student surveys as well as student assessment data. Based on the quantitative data collected through the formative and summative assessments, overall student achievement increased. Based on the qualitative data collected through both the pre- and post-perception surveys as well as notations in the researcher’s journal, student perception of blended learning as a methodology for the classroom showed growth in achievement and a positive perception of the learning method for students.

Keywords: action research, blended learning, critical pedagogy, diversity, essentialism, progressivism, social justice, student achievement.
# TABLE OF CONTENTS

DEDICATION ......................................................................................................................... iii

ABSTRACT .............................................................................................................................. iv

LIST OF TABLES ...................................................................................................................... vi

CHAPTER 1 INTRODUCTION ................................................................................................. 1

CHAPTER 2 A REVIEW OF THE LITERATURE ......................................................................... 13

CHAPTER 3 METHODOLOGY ................................................................................................. 43

CHAPTER 4 FINDINGS AND IMPLICATIONS .......................................................................... 66

CHAPTER 5 SUMMARY, ACTION PLAN, AND CONCLUSION .................................................. 83

REFERENCES .......................................................................................................................... 92

APPENDIX A – PERMISSION FORM ...................................................................................... 101

APPENDIX B – STUDENT SURVEY ....................................................................................... 103

APPENDIX C – UNIT PLAN ..................................................................................................... 104

APPENDIX D – UNIT TEST ..................................................................................................... 118

APPENDIX E – ZIP GRADE FORM ......................................................................................... 125

APPENDIX F – SURVEY RESULTS ........................................................................................ 126
LIST OF TABLES

Table 4.1 Sample t-test calculations for Pre-test/Post-test for all students .................69
Table 4.2 Sample t-test calculations for Pre-test/Post-test for class A students ............69
Table 4.3 Sample t-test calculations for Pre-test/Post-test for class B students ..........70
Table 4.4 Sample t-test calculations for Pre-test/Post-test for class C students ..........70
Table 4.5 Sample t-test calculations for Pre-test/Post-test for class D students ..........71
Table 4.6 What is your overall perception of blended learning? (Pre-).......................74
Table 4.7 What is your overall perception of blended learning? (Post-)......................74
Table 4.8 From what you know of blended learning… for learning? (Pre-)..................75
Table 4.9 From what you know of blended learning… for learning? (Post-)..................75
Table 4.10 Blended learning has improved my interaction with my teacher. (Pre-)........76
Table 4.11 Blended learning has improved my interaction with my teacher. (Post-).......76
Table 4.12 Blended learning has improved my interaction with my classmates. (Pre-) ...77
Table 4.13 Blended learning has improved my interaction with my classmates. (Post-)..77
CHAPTER 1
INTRODUCTION

“What’s past is prologue” (Shakespeare, et al., 1997, p. 3076). In his play The Tempest, one of Shakespeare’s characters (Antonio) is attempting to convince his brother Sebastian to murder their father. The death of his father would lead to Sebastian taking the crown and becoming king, which would also usher in the start to a new and better future that Antonio believes is theirs. Antonio’s argument was that everything to that point in time has prepared them for what lay ahead. As daring, dangerous or morally incomprehensible as it may be, the idea of pushing toward something that could be amazing was something for which Antonio was ready. Of course, there were no justifications for the actions that Antonio or Sebastian were contemplating in this play, but the line Antonio uttered continues to be used as a way of describing a future that is not yet known, but one for which the past has prepared. The idea that the past has worked to prepare for the road that lies ahead is one that can be easily applied to the evolution of educational systems as well. Throughout history different cultures, countries and groups have grappled with the best ways in which to teach their children. Present day America is no different; educators, schools, school systems, departments of education and other interested parties are holding onto a past that should be released in hopes of ushering in a brighter future.
Since the Colonial era in American History, schools have changed focus multiple times to explain why they teach what they teach (Johanningmeier, 2010). When Harvard first began accepting students in 1636, its goal was to train graduates to be prepared for the ministry (Guisepi, 2016). Even the first textbook used in American Education, The New England Primer was focused on teaching both religion and reading. By the 1700s, a more secular approach to education was gaining traction. There was a renewed focus on practical content as much as the religious focus and students were being trained for multitudes of other professions other than the ministry. When the United States instituted state-sponsored schooling in the early 1800s, the main focus changed from a religious one to a nationalistic one (Guisepi, 2016).

Early in modern United States educational history, an essentialist model for education was the one most commonly used by most teachers. This method garnered great success in its time because the jobs that students would be taking were largely those that were factory jobs. As an industrial nation, the United States needed a mass of skilled workers, not necessarily a mass of skilled thinkers. It was not until Russia launched into space the Sputnik mission in the 1950s that “education critics and education reformers once again called for more and better mathematics, science, and foreign language in the nation’s public schools” (Johanningmeier, 2010, p. 348). This is one of the key events that led the United States to start reimagining its approach to education – focusing in on more applicable topics and teaching styles to improve their standing in world competition (Johanningmeier, 2010). Progressive ideas had already begun to take hold in the early 1900s through the work of John Dewey (1859-1952), but Sputnik was a wake-up call for a wider acceptance of the ideas that helped educate students in ways that moved away
from rote memorization. In this same movement, progressivism as an educational approach began to take hold in the US – a focus on the student rather than a subject or a topic. Focusing on the strengths of the student or the things students are using already to help educate them in a classroom. Shakespeare’s quote is aptly applied here: “what’s past is prologue” (Shakespeare, et al., 1997, p. 3076) because all of the things that the educational system in the US has done in its past has led to this era of split concern: standardized testing and a need for innovation.

Blended learning is a technique that has gained traction in educational communities in recent years and has shown promise in effectively doing what it set out to do: educate students in ways that fit their learning style. Definitions of blended learning differ as individual practitioners describe it in the way that it works best for them in their classrooms. Blended learning is described by Russell T. Osguthorpe and Charles R. Graham (2003):

Blended-learning combines face-to-face with distance delivery systems. … the internet is involved, but it's more than showing a page from a website on the classroom screen. And it all comes back to teaching methodologies—pedagogies that change according to the unique needs of learners. Those who use blended learning environments are trying to maximize the benefits of both face-to-face and online methods—using the web for what it does best, and using class time for what it does best. (p. 227)

The researchers point out that there is substantial disagreement within academic communities concerning the meaning of blended learning and that “those who use
blended approaches base their pedagogy (in the belief) that there are inherent benefits in face-to-face interaction as well as … online methods in their teaching” (Osguthorpe, R., & Graham, C., 2003, p. 228). Osguthorpe and Graham (2003) argue that it is clear that the individual teacher, the curriculum, the goals of the course or the school, the resources at the disposal of the teacher, school, and student are also determining factors for the practitioner in making decisions about how blended learning can work in their classroom. But that “the aim of those using blended learning approaches is to find a harmonious balance between online access to knowledge and face-to-face human interaction,” (Osguthorpe, R., & Graham, C., 2003, p. 228) in hopes of giving students a greater chance of success in their academic endeavors and achievement.

**Summary of Problem of Practice Statement**

Some students receive higher quality education than others and in public education this simply should not be the case, and for educators, it is important to ask, ‘if this is true, why?’ The answer comes down to several simple possibilities: maybe it is because of the place students live, maybe it is their demographic makeup (race, gender, sexual orientation, religious affiliation), maybe it is their socioeconomic status, or maybe it is due to the ability of the teacher they are assigned. Of these factors mentioned, an understanding of each of the implications for individual student’s education is extremely important, but there is much that the individual teacher can do within the walls of his or her classroom concerning his or her ability to teach their students in ways that best fit their abilities.
In my own experience in the classroom, I recognized that I was beginning to revert back to the sit-and-get method of teaching. To share required information with students and test them on it was beginning to become my goal each day and I saw that students were losing interest in the content being discussed and were easily distracted by other things in class. Along with this, I began to realize that my direct-instruction and a focus on test-scores was causing the students to miss important connections and applications that the social studies have to the real world – relevance was becoming a harder discussion to have because I was not allowing the kids an opportunity to see it. Due to these problems I was experiencing in my own classroom that I decided to implement a new method of teaching.

It is when a teacher decides to make moves toward increasing the quality of the educational experience in their classroom, they may be met with roadblocks, so they must understand how to best meet these obstacles with a positive, can-do attitude. The teacher must consistently strive to accomplish one thing: to teach in the way that fits the best interest of the students – whatever way that might be – to allow students as much success as possible. The essentialist approach to the current classroom environment is one that is becoming obsolete and students subjected to this type of learning are not reaching their potential. The question then is posed to the teacher: ‘what methods can be used to make this learning meaningful, engaging and beneficial to the students’ future?’ One answer could be blended learning. According to one researcher, the “use of blended learning technology could provide students with the flexibility to learn at their own pace and (help strengthen) other outside responsibilities” (Edrem, 2014, p. 203).
Research Question

To study the effects of blended learning and its effect on student achievement, an action research project was conducted with student participants enrolled in an Honors World History class to find the answer to the following question:

How does the implementation of blended learning in a world history course affect student achievement?

Summary of Purpose Statement

To the student, the teacher, the parent, the administrator, and to the legislator who enacts educational policy, a student’s success should be paramount. Teachers do students no greater disservice than when they try to fit them into a preconceived mold that they have set for a class or a group. With these considerations in mind, I have worked tirelessly to mold my classroom and have attempted to provide my students with an education that fits their individual needs. Fundamentally, teachers have to be of the mindset that each student brings different things to the table and not all students can be educated in the same way; students’ socioeconomic status, gender, race, sexual orientation and other background factors are all important factors in their education.

Blended learning is a mode of instruction for teachers that could offer an alternative to the traditional classroom. Blended learning is best defined as the “combination of face-to-face instruction as well as distance learning” (Kazu & Demirkol, 2014, p.79). The implementation of this delivery method in the classroom is one that is a relatively simple to put into practice for a teacher who is comfortable with technology, and one who is knowledgeable on his or her subject matter. Educational leaders and
policies enacted around education have boxed students and teachers in. Finding ways to open up opportunities for both groups to learn and find success, whatever that success might look like, is integral to quality education. Blended learning in a social studies classroom should be defined and identified individually for different teachers and designed specifically for their teaching styles offering continuous opportunities for inquiry and discovery at every turn; through this, student engagement and success should follow. The purpose of this research is to study the implementation of a blended learning teaching style in hopes of understanding its potential benefits to student achievement.

Summary of Literature Review

Background

John Dewey (1859-1952) lived during the early 1900s in America and was responsible for one of the most profound reform movements in American education. Progressivism aims, as described by Dr. Schramm-Pate (n.d.), are “to promote democratic social living (and) to foster creative self-learning” (p. 2). Dewey believed that a child-centered, individualistic approach to teaching children was the best way to ensure that students learned what they needed to learn for future success in real world scenarios. “Curriculum content (in progressivism) centers on student interests, involves the application of human problems and the subject matter is interdisciplinary” (Schramm-Pate, n.d., p.2).

One of the most valuable pieces of the teaching methods that have been derived from progressivism is the notion that students can help to focus their own educational
experience. In their work, VanPatten and Davidson (2010) referenced a work by Kilpatrick in 1959; they wrote, “Kilpatrick (1959) discussed Dewey’s teaching method which was coming to class with a practical problem and thought aloud various solutions through creative thinking” (p. 127). While blended learning is not necessarily problem-based or problem-centered it does offer students the opportunity to have some amount of autonomy in their learning. In the blended learning approach students are offered an opportunity to face content independently and are able to understand it in ways that may be different from other students in the classroom as well as the teacher, thus offering them a greater amount of autonomy in their learning. While the design of the blended learning classroom might be completely dependent on the teacher, there are things that must always be taken into account when someone sets out to design a course around the blended-learning environment.

Among the first things to be considered when working on a plan for this action research project are any possible prerequisites that a student might need in order to do well in a blended learning environment. If a study is going to be conducted where students are required to use technology, should there be an assessment of digital literacy proficiency among the study participants prior to the research beginning and will it affect the results of the action research? Chun and Lee (2016) found that digital literacy is in fact a prerequisite for student success in a blended learning environment. “It is quite clear that to be digitally literate, a very basic requirement is possessing the skills to use digital technology” (Chun & Lee, 2016, p. 62).

Consideration should also be given to how the blended learning environment operates. In planning this project, suggestions for effective teaching and learning in a
blended environment were searched out and studied. In their study, Minoru, Kouichi and Hiroh (2016) found that there were different factors that led to quality learning in a blended environment, two of these factors were the amount of independent studying and student note taking practices. The study found that “during the course, student's recognition of the need for better note taking skills improved, resulting in increases… (in student learning)” (Minoru, et. al., 2016, p 51). The researchers found that students must be somewhat self-driven and maintain a certain amount of discipline in order to successfully complete the tasks set forth by the instructor (Minoru, et. al., 2016, p.51). A suggestion to help students make the most of their time was that while designing the course, teachers should take in to account the individual needs of the students that they will be teaching in the blended environment (Minoru, et al., 2016, p. 51).

There are several studies that point to the effectiveness of blended learning. In a review of the book *Teaching in Blended Learning Environments*, French (2015) discusses the effectiveness of these empirical studies’ suggestions. “Teaching in Blended Learning Environments is a well-structured and informative book that will empower many readers to change and re-conceptualize the pedagogical tools and practices they employ when teaching college and university students” (French, 2015, p. 519).

Casualene Meyer reviews Bonk and Graham’s book *The Handbook of Blended Learning: Global Perspectives, Local Designs* and describes multiple global perspectives to blended learning included therein. Meyer highlights the different definitions that are offered in the work for blended-learning and how it changes from place to place and educational level to educational level (Meyer, 2008).
Students’ perception of the blended learning environment should be taken into account when designing a study such as this as well. In their research, Gyamfi and Gyaase (2015) found that when considering the “quality of the content, learning, communication and the level of engagement experienced” (Gyamfi & Gyaase, 2015, p. 97) students perceptions of the blended-learning environment was a positive one. While their findings were positive in that student learning increased due to the blended learning environment, the researchers warn that there should be more research done in the arena.

“Regardless of comparisons made by researchers and developers, those studying blended learning have agreed that student satisfaction is a baseline requirement for successful implementation” (Abou Naaj, Nachouki & Ankit, 2012, p 185). In their research, Abou Naaj, Nachouki, and Ankit worked to develop a student satisfaction survey. This student satisfaction survey was intended to gauge satisfaction on learning methodologies and learning outcomes in a classroom that utilizes a blended learning environment. Aside from finding that student satisfaction is an absolute requirement for blended learning to be successful for student achievement, the researchers found that the “level of satisfaction varied according to gender” (Abou Naaj, et. al., 2012, p 185).

**Overview of Dissertation in Practice (DP)**

One philosophy of teaching follows that of John Dewey (1859-1952) that a student’s success is paramount (Dewey, 1938). The job of the teacher is to help students they teach to find their success, no matter what it might be. Buzz words, new methodologies, different pedagogies, and professional development are all great to try and inspire educators to be better practitioners and meet the needs of their students in
whatever way necessary, but it goes deeper than that. Teachers must understand that theirs is a profession where one size does not fit all for each student they teach. Teaching is a profession where diversity abounds and cannot be used as an excuse for why students are not given the same opportunities for success. As Adams (2013) points out, “diversity is too often used to provide an excuse or justification for inequality” (p. 1) and this just simply should not be the case for any student in any classroom. Students may share the same age, the same mental capacities or similar experiences, but they learn in very different ways and each is valuable. How can the experiences of teachers be changed so that the experience of students takes a new path? Or, more pointedly, in what ways can teachers offer students the ability to thrive in the classroom? Can students be met where they are in hopes of taking them to a higher level of learning or understanding? If teachers can find these methods or tools needed to do this, they should be used and used consistently.

The significance of this study is to research one possibility for giving students opportunities to thrive in an emerging technologically driven environment no matter the diverse lives they lead. Diversity is an important part of this research because if found to be effective, blended learning could help to erase some of the lines that divide the educational landscape for students giving them more opportunity for an equitable educational experience. Also, as technology becomes more important in the daily lives of children and adults, it is important that educators seize the opportunities that it provides and make it a tool for educating students. Blended learning is a method for educating students using tools that they will use in the future and has a great chance of
promoting equality across diverse groups; it is because of these reasons that there is great significance in understanding its effects on student achievement.

Classrooms across America look very different – they range from the innovative to the highly traditional. So, according to Langa, “the challenge is not just finding out innovative approaches to the use of technology (blending learning), but "reinventing student- teacher relationships" and even "giving the lead to our students and involve them in teaching and learning activities as partners" (Langa, 2016, p. 127). Can blended learning be a bridge that helps to build a different relationship for teachers and students? This research measured student achievement in hopes of helping teachers, administrators, parents, and anyone else concerned with the education of young people understand how to best educate the next generation and prepare them for the diverse world they will soon lead.

Summary and Conclusions

This Dissertation in Practice examines the effectiveness of the implementation of a blended learning environment in a 10th grade social studies classroom through an action research study. The chapters included in this this Dissertation in Practice are as follows: Chapter 1: “Introduction”; Chapter 2: “A Review of the Related Literature”; Chapter 3: “Methodology”; Chapter 4: “Findings, and Implications”; and Chapter 5: “Summary, Action Plan, and Conclusion.”
CHAPTER 2
A REVIEW OF THE LITERATURE

Individuals are born into certain social identities that lead them to hold unique roles in society; often times these roles are unequal, which inevitably leads to the oppression of one group and the dominance of another (Harro, 2013). Dominant groups in societies decide the qualification of subordinates in society; their rules are instilled and then perpetuated (Kirk & Okazawa-Rey, 2013; Tatum, 2013). So, for an argument to be made that public education is offered equally to everyone and that all students have the same opportunity to achieve is not necessarily an accurate statement. Due to the historical foundations of the story of public education in the United States, it stands to reason that education has not ever been equally accessible to all students enrolled. Whether it is the quality of the teacher, the socio-economic status or the unclear educational focus of the child, the teacher, the school or school system, their access to technology, students’ diverse backgrounds, or other roadblocks to change – there are some very real issues to overcome when attempting to equalize the educational landscape for all students in public schools.

An important piece to consider when discussing unequal opportunity is that there is much that is out of the hands of the teacher. Most teachers are not empowered to change much since some of these things are either decided for them or are prescribed to them based on where they teach or the students they are teaching. Teachers simply do
not have many tools available to combat some of these issues. In their work, Shalem, De Clercq, Steinberg, and Koornhof (2018) report that one such example of this is standardized lesson plans. Shalem, et. al. (2018) reported that “standardized lesson plans (SLPs) were criticized in the 1970s and 1980s for deskill the teaching profession and reducing the work of teachers to that of mere technicians. This critique is now returning at a time of growing regulation of teachers’ work in many school systems” (p. 205).

There is one area however, in which the teacher has much power – it can be found in the way they structure their learning environment and what happens when they make decisions about how to best reach their students and then they begin to teach their kids. While teachers may not enjoy full autonomy, good teachers, being knowledgeable of the information they are required to teach and having taken the time to know their students should be able to create an environment where students can learn effectively (Shalem, et. al., 2018). Regardless of the parameters placed on them from outside the classroom, some being things they cannot change, teachers have a duty to work for the betterment of their students in whatever way possible once the door to their classroom closes and class begins. Since there are a multitude of options that teachers have when they enter their classrooms concerning the ways in which they teach and their students learn, new and innovative modalities for teaching and learning should be tested. One such relatively new and innovative modality is blended learning and it leads one to question: does blended learning, the mixture of in person and digital distance learning, have an effect on student achievement?

This literature review is divided into sections that underscore the research and literature on the subject. The first section deals with the purpose of the review, the
second describes the key concepts used, then a discussion of the historical and theoretical perspectives, the next section deals with the rationale for blended learning, then a how-to guide according to the research for how to effectively implement and operate a blended learning environment, next the use of technology in a blended learning environment and finally a look at the different perspectives of the students who have been involved in a blended learning scenario.

The information used for this literature review was found through such search engines including ERIC and Google Scholar. Scholarly articles, textbooks, entries from academic journals and other books written by experts and researchers were used. The information was read and then annotated for use in the study. The information is cited using the American Psychological Association’s guidelines and is included in a reference section at the end of the work.

**Purpose of the Review**

This chapter deals specifically with the information produced by experts in the fields of education, blended learning, educational theory, diversity and social justice, educational practice and educational technology. This particular literature is important to this body of work because it sheds light on the research basis of the action research conducted concerning the implementation of a blended learning environment. The research helped to shape and clarifies the plan, scope and range of study in this action research by exemplifying other studies that have been conducted over time concerning similar subject matters.
The research that is being used in this study was considered through several lenses concerning blended learning and other aspects of the educational realm. The lenses used and considerations were given to the timeframe in which studies were written or conducted; considerations were given to the intent of the studies, subjects of the studies, the locations of the studies, the findings of the studies, the methods used in the studies as well as any possible limitations within the studies. Other literature was gauged on the value of the content relative to the topic of blended learning as well as the implications of the information for the action research being conducted. All aspects of the research were considered regardless of the positive, negative or neutral results of the studies, the implications of the information or the extent of the information.

**Key Concepts**

Before beginning an action research study, a consideration of the historical perspectives as well as the theories of educational thought and policy should be discussed. Progressivism, essentialism, the scholar academic ideology, the social efficacy ideology, the social reconstructionist ideology, and the learner centered ideology are discussed. Along with the theoretical information, the important theorists such as John Dewey (1859-1952), Charles Eliot (1834-1926), E.D. Hirsch (1928 - ), Franklin Bobbitt (1876-1956), Ralph Tyler (1902-1994), George Counts (1889-1974) and Francis Parker (1837-1902) are considered for their thoughts and research in their respective fields. Certain aspects of diversity and social justice are considered in this review of the literature because it gives the researcher a clearer understanding of the foundations from which the students are coming. A review of diversity and social justice issues also helps
the reader to understand the purpose of the study as an attempt to equalize the educational landscape for all students using a blended learning teaching approach.

**Review of the Literature**

The following includes the concepts that outline the breadth and scope of the review of the literature for this action research. The organization of the information from the review of the literature is presented as follows: first, a consideration of how history and pedagogical pioneers have had influence in the creation of the building blocks for a blended learning environment and a discussion of diversity and social justice, then a discussion of the theories that combine to make blended learning possible, following is the rationale for using a blended learning approach in a classroom setting, then a discussion on best practices when creating and operating a blended learning environment and finally a discussion that considers the perspectives of students in a blended learning environment.

2.1 BLENDED PERSPECTIVES: HOW HISTORY HAS SET THE STAGE FOR A BLENDED LEARNING APPROACH

History has shown an educational landscape where existing themes that defined different ways of and reasons for educating have changed with the times. There was a time for educating children to be memorizers and success was based on regurgitating facts and figures (Mertler, 2014). In its time, the essentialist way of educating students was effective for the purposes in which it was intended. The essentialist education upon graduation produced students who could enter a workforce that provided them jobs where the need to understand the ‘how’ was more valuable than understanding the ‘why’. This
is not to say that all students graduating from an essentialist educational system were
doomed to enter a factory or a blue collar scenario, it is just to say that this was the
economic world for which they were prepared (Mertler, 2014).

Testing, achievement, and the best ways to ensure the success of children was
also a concern for some of the earliest philosophers that wrote concerning education. In
his book, *Emile or On Education*, Jean-Jacques Rousseau describes how adults should
allow a student to learn and in doing so, he offered that this student would become “an
autonomous adult concerned for the common good” (as cited in Zuckerman, 2012, p. 23).
Rousseau described the fictional character, Emile, as a student who “to the age of twelve,
(his) education was entirely by experience. He did not go to school, know of books,
cultivate reason, or endure moral indoctrination” (Zuckerman, 2012, p. 21). Rousseau’s
thoughts on an ideal education for a child included that the “pedagogy should be child-
oriented; and that there are age-related stages, to which the approach towards the child…
must be tailored; and that children must only be offered knowledge when they display a
need for it” (Koops, 2012, p. 50). While it may not exactly be what Rousseau had in
mind, blended learning gives teachers flexibility in their teaching methods due to the idea
that most agree that there is no one set definition of the teaching method and it gives
students a certain amount of flexibility that they may not have realized before. Rousseau
did not discourage the need for an educator, rather he offered that the person should
educate from a certain distance. “The key point… is that the authority of the tutor is
never exerted over the child in any immediate way. Rather it must always prepare
experiences for the child ‘from afar’ (Lewis, 2012, p. 92). In doing so, Lewis (2012)
offers that at the very least an ‘appearance of freedom’ is there for the child (p.92).
Blended learning serves to fulfill Rousseau’s idea that teachers should not consistently be the center of the child’s education. His suggestion that the tutor (teacher) should be doing their job without being the center of the equation helps to underscore the argument for the potential success of blended learning. “The citizen of the West is a Child of the Enlightenment” (Koops, 2012, p. 46) and it can be argued that educational systems should be held to this standard. Rousseau was credited with saying, “teach by doing whenever you can and only fall back upon words when doing is out of the question” (as cited in Chapman & King, 2012, p. 71) and 300 years later, there is a movement working to make his ideal a reality.

Gaining traction in the early part of the 20th century, a different form of educational theory found acceptance in some circles. Progressivism is a theme that emerged with the writings of John Dewey (Mertler, 2014). Dewey’s ideas led to a view concerning education where each individual student is, or should be, the center of any educational program. According to Dewey, students’ needs and interests should guide the happenings in the classroom and inquiry, discovery and innovation should be championed (Mertler, 2014).

The four commonly accepted curriculum theories are the Scholar Academic Ideology, the Social Efficiency Ideology, the Learner Centered Ideology, and the Social Reconstruction Ideology (Schiro, 2013). Each of these ideologies offer different philosophies for how curriculum should be constructed, for what reasons certain curriculum should be taught, and how teachers should go about the task of educating the children in their care. Each ideology is explained in order to understand its implications
on the motives for the creation, implementation, and operation of a blended learning educational environment.

The Scholar Academic Ideology is a theory that argues “formal education that takes place in schools as a process of (ac)culturating children into society in such a way that they become good citizens” (Schiro, 2013, p. 15). E.D. Hirsch (1987) argues that this requires teaching students “the basic information needed to thrive in the modern world” (Hirsch, 1987, p. xiii). Charles W. Eliot, a former President of Harvard University, who was a proponent of standardization, also believed that the only way to better society was to develop the mental power of the people (Schiro, 2013). The Scholar Academic Ideology points to the necessity for students to become mini-scholars in the field of academia, that a person’s “essence is summed up by his ability to think, to understand, to know, to reason, to reflect, to remember, to question, and to ponder” (Schiro, 2013, p. 24). The ideology and its proponents argue that it is through this theory that children are best educated. This ideology has become entrenched in modern schooling environments and “continuing pressure is exerted on states by many Scholar Academic advocacy groups to make state standards conform to the group’s conceptions of what the content of standards should be” (Schiro, 2013, p. 42).

The Social Efficiency Ideology suggests that the purpose of schooling is to “efficiently meet the needs of society by training the youth to function as future mature contributing members of society” (Schiro, 2013, p. 5). Using Franklin Bobbitt’s argument that there should be a ‘scientific technique’ in creating curriculum, Ralph Tyler in 1949 posed the four underlying questions as to the creation of curriculum or instructional program. These questions guided the Social Efficiency Ideology into its
present state to work for the good of society and not necessarily the child. The education of the child is a byproduct of the larger aim of creating a better society (Schiro, 2013).

Another educational ideology that focuses more on the larger concept of society rather than the individual child is the Social Reconstruction Ideology. This ideology makes two assumptions at its core: first that society is fundamentally unhealthy; and second, that something can be done to keep society from destroying itself (Schiro, 2013). Social Reconstructionists believe that ‘education… has the power to educate people to analyze and understand social problems, envision a world in which those problems do not exist and act so as to bring that vision into existence” (Schiro, 2013, p. 152). George Counts, a leading Social Reconstructionist theorist argues that “to the extent that they are permitted to fashion the curriculum and the procedures of the school they will definitely and positively influence the social attitudes, ideals, and behavior of the coming generation” (Flinders & Thornton, 2013, p. 45). As noble as this might seem, in a public school setting, arguments against a teacher taking this kind of moral role in a student’s life might be concerning to some.

The final major curricular ideology supported by many educational theorists is the Learner Centered Ideology. John Dewey writes in his work “My Pedagogic Creed” that he believes

“the individual who is to be educated is a social individual, and that society is an organic union of individuals. If we eliminate the social factor from the child we are left only with an abstraction; if we eliminate the individual factor from society, we are left only with an inert and lifeless mass. Education therefore must
begin with a psychological insight into the child’s capacities, interests, and habits” (Flinders & Thornton, 2013, p. 34).

It is in part because of these beliefs that he makes the argument that education should focus on the individual needs of the child – that the child, his or her interests and desires should guide them in their educational endeavors.

According to the Scholar Academic Ideology, the role of the teacher is to act as an intermediary between the information and the mini-scholars they are charged with creating. Teachers are there to help interpret current knowledge and present a discipline to students rather than the creation of new knowledge (Schiro, 2013). In the Social Efficiency Ideology, the teacher’s role is to guide, motivate and assess students all the while managing the conditions of learning, both preparing the learning environment and supervising the work in that environment (Schiro, 2013). The Social Reconstruction Ideology positions the teacher as the savior of society; the teacher is the agent that is in place to reconstruct a society that the Reconstructionists believe is unhealthy. The Learner Centered Ideology describes a teacher whose role is based on three basic functions: first, to observe students and diagnose their individual needs and interests, second, to set up the environment in which they can best learn and third, facilitating students and their growth by intervening between them and the environment to help them as they learn (Schiro, 2013).

It is the combination of each of these curriculum ideologies that give rise to the idea that there must be a middle ground. Since most modern schools are entrenched in the Scholar Academic Ideology, some schools, teachers and others find themselves
unable or unwilling to make changes that may benefit their students. However, there are valid arguments for and about each of the other methods to attaining success with the curriculum and, in turn, the design of it. Each of the four ideologies gives a glimpse of the historical movement of educational philosophy and lays the path for an argument for a blended learning approach to curriculum design and delivery.

History has also proven that education, like other facets of human existence, has not been an opportunity afforded to everyone based on several distinct factors. Oppression operates on multiple levels and to understand its effect on our systems of education, one must understand how it affects all of these levels. The individual, the institutional, and the societal/cultural level are all levels in which oppression takes hold (Hardiman, Jackson & Griffin, 2013) in the form of different faces. According to Young (2013) there are five different faces of oppression: exploitation, marginalization, powerlessness, cultural imperialism, and violence. Each of these faces function as criteria for determining whether individuals or groups are oppressed (Young, 2013). In order to rectify this oppression, “a civil rights pedagogy prepares young people to interact in a variety of contexts with people different from themselves by illuminating the diverse world views of people in our nationality who are usually omitted, marginalized, or misrepresented” (Schramm-Pate & Jeffries, 2008, p. 2). Society is socialized to accept systems of oppression as normal and the beliefs are either consciously or subconsciously passed on about the oppressors or the oppressed (Hardiman, Jackson & Griffin, 2013). The authors point out that it is through a person’s own experiences that they are able to break the cycle of accepting these oppressions – that people can change their own minds with new awareness, information and action (Hardiman, et al., 2013).
Systems of oppression are found in modern day schools and should be considered through a better understanding of multiculturalism. There are two narratives of multiculturalism: the narrative of normalizing multiculturalism and the narrative of liberal multiculturalism (Carlson, 2013). Normalizing multiculturalism is about building sympathy for the ‘other’ in a way so that the dominant group does not have to give up their power and liberal multiculturalism is where there is a leveling of the playing field where a challenge is made to institutional structures such as tracking and ability grouping along with standardized testing (Carlson, 2013). Castañeda (2013) argues for a system that would assist all in developing multicultural competence, the “FLEX” System. In the FLEX model one must: foster interconnectedness, listen and communicate, encourage respect, and explore differences (Castañeda, 2013).

In the realm of education, a teacher has a great opportunity to look at their curriculum in a broad sense, beyond traditional structures (Jeffries, 2013). Recognition of the fact that marginalized people have a natural connection to each other and this connection is strengthened through working together in concert to gain movement. This idea of working together is better than working alone so that these marginalized people can make meaningful change (Jeffries, 2013). How does an educational professional assist in this opportunity to make change? Through becoming a ‘trickster’ for the curriculum and his or her students (Jeffries, 2013). A ‘trickster’ is a change agent, or someone who is able to see the larger picture and chooses to do whatever they need to in order to get something done (Jeffries, 2013). An understanding of oppression and multiculturalism and how it affects people in society is important to understanding the logic behind studying the blended learning approach to classroom teaching. Students in
classrooms that offer only one way of learning, or one methodology by which to attain information are inherently oppressive to students who do not respond well to that particular way of learning. It is through recognition of these actions as oppressive and understanding the possible differences in students through a multicultural lens that strides can be made to improve their educational experiences. By implementing a blended approach, the researcher becomes the ‘trickster’ in the classroom and offers students an opportunity to take all other factors that help define them off the table.

2.2 THEORIES THAT BLEND: HOW THEORIES COMBINE TO CREATE AN ARGUMENT FOR BLENDED LEARNING

“Blended learning is a new type of education prepared for a certain group by combining the positive aspects of different learning approaches” (Kazu & Demirkol, 2014, p. 79). Taking different aspects of the curriculum ideologies and combining them into one package puts into practice some of the most valuable parts of each of the ideologies. Each of the individual ideologies has their root in educating the child, albeit with different methods and with different goals in mind leaving a vast array of approaches available to teach the child. Blended learning is one of such approaches. “The lack of a single accepted definition for the term blended learning causes teachers to understand blended learning in different ways and then design their courses according to their own understanding of the concept” (Alammary, et al., 2014, p. 440).

Since there is not necessarily one universally accepted definition of the blended learning approach to the curriculum, teachers have the unique ability to choose their role and design their course in a way they see fit to best work to educate the children they are
teaching. “The term means different things to different people; however, many researchers suggest that the lack of a universally accepted definition may in fact be part of the term’s strength” (Alammary, et al., 2014, p. 443). Taking from any of the prescribed roles discussed in the common ideologies, teachers, their schools or school systems have broad latitude to make blended learning what they wish it to be. “It is evident that the term blended learning has been identified either in a broad way where it encompasses a broad range of learning modes, or in a very specific way that might limit the great potentials of the concept” (Alammary, et al., 2014, p. 443). However, any definition of blended learning seems to “have one essential component in common – an integration of different instructional methods” (Alammary, et al., 2014, p. 443).

In the blended learning environment, the role of the teacher can be but does not have to be a combination of pieces of the four ideologies. The teacher can be the purveyor of knowledge, while at the same time offering an opportunity for students to create and design their own experience in the course. Teachers can be assessors while also being an example for students to become a more socially conscious individual. Progressivism and essentialism can thrive in a blended learning environment.

For the purposes of this study, the definition of blended learning that is used is described by Kazu and Demirkol (2014) as a “combination of face-to-face instruction as well as distance learning” (p.79). Being that the term can also be referred to as “hybrid learning and mixed learning” (Kazu & Demirkol, 2014, p. 79) clarity is very important when describing blended learning in this context. Since this is a very basic definition, it can be molded to answer to the level of blended learning or interaction that a teacher feels comfortable with implementing in their classroom. The justifications for using such an
approach will be discussed in later text, but “over the last decade, blended learning has been growing in demand and popularity… and has become a widespread teaching phenomenon. It becomes increasingly evident that blended learning can overcome various limitations related to online learning and face-to-face instruction” (Alammary, et al., 2014, p. 440).

2.3 WHY BLEND?: RATIONALE FOR USING A BLENDED LEARNING APPROACH

As John Dewey argues, reaching students where they are to get them to where they could be is a very important piece to making sure they find success; therefore, it can be argued that the aim of any educational institution should be to ensure the success of their students (Dewey, 1938). Success is defined in multiple ways and different people or institutions value certain accomplishments over others. While there may be differing views concerning how to define or quantify success, in an educational setting the word ‘achievement’ is commonly used. Along with the word ‘success’, achievement also has a myriad of different definitions. As defined by Chavarría, Villada Zapata, and Chaves Castaño (2017), and for the purposes of this study, achievement will be defined as “the quality of activities or their outcomes as evaluated by some standard of excellence” (Chavarría, Villada Zapata & Chaves Castaño, 2017, pg. 329). In the field of blended learning, much research has been done that measures not only numerical achievement, but also a deepening of the richness of individual courses of study. “The central purpose that should drive all other motives is to improve student learning. Blended approaches
permit faculty to change the way they use class time... all for the purpose of helping students master the content more effectively” (Osgulthorpe & Graham, 2003, p. 231). While there are arguments that achievement means much more than a number, for the scope of this study it is important that achievement is quantifiable.

When considering where educational theories or philosophies of learning have brought the current educational landscape, understanding that students have changed just as much as the philosophies while schooling looks much the same as it did before. Research shows that when comparing a blended learning environment consisting of a focus on student directed, student led, technology infused instruction with a traditional learning environment consisting of a focus on direct, teacher led instruction, “the academic achievement average of the students who have studied in blended learning environment has been found higher than the academic achievement average of the students who have studied in traditional learning environments” (Kazu & Demirkol, 2014, p. 85).

Blended learning offers an opportunity for higher student achievement that may not be available to students otherwise. “That the traditional learning is ineffective in terms of learners’ participation and interaction, it is filled into a limited time period and... distance learning (has) caused the emergence of this new learning environment” (Kazu & Demirkol, 2014, p. 79). The logic for offering a blended learning environment in an educational setting is one that gives students much more flexibility in their learning as well as more depth and richness to their studies. “Major reasons for faculty adoption of the blended technique are to increase student engagement and involvement in the learning process and improve student learning” (Kenney & Newcombe, 2011, p. 49),
thereby increasing their level of achievement. Not only used to improve achievement, blended learning is used by some institutions to help strengthen their pedagogical goals (Kenney & Newcombe, 2011).

Students’ attitudes toward their academic achievement are also an area of concern for teachers and are an added concern for the scope of this action research. Since their students’ achievement has a bearing on their employment, their attitude toward their profession, as well as the learning that is able to go on in their individual classes – understanding the students’ mentality toward a certain way of learning is important to understanding achievement.

Preparing students for a future that is not yet known is also of vital importance for educators and society as a whole. In the introduction of their study looking at blended learning in a secondary school setting, Timothy Florian and Jay Zimmerman (2015) offer this introduction:

The global delivery of education is in flux. Institutions are searching for viable options to cope with the supply of and demand for skills required by a global workforce. Students need options to maximize their ability to gain the skills necessary to compete for future jobs in the global economy. Educators also need tools that will increase student engagement in the learning process and ensure that students are obtaining the skills that will be in demand in the global economy.

(p. 103)
It is imperative that teachers, schools and educational institutions continue to search for the best ways in which to prepare students for their future. This action research study will consider the blended learning methodology as one possible way to reach this goal.

2.4 HOW TO BLEND: METHODOLOGY

Since blended learning has a definition that can be interpreted in many different ways, teachers and practitioners of blended learning take many liberties with the ways in which they set-up their blended environments for their students. “An instructor’s understanding of the term ‘blended learning’ is normally used as a basis for course design” (Alammary, et al., 2014, p. 443). There are teachers who set up their learning experiences to require a certain amount of time with each of the face-to-face and the distance modalities while there are others who choose to offer complete flexibility in the amount of time their students spend in each of the environments. Teachers also prepare their assignments in different ways. Some follow the essentialist approach to the curriculum – offering face-to-face instruction as well as distance instruction all the while prescribing each step that the students undertake. There are some however, who choose to offer students complete choice in how they learn the material that they are tasked to learn using the progressive student or learner centered approach (Mertler, 2014).

There are different models of blended learning that have been implemented and tested in different scenarios. Six blended learning models will be highlighted in this review due to two major factors: 1), in the researcher’s experience in using blended learning as a method for teaching, these are the models that have proven to be the most effective and 2), they work very well in a social studies classroom. Alammary, Sheard,
and Carbone (2014) described three possible design methods for a blended learning environment: a “low-impact blend: adding extra activities to an existing course, (a) medium-impact blend: replacing activities in an existing course (and a) high-impact blend: building the blended course from scratch” (p. 443). Lai, Lam, and Lim (2016) point out, with regard to the work done by Alammary et al., that even though “the differentiation provides some guidelines to design a BL (blended learning) course, there is still a research gap of how the online and FTF (face-to-face) components can be thoughtfully combined” (p. 717). Alammary et al. (2014) discuss however that there are both challenges and benefits for each design, but that the combination of “face-to-face and online components… needs to involve a great deal of planning and forethought” (p. 443). These researchers conclude “moving from the low to a higher impact approach requires from the instructor increasing effort, technological knowledge, confidence, support, skill and expertise; however, there is also increasing potential for the traditional course to be improved” (Alammary et al., 2014, p. 448).

Another model of blended learning suggested by researcher Tim Boyle (2005) offers that the design of the blended learning atmosphere should be “pedagogically driven” (p. 231). In his research, Boyle (2005) suggests several steps to ensure that the blend is effective. The research suggests a six-step approach: “1) provide the right balance of creativity and structure; 2) be flexible and support iterative development; 3) encourage and support collaborative, team-based working; 4) involve tutors; 5) be robust in the face of development noise; (and) 6) deliver results” (Boyle, 2005, p.223). His research concludes that the blend should “start with the needs of the users” (Boyle, 2005, p. 231) and should change or expand, as the users get more and more comfortable with
the first changes. “A blend of the familiar components together with the new components will be more acceptable to them (students). Over time, as the new components become accepted, it should be possible to extend the blend in more novel and radical directions” (Boyle, 2005, p. 231).

Unlike the previous models, a third example of how to create a blended learning environment is one that is predicated on a four-step plan. This blended learning model is based around the social constructivist approach to the curriculum, “emphasizing the individual student and his or her way of studying through self-governed work” (Dalsgaard & Godsk, 2007, p. 30). The researchers argue, “designing constructivist learning environments recommends that students are provided with a range of different tools and resources to support their problem-solving” (Dalsgaard & Godsk, 2007, p. 31). So, they designed a four-step methodology to work as the design for their blended learning environment, the four steps are as follows: “formulating a problem, developing open-ended materials, restructuring the model (and) changing roles of teacher and students” (Dalsgaard & Godsk, 2007, p. 32). Since their goal in this study was to look at ways to reduce lecture time and transition into a more student-based learning style, their research suggests they were successful in their implementation of the blended learning environment, attaining the goal they set out to accomplish (Dalsgaard & Godsk, 2007).

A fourth example of how to set-up a blended learning experience for students is presented by Pam Jimison (2011). In this study, a blended learning methodology is intertwined with a program suggested by NASA called the ‘5E Instructional Model’ (Jimison, 2011, p. 61). The model suggests that there are five basic steps in creating a learning experience for any type of learner (NASA, n.d.). These steps, when combined
with the teacher or institution’s definition of blended learning, can provide students with an exceptional methodology for learning. The five steps for the ‘5E Instructional Model’ are: “engage, explore, explain, elaborate (extend) and evaluate” (Jimison, 2011, pp. 61-62) and that they must follow these steps in order for a student to learn.

Finally, Mark Stevens (2016) discusses in his writings the importance of space in a blended learning environment. This researcher was one of the first in his district to take up blended learning as a teaching modality and accordingly, he was surprised with the things he learned about the importance of the space that he and his students utilize (Stevens, 2016). Stevens (2016) says, “my classroom is a place where my students and I inhabit emotional, physical and technologically mediated virtual spaces” (Stevens, 2016, p. 50). He describes how the physical spaces that he and his students take are important and should be planned out just as carefully as the assignments or activities within the blended learning environment itself. He points out “however, we also inhabit historical spaces of social significance as well as places of institutional and personal histories” (Stevens, 2016, p. 50) as well. “In my ongoing attempts to build and sustain productive spaces for learning, I have seen the ways in which… learners are naturally innovative creators and users of spaces, both online and off” (Stevens, 2016, p. 52). This author is suggesting that along with careful consideration of the curricular aspect of the blended learning design, the design and the conscious effort at recognizing what kinds and how space is used in the environment is important as well.

For the purposes of this action research study, the blended learning for the Honors World History classroom will be set up using both face-to-face and distance learning techniques to offer instruction and activities. It will follow the “medium impact blend”
(Alammary et al, 2014, p. 443) in that existing activities in the course will be replaced by a blended methodology. This type of blended learning was selected because this is a recurring course with an effective structure.

As Boyle (2005) suggests, the curriculum for this action research study is pedagogically driven to align with the Proposed 2020 College- and Career- Ready South Carolina Social Studies Standards and both the essentialist and progressive approach were at the forefront of the design process. In an attempt to ensure student success, Boyle’s (2005) six-step outline will be used as a guide during the design of the blended learning environment.

The Curry Samara Framework, created by John Samara and Jim Curry, for student choice will also be incorporated into the blended learning approach used in this action research study. This framework will be used to create assignments or activities that will speak to the standards or learning targets that the students are required to meet. The Curry Samara Unit Model is a model that was created by James Curry and John Samara and uses Bloom’s Taxonomy to help guide the instructor in creating leveled assignments for students (Gresham & Porter, 2017). This unit model offers students multiple opportunities for creativity, individuality, complexity and depth in a given subject matter. The Curry Samara Model is an “integrated, standards based approach to curriculum development that addresses differentiation from three dimensions (content, process and product)” (Gresham & Porter, 2017, p. 1).

The amount of time students spent in a face-to-face environment and the distance environment in this action research study was equally divided. This set up followed both
the essentialist and progressive approach to the curriculum in that there was a necessity for teacher led or teacher guided instruction as well as multiple opportunities for students to make decisions about their own assignments and activities for each individual unit. Along with the curricular set up of the blended learning environment, careful consideration was given to the different kinds of space the students and the curriculum occupied and how that was used to further the education of the student and the curricular goals of the class.

2.5 A BLEND OF TECHNOLOGY

When implementing a blended learning environment in a classroom the teacher must consider the underpinnings of the approach. There are two basic underpinnings for any blended environment on the distance or online learning side; first is the level at which both the teacher and the student feel comfortable with the use of technology and second, the types of technology that can or should be used. Blended learning’s history is one that used innovative and creative forms of distance learning from the outset. “The history of blended learning models… can be traced to the Chautauqua Movement for rural Sunday School education circa 1890s, with teachers giving instruction followed by lesson completion via the U.S. Postal Service” (Florian & Zimmerman, 2015, p. 104). Since that time, there have been multiple changes in blended formats, with a movement beginning in the 1990s to a web-based design (Florian & Zimmerman, 2015). Each of these movements grew out of the need for individuals to understand the use of the given technology during their time. Currently, businesses are leading the way in setting the standard for the types of skills that students need to operate fully in a global society (Florian & Zimmerman, 2015)
A problem can occur when students and teachers are not well versed on the uses of the different types of technology and stumbling blocks are created between students and the learning that can take place. “Digital literacy for learning is more than just knowing how to operate the technology, but also having the right information management and critical thinking skills, as well as proper online behaviors” (Tang & Chaw, 2016, p. 54). It is when teachers and students understand the uses and possibilities for technology to supplement their education that deeper learning can happen. Douglas, Lang and Colasante (2014) conclude in their study that “integrating an online innovative tool… using a blended learning approach can reinforce and deepen reflective learning for professional or workforce knowledge and skills” (Douglas et al., 2014, p. 18). To integrate a blended learning environment, proficiency in the use of technology is required (Tang & Chaw, 2016). There is prerequisite knowledge that students and teachers must have about the use of technology, even on the most basic levels, there must be a level of comfort in using the technology so that the content of the course will be meaningful to the student. Students must not waste time fumbling around with technology and learning how to use it when they could and should be using that valuable time learning and exploring the content in question (Tang & Chaw, 2016). Of course, there is always room for innovation and exploration of new forms or types of technology, but this should not hamper the student’s learning in any way.

Since blended learning looks different for each user of the teaching modality, it is dependent on the individual teacher or scenario as to what kind and how much technology is required. “Although there is a growing body of research on innovative, multimodal, interactive, multidisciplinary environments, both physical and virtual, these
efforts have yet to span across domains and pedagogical approaches” (Ioannou et al., 2015, p. 47). Different types of technology are important to consider. According to Beres and Turcsanyi-Szabo (2012), “there are different approaches for effective online teaching and learning… in the learner centered approach, activities are used for exposing student’s prerequisite knowledge” (Beres & Turcsanyi-Szabo, 2012, p. 7). For some blended learning scenarios, teachers will find use for certain types of technology that would not be useful for others to reach certain goals. Depending on the types of assignments, expectations of the teacher for the students as well as the level of proficiency shown by both teacher and student – some technologies may not be suitable for every blended learning situation.

For the purposes of this action research study, the requisite knowledge of technology for students are that they know how to use a computer comfortably and have a working knowledge of the Internet. Students were required to understand how to use the website for the textbook, Google Classroom, Weebly, YouTube, Remind101, and other various Web 2.0 tools to learn, create, and explore content. Students were also expected to have an understanding of how to adequately search the Internet for information using search engines such as Google, Yahoo or Bing for articles and other required content for the course. These are platforms that are used frequently within classrooms of the school of study. Prior to beginning the blended learning environment in the classroom, the teacher gave refresher sessions on how to use each of the technology and web-based programs for the students. This was done so as to ensure that there is a baseline of common knowledge among the students before embarking on a blend where they were asked to use these tools to complete their work. Along with the necessity for
students to understand how to use technology, they also needed to be taught how to research adequately, especially to help ensure the information they find is of value and is valid. Students were required to review the rules against plagiarizing and the rules concerning citing information they use for their different activities in order to be well informed about them.

2.6 BLENDED PERSPECTIVES FOR STUDENTS

When implementing a blended learning environment, it is imperative that the perspectives of the students taking part in the learning scenario are taken into account. “In particular, students’ personal beliefs and attitudes towards web-based education constitute a critical factor to the successful incorporation and adoption of such systems in the learning practices of an institution” (Tselios, Daskalakis, Papadopoilou, 2011, p. 224).

In their study, Monteiro and Morrison (2014) indicate that before, during, and after students work in a blended learning environment, they often have different opinions of their experiences. In this study, students participated in a blended learning approach using mixed methods for receiving information and were assessed in order to understand their retention of this information. They were also given the opportunity to provide survey responses through an initial perception of blended learning survey and then offer feedback on the same survey after the research was completed. Interviews, conducted to gauge student perceptions of their experiences, revealed “working with others became easier and they were able to exchange ideas and opinions, (it) taught them the value of listening to others, patience and understanding others’ views, and to work with others”
Aside from working with others, the students reported that this method gave them the opportunity to learn how to “have control over their time, to cooperate, and prepare them for the world of work” (Monteiro & Morrison, 2014, pp. 583-584). The students even went further to describe how this learning process gave them new perspectives on how they best learned and opened up opportunities for deeper learning in the content (Monteiro & Morrison, 2014). Along with the positive responses, students were also quick to point out some of the challenges they encountered while working in the blended learning environment as well, pointing out that deadlines were sometimes a problem for some of the students who were lazy, that the success of the distance learning things depended on what happened in the face-to-face time and that if there were changes to the set-up of the blend, it was frustrating to them to try to keep up (Monteiro & Morrison, 2014).

Nakayama, Matsuura, and Yamamoto (2016) also studied student perceptions at the end of the blended learning process. The researchers concluded through student questionnaires that while most responses to the blended learning environment were positive, there were issues with learning hours outside of class (Nakayama, Matsuura & Yamamoto, 2016). “The insufficiency of student’s outside-of-the-classroom learning activity in comparison with the lecturer’s expectations in the context of conventional learning environments has been widely discussed… (and) the same phenomenon in this blended learning course was confirmed” (Nakayama et al., 2016, p. 51). The researchers do not believe that students put in enough time outside of the face-to-face portion of the course in order to succeed in the blended learning environment. However, the researchers also concede that there is no real way to know exactly how much time
students spent outside of class studying (Nakayama et al., 2016) therefore making their assumption questionable.

Tselios, Daskalakis and Papadopoulou (2011) discuss the perceptions of their students in a blended learning environment. They point out that it is important to consider their perceptions about the methodology both prior to and after working in the environment (p. 232). “This finding stresses that the actual use of a system is a key determinant of its usefulness by users, despite any hypothetical clauses prior to use… (also) students could not fully anticipate the added value of such initiatives before they actually use them” (Tselios et al, 2011, p. 232). Therefore, it is important for the researcher to be careful about making assumptions about student perception as well as student participation based on incomplete facts. Also, based on the research, it is evident that student questionnaires are most valuable and accurate concerning the effectiveness of blended learning only after students have been exposed to and have interacted in a blended learning environment.

Conclusion

This review has been an exercise to explore the problem of practice proposed in this action research study, which is: students do not receive equal educational opportunities in public education. The purpose of this study is to consider the literature that discusses the theories, historical perspectives, the implications of diversity and social justice, the rationale, perceptions and methodology for improving students’ achievement in courses where teachers introduce new and innovative ways of delivering material to their students, namely: blended learning. The research that was conducted in this action
research study sought to understand the effects of blended learning on student achievement.

History guides the educational practitioner to consider different theories and perspectives when implementing a blended learning environment in their classroom. Theorists such as John Dewey, George Counts, E.D. Hirsch, Franklin Bobbitt, and Ralph Tyler and their writings on essentialism, progressivism, learner centered ideology, social efficiency ideology, reconstructionist ideology, and scholar academic ideology were discussed to outline the underpinnings of the blended learning approach. The theorists and ideas that have resulted from their work guides teachers and researchers on best practices and methods of teaching children and have provided a solid footing on which blended learning environments can stand, if implemented correctly based on their expertise. A discussion of certain researchers and writers in the field of social justice and diversity were also considered in order to show that students come from different backgrounds and there is a need to acknowledge this when considering how to best educate all students in the classroom.

The current literature highlights multiple ways to effectively implement a blended learning environment into a classroom. This review of the literature has demonstrated that while some of the results of these experiments with this new modality have been successful, some have not. Both the successes and failures of each were discussed and were taken into consideration when this action research occurred so as to learn from them. Also considered from the current literature were all of the different ways in which blended learning was implemented in different environments. The use of technology and face-to-face instruction must be balanced and quality implementation plans must be in
place to achieve an effective blend. The review also takes into account students’ attitudes after taking part in a blended learning environment, being careful to take into account student perceptions of blended learning, especially after their experiences with it.

Blended learning has a simple definition but as the literature shows, it can yield effective results, both in student achievement and student perception of their experiences in learning.
CHAPTER 3
METHODOLOGY

Introduction

This chapter details the methodology employed to explore how the implementation of a blended learning educational environment impacts student achievement. An action research study was conducted with a mixed methods research design to work with a group of 10th grade Honors World History students to study the effects of this teaching style on student achievement. This research was planned and executed taking into account the warning by Béres, Magyar, and Turcsányi-Szabó (2012), that the methodology used in a blended learning environment is of utmost importance:

“Electronic learning and e-learning environments do not guarantee efficient learning by themselves. The role of the teacher as a guide cannot be neglected. But, even the blended learning combination doesn’t automatically provide success if the model is not based on sound methodological basis” (Béres, Magyar, & Turcsányi-Szabó, 2012, p. 20).

Purpose of the Study

Blended learning is a pedagogical approach for delivering information that has many implications. It gives students a different avenue to learn and it helps them reach higher levels of achievement, autonomy, personal growth, responsibility, and according
to Erdem (2014), “blended learning gives learners and teachers a potential environment to learn and teach more effectively” (p.200).

Blended learning, along with other instructional theories of teaching and learning like critical pedagogy, has been put under a microscope in American education. Welcomed to the educational stage in part by Paulo Friere’s work in impoverished communities in Brazil, the critical pedagogy movement in education is one that has met much criticism. However, “after several decades of existing on the educational fringe, it is safe to say that critical pedagogy has entered the mainstream in the United States” (Foley, Morris, Gounari, & Agostinone-Wilson, 2015, p. 110). Mark Halx (2014) describes critical pedagogy’s primary focus as one that “is to enlighten students… that an improved life circumstance is more than possible for them through education and their own actions” (p. 255).

Like critical pedagogy, blended learning works to help students realize their potential without having information delivered only directly from the teacher to the student. In a classroom utilizing the blended learning approach, the student is an active participant in working toward the acquisition of knowledge. Teachers and students share the responsibility of learning in this educational approach because the student is involved in discovering and discerning the meaning of information while teachers are facilitators and guides rather than the giver of information and meaning. In this study, critical pedagogy gives students a voice. Students are being introduced to content and are being asked to look at it critically, with an opportunity to come up with their own ideas based on their own experiences and view of the world. A key component of critical pedagogy is that the approach is an agent for social change; it gives students and teachers a way to
challenge the norms of other ways of educating and forging new paths to individualize and deepen learning no matter a student’s economic, social, or educational background. Social studies gives individuals an opportunity to be critical of the world around them, a vehicle for new ideas and a blended learning environment does the same by showing students what their capabilities are without having a teacher as the center of the learning guiding them every step of the way.

Tying school funding, teacher job security, and school solvency to the results of high stakes tests has caused the focus of schooling to be placed less on mastery of content and more on a student’s ability to regurgitate information. Julie Gorlewski (2012) set out to explore how educators might turn the table on high stakes testing and “expand the curriculum and enhance student learning” (p. 225) rather than allow it to be stifled by these tests. Gorlewski (2012) argues that “legislation that legitimizes testing as the central measure of learning undermines the ability of educational institutions to inspire excellence and ameliorate inequities” (p. 226). It is through teaching methodologies such as blended learning that an opportunity arises for teachers, schools, and school systems to make a shift away from a reliance on these high stakes tests and focus on the mastery of content in meaningful ways.

Mi Kim (2015) worked with a group of students and teachers who were using a project-based, self driven approach to learn Korean English language. Much like this study concerning blended learning, Kim’s study offered students some choice and an opportunity to approach the material in ways that they saw fit. In her experiment, Kim (2015) found that using this approach in a classroom setting “empowers students and gives them more opportunity for initiative and responsibility” (p. 91). Much like
Gorlewski (2012) who found that “students developed increased confidence and expertise,” (p. 235) Kim’s students’ opinions were varied, but they reported also having a sense of achievement. The project-based, self-driven successes of her study is of interest since it helps to prove that students, when given the opportunity, tend to thrive when there is a mixture of the student-led innovative approaches to curriculum.

**Statement of the Problem of Practice**

In the essentialist view, “the objective [of schooling] is to convey basic and general knowledge and skills to young people” (Elgstrom, 2011, p. 721). According to Elgstrom & Hellstenius (2011), the hallmark of the essentialist approach to curriculum dictates an experiential approach to subject material, with a teacher that is the giver of all information (p.721-722). Teachers are held accountable for the successes and failures of the students under their watch on state, district and school exams, so controlling the learning is not always a matter of choice, it is a fear of failure.

Promoted by researchers and educators such as William Bagley (1874-1946) and E.D. Hirsch (1928 -? ), the essentialist approach to curriculum is one that aims to “promote the intellectual growth of the individual (and) to educate the competent person for the benefit of humanity” (Schramm-Pate, n.d., p. 4). In this theory, knowledge should be derived from a “focus on essential skills and academic subjects, (a) mastery of concepts and principles of subject matter” (Schramm-Pate, n.d., p. 4). Contrasting the beliefs of John Dewey and the progressives approach to education, the essentialist theory works to place the teacher at the center of the learning in an educational setting and focus on students’ mastery of essential skills.
In discussing William Bagley’s ideas on democracy, Joseph Watras (2012) notes that

“Bagley complained that the academic standings of American students lagged behind that of students in other countries because teachers catered to students’ interests and refused to impart the discipline needed to master academic skills” (p. 168).

Based on my experience, American high school classrooms that are centered on the teacher have a very clear hierarchy of order and a step-by-step approach to learning that are products of Bagley’s belief. Teachers of classes such as these are typically ones who have many years to their credit and are accustomed to the traditional approach to teaching and learning. In discussions with students who are assigned to these courses and based on observations of these classes it is clear that students can perform well in them, but some students say that they find them boring and do not achieve to the levels they believe they could if given the opportunity. Creativity is sometimes stifled; student engagement is lacking and students do not gain the depth of knowledge that could be gained if given the chance to make a part of the learning their own.

In my high school and in my district, there are teachers who are diligently working to make a change toward a more progressive approach to curriculum because they understand that students respond well to what it offers. John Dewey’s research, experience, and writing in the field of progressivism are the standard bearer for the progressivism movement. The fear of change in schooling is not something new in American educational history because as Thomas Popkewitz (2011) discusses in his essay on the history of multiple types of curriculum, the movement to progressivism in
earlier reform movements as one that was seen as causing events that “violated the norms of civility” (p. 9). In contrast to the idea that the experience of the teacher should be the driving force and that he or she should be the bearer of all knowledge in the classroom, Popkewitz (2011) describes the goal of the progressive movement as one that aims to have “an inclusive community, and to produce able, virtuous individuals who gave America its destiny” (p.10).

The problem of practice for this dissertation in practice therefore is that in American schooling, the reliance on the essentialist view toward education has met a time when students are not responding well to what it offers. While educational theorists, such as John Dewey (1938) have proposed innovative ways of working to ensure a student centered approach, some teachers and schools across the country have been very slow to recognize the opportunities through these methods that they have to reach higher. Students and teachers alike have grown much more accustomed to the idea of technology being a focal point in their daily lives, so it begs the questioning of the logic in keeping it out of the classroom. Is there a way to effectively design a course around the use of technology, being careful to keep the teacher as an integral part of instruction and help students find success in an educational landscape that is focused on student testing data?

**Role of the Researcher**

Due to the nature of the study that was conducted, the researcher’s teaching is inextricably linked with all parts of the research. Since the researcher implemented a blended classroom environment for his students and studying the effects of this environment on their academic achievement, he was careful to understand that his
teaching can alter the results based on the methods chosen to use in the classroom. The researcher was vigilant in creating a true blended learning environment for his students to ensure that the results are valid.

Research Context

The school that is being used as a context for this study is a traditional public high school, grades 9-12, which is set in an affluent city on the coastline of a southeastern state. The school is rather large with approximately 1,000 students in each grade level, meaning that it serves a population of over 4,000 students. With this many students, there is a large faculty and staff population as well. In this school there are approximately 300 teachers and additional staff that fill administrative, clerical, support, and other roles. Of the faculty and professional staff in this school, 70% hold advanced degrees, at the masters level or higher. The population of the student body is approximately 82% White, 11% African-American, 3% Hispanic, 2% Asian and 2% other. There is a poverty rate of approximately 15% in the school, but when the size of the school is considered, in relative terms, this is a small number. The size of the school allows for a large course offering as well – there are over 250 different courses that are available to students including Advanced Placement, dual credit, honors, college preparatory, applied technology and exceptional education.

Students must receive 24 units of study in order to graduate from this institution. Seventeen of these units are described as ‘core units’ and must fit certain qualifications: 4 units of English/Language Arts, 4 units of Mathematics, 3 units of Science and 3 units of Social Studies. The three Social Studies units must include United States History and
Constiitution (1 unit), Economics (1/2 unit), United States Government (1/2 unit) and an Other Social Studies (1 unit). This school is an outlier in the district. Boasting the largest enrollment of high school students in the district as well as the state, the school has unique challenges.

There are approximately 105 students that will be taking part in this action research study. The students that will be participating will be enrolled in the researcher’s Honors World History courses for the entirety of the 2017-2018 school year. These students were chosen because of the role of the researcher as a teacher in a public school setting. The place of the research will be the classroom of the researcher. The classroom is inside the main building of the school on the second floor.

The researcher’s educational and personal experiences prior to taking a position at his current school has helped to shape his world view. His passion for justice and equality is fervent and is an avid supporter of the people, schools and communities who work to ensure that students feel included and not ostracized because of who they are, what they believe or their educational acumen.

**Research Design**

In his book, *Action Research: Improving Schools and Empowering Educators*, Craig A. Mertler (2014) describes a four-step process to plan for, act on, develop, and reflect about a topic in an action research study. It is through the categories and sub-categories of his design that the following will describe the process in which the design for this action research project was created. A description of the manner in which the plan will unfold during the action research process will also be discussed.
Planning

“Identifying and limiting the topic, gathering information, reviewing the related literature and developing a research plan” (Mertler, 2014, p. 36) are the four parts of the planning stage of an action research project according to Mertler. Prior to beginning an action research project one must take a step back to consider a range of issues or problems that may be occurring in their classroom or in schooling as a whole. Once an identification of the problem of practice occurred, there is more of a focus on the specifics of the issue, research to understand what others might have experienced with the topic and then the development of research plan.

Evolution of the research focus. When considering the direction in which this action research project would take, the experience of the researcher led him to begin working toward better understanding the effectiveness of having students be a part of their learning without completely taking the teacher out of the equation. According to the progressive theory, “the teacher must begin with the interests of the child and find ways to create meaningful learning experiences that connect with what is learned in school to the experiences of the child” (Pieratt, 2010, p. 58). Regardless of the level of complexity in the material, the educational capacity of the student or the circumstances the student finds themselves in, the researcher believed that the students knew their educational abilities better than him, and this begged the question: who was he to force them into something in which they would not find success with or comfort?

Much like George Betts and Jolene Kercher (1999) in their book *The Autonomous Learner Model: Optimizing Ability*, the researcher believed that the autonomous learner
would grow from a well-developed project or set of activities for the student to navigate and discover alone. These authors proposed, “as the needs of learners are being met, they will develop into autonomous learners with the abilities to be responsible for the development, implementation, and assessment of their own learning” (Betts, G. & Kercher, J., 1999, p. 5). A surface reading of their suppositions would lead the reader to think they meant to leave the student alone in their learning, when they were really describing a scenario where “the needs of learners are being met…” (Betts, G. & Kercher, J., 1999, p. 5) – this could mean a blended learning environment.

**Development of the research plan.** To develop a plan that works to answer the research question for this dissertation in practice, there were several considerations that were taken into account. In order to effectively answer the question, the study was designed in such a way so that at the completion of it, the answer should be apparent. The dependent variable for the quantitative piece of the research question is student achievement on assessments and surveys administered after the unit was taught using blended learning and the independent variable for the study is the blended learning teaching method, the method in which the material will be taught. The qualitative piece will explore the ways in which students respond to the blended learning methodology on a daily basis as the study is executed.

**Ethical Considerations.** “As with other aspects of the job of being a professional educator, ethical treatment of students and colleagues – as well as their respective data – must be a key component of designing (an) action research study” (Mertler, p. 106, 2014). Prior to beginning this action research project, a clear plan for the ethical treatment of the subjects and the data collected was laid out. It is of the utmost
importance that all participants in the study are participating voluntarily and that all parties are fully notified of each aspect of the project with which they will take part, this includes the school, school system, the students and their parents.

First, an assurance was made that the study design will bring no harm to any of the participants – academically, physically, emotionally, or psychologically. The study was submitted to the school’s administration for clearance and then to the school district’s institutional review board for final approval. When the approval was granted, an informed consent letter (Appendix A) was sent home for both the parents and the students who would be taking part in the research study to sign. This letter explained the research that would be conducted and asked for consent for their student to participate in the study as well as for the researcher to obtain and use the data that they produce for the research study. Since minors are participating in the study, their parents must agree – but permission from the minor is still required (Mertler, 2014). These parent and student assent letters were written in age-appropriate language and both parents and students were informed of the parameters of the project and asked if they were willing to participate. The participants, the collection of their data, the keeping of the data, and the anonymity of both was paramount. Regardless of the findings of the research, data was not altered or tampered with in any way in order to keep the findings of the research study pure and honest (Mertler, 2014).

**Acting**

The plan for the action research project that was implemented in this school is of a mixed methods design (Mertler, 2014). This portion of the action research took place
during a five-week period in the spring of 2018. A succinct timeline of implementation for the action research study is included in this dissertation in practice in Appendix C.

Data was collected prior to, during, and after the implementation of blended learning. The 10th grade students were participants in a unit entitled the *Post World War II Human Experience Unit* in their Honors World History course using a blended learning teaching method. This mixed method approach which includes a combination of direct instruction and a mixture of online activities, self-directed activities, and cooperative group work was carefully designed and research driven. This unit aligns with the Proposed 2020 South Carolina College- and- Career-Ready Social Studies Standards that the students will be required to master according to the South Carolina Department of Education. The specific standard that was addressed during this study is standard six concerning the Modern Age in world history. The standard says that students should demonstrate an understanding of the Modern Age from 1933 to present day. Although these standards are not officially in place and required for these students to learn, they are the proposed standards for this course of study and will most likely, with some minor adjustments, be in place by the time of the publication of this research. The reason that these standards were chosen to use in this study over the 2011 standards was due to the design of the Proposed 2020 Standards. I realized that in my own practice, I was beginning to teach linearly, relying on a story that I was telling to my students to deliver the same content year to year. I recognized that the Proposed 2020 Standards provided an opportunity to promote student inquiry through the content. These standards opened the door to the creation of the unit whereas the earlier standards did not allow for the same opportunity for my students.
The unit was designed so that 50% of the material was conveyed to the students in a classroom setting through direct instruction, worksheets, and other manipulatives. The other 50% of the material that was delivered to the students was done so in various electronic formats; through Google Classroom, and other mediums of electronic communication. The unit is designed to deliver information concerning a total of fifty-five elements, or pieces of content, to the students. Of these elements, twenty-three are delivered through direct, teacher led instruction and twenty-two are delivered through student led inquiry through applications in technology, cooperative learning, and projects. Each week of this five-week unit has a mixture of delivery methods for students with teacher directed taking a slight lead in the beginning weeks and balancing out at week three.

The topic of instruction for the study was called the *Post World War II Human Experience Unit*. Using the Proposed 2020 College- and Career-Ready Social Studies Standards, the unit was designed to encompass a five-week period. Certain considerations were given to the ways in which the content was to be delivered to the students. Face-to-face or distance instruction was chosen for certain content. The reason for this was a choice by the researcher in order to give opportunity for students’ learning styles to be met both through direct, face-to-face instruction as well as distance learning. In the first week, students were administered a formative assessment and a blended learning perceptions survey (Appendix D and B, respectfully). These two tools were used again at the end of the unit to gauge the effectiveness of the teaching style and the perceptions of this way of learning for this study. After these two pieces were completed, the unit was introduced by the researcher as students embarked on a carousel activity where they spent
time working collaboratively with other students in an inquiry based activity through technology with primary sources. Week two began with an introduction to certain topics by the teacher and then students’ began work with this information in an activity where they must kinesthetically teach their peers about a topic. Week two ended with a second teacher-led activity where students learn about topics that are more broad and overarching. Since week three is a mid-point for this unit, the week begins with a review of the material completed by the students in the previous two weeks and the students are quizzed. Once the quiz was complete, the teacher introduced a group project to the students that will encompass the next four days of class. Students worked collaboratively using primary and secondary sources to learn about and present about a major event dealing with the unit of study. For the project, students were presented with several genocides, or world atrocities and were asked to research and teach their classmates about them. Week four wrapped the project and presentations and at the end of the week, the teacher lead a time in class where the students debriefed and discussed overarching themes they saw among each of their classmates projects. Week five completed the unit with teacher led instruction concerning a range of topics that are required by the standard, but not yet studied by the students. This fifth week concluded with a teacher produced study guide, a review day and finally the same formative assessment and perceptions survey that were administered to the students at the beginning of the unit so as to gauge student learning during the unit and their opinions about the blended learning teaching method (respectfully).
Data Collection Methods

Qualitative data are narrative, and quantitative data are numerical. According to Mertler, qualitative data “may appear in the form of interview transcripts, observational notes, journal entries, or transcriptions of audio or videotapes or as existing documents” (Mertler, 2014, p. 126). Mertler describes quantitative data as data that can be “counted, calculated, tallied and rated… (as well as) ratings of one’s feelings, attitudes interests or perceptions on some sort of numerical scale” (Mertler, 2014, p. 137). The use of both of these types of data can be beneficial in some types of research; it is the combination of these types of data that the researcher finds especially useful in this action research. Since it is through action research that “pre-service and in-service teachers reflect critically, inquire into their own pedagogical practices and make changes that benefit themselves, their students, and their institutions” (Castro Garces. & Granada, 2016, p.40) it is imperative that a full accounting of whatever the teacher is studying be considered. This ‘full’ accounting in the action research that will be conducted demands there be both quantitative and qualitative data collected.

In this study, the focus is placed on the level of academic achievement of students when a blended classroom environment is implemented for their social science course. While reporting was done predominately on the numerical, or quantitative data – test scores and rating scales that describe attitude toward or feelings about the mode of learning – a collection of written, observational notes – a teacher/researcher journal, or qualitative data was also amassed. In order to effectively complete an action research project concerning a classroom scenario that changes the structure of a learning environment – collecting test scores and a response from a numerical scale does not paint
a complete picture of the success or failure of the mode of learning. A discerning teacher whose ultimate goal is to ensure the success of his students’ cares not only about the numerical data, he should consistently look for ways in which to improve his practice. If there is data that shows student perception to be positive but testing data to show a negative effect, there might be room for more study. Collecting both types of data might show that it was the teaching that was ineffective offering an opportunity to complete the action research again at a later time, just differently. Therefore, for the purposes of this action research plan, collecting quantitative data is simply not enough – both types of data were compiled.

Mertler comments that “we are constantly observing and taking note of the world around us… furthermore, as teachers we are constantly observing our students” (Mertler, 2014, p. 127). While the researcher understands that time constraints may preclude some from collecting both types of data during a research project such as this, there are no issues, negative aspects, or weaknesses in this action plan that kept the researcher from collecting the aforementioned data.

**Pre-Assessment**

Students were given formal assessments concerning the material taught using blended-learning techniques (Appendix D). This assessment was an evaluation concerning the amount of knowledge they have on the information to be presented in the unit. The assessment was designed in order to ensure that each of the fifty-five elements were accounted for and each question was paired with the standard number and indicator number with which it is associated. The test consisted of 40 questions. These questions
included several types: 25 multiple-choice questions, 10 matching questions, four short answer questions, and one essay question. The answers for both the multiple-choice and matching questions were recorded by students on Zip-Grade documents and scored using Zip Grade’s application. An example Zip Grade document is included as Appendix E. The short answer and essay question were graded based on the accuracy of the answer provided by the student. The test was administered at the beginning of the unit, giving students 40 of the 45 minutes allotted for the class period to complete it. It was after the completion of the test that the students were asked to take the first survey. The test is valid because it was written by the researcher and reviewed, edited, and critiqued by three other Honors World History teachers at the researcher’s school who collectively have over two decades of experience with the material as well as in teaching the specific course. The assessment questions were written by the researcher, who chose the type of question for the individual elements based on the amount of time dedicated to the study of the element as well as the importance of the element to the unit as a whole. The grades were recorded and held for comparison purposes.

Pre-Survey

The pre-survey included 14 questions and was administered to the students via Google Forms on the class-set of Chrome Books. The survey addressed student perception of blended learning and asked questions regarding any previous experience they may or may not have had with the teaching methodology. The students were asked about the comfort they feel with the use of technology, if they have participated in blended learning assignments previously, if they have participated in blended learning
classes previously, and their perceptions of what they feel they have learned in these environments if they have.

**Post-Assessment**

At the end of this unit, post-assessment data was collected from the group to evaluate academic achievement for the group of students. The post-assessment is the same tool that was used for the pre-assessment. The assessment was administered at the end of the unit, giving students forty of the forty-five minutes allotted for the class period to complete it. The post-assessment is a test designed by the researcher concerning the unit entitled *Post-WWII Human Experience Unit* gauging the students’ knowledge on standard five from the proposed 2020 College- and- Career-Ready South Carolina Social Studies Standards. Students’ scores on this post-assessment, when compared with their scores on the pre-assessment are intended to show the effects of a blended learning environment on students in a social studies classroom.

**Post-Student Survey**

After the completion of the unit taught using a blended learning technique, a second student perception survey (Appendix B) was administered. This survey was the same survey that was administered at the beginning of the research process so as to be able to accurately gauge how and if student perception of the two teaching techniques changed during the study.
Data Analysis

A comparison of pre-assessment and post-assessment data was completed to gauge growth among the students from the beginning of the unit to the end. Then, based on information obtained from students about perception and learning styles, before as well as at the end of the blended unit through surveys, insight was gained on any possible different external factors that may have led to the results. Specifically information concerning learning style surveys, attitude surveys, and access to technology was compared with the positive or negative achievement that the students realized on their assessments. Then, a comparison was made concerning individual and group achievement on previous assessments to the results of the blended learning assessments to judge the effectiveness of the blended learning teaching and learning method. These instruments that were used to gauge student perception as well as academic achievement are trustworthy because careful consideration about the questions used will be made in their design.

If the results showed that student achievement increased based on the implementation of the blended learning environment then data will be used to justify changing other existing units to a blended learning environment as well. If the study showed there is no gain in academic achievement, other modes of delivery for content may be tested for the students in the classroom.

**Statistical Analysis.** In the action research project that was conducted, both descriptive and inferential statistics were measured. A summary of student scores from pre- and post-assessments and surveys was developed. In addition, descriptive statistics
such as measures of central tendencies and measures of dispersion were studied. According to Mertler (2014), the central tendencies, measurements of dispersion and relationships will indicate what is typical or standard about a group of scores, what is different within a group of scores and what each of these scores relationships are to each other.

Along with descriptive statistics, there was a study of the inferential statistics that came from the study. Since this is a teacher led study and it deals specifically with the researcher’s classroom, subject area, and students, considerations about the likelihood of a repeat in either the success or failure of the research design is possible. Since inferential statistics “determine how likely a given statistical result is for an entire population based on a smaller subset or sample of the population” (Mertler, 2014, p.174) it would be reckless for the researcher not to consider this information. Since there was no ‘control group,’ the paired samples t-test is the statistical test that was used; it measures the same group at two time points (prior to the implementation of blended learning compared to after implementation of a blended learning).

**Developing**

In this third stage of the Action Research design, work will be done to ensure that the results of this study be put to use in the researcher’s classroom. An action research project is only useful to a teacher or his students if there are changes that take place due to the findings of the research (Mertler, 2014). If the findings indicated that there are no positive results in student achievement on their assessments due to the blended learning teaching approach, then the methodology will either be altered or discarded. The design
of the research project will be considered to ensure that there were no flaws in the approach. If there are findings that indicate that there were flaws in the research a redesigned project may be in order. If no flaws are found and the findings can be verified, then as the reflective teacher an alteration in teaching style to match this new approach to the curriculum so as to fit the needs of the students in the classroom. Also, if it is found that there are no positive effects based on the teaching style implemented and student achievement on assessments, then the teacher should work to alter other assignments or units to fit the blended learning method of teaching.

**Reflecting**

Professional reflection is an essential component of action planning. Indeed, the intent of an action research project or study is that there be action taken as a result of the findings. It is in this reflection stage in which the teacher/researcher makes plans that respond to the research he or she conducted. It is only through reflection that a teacher has the ability to make effective changes in their practice in the classroom.

Mertler (2014) describes two main ways that teachers should engage in reflective practice as a part of their action planning. The first way is for teachers to “reflect on intended as well as unintended outcomes of the study for the purpose of planning future professional development” (Mertler, 2014, p. 220). He is pointing out is that not only should the practitioner give attention to the intent of his or her study, but also they should pay attention to the things that were not anticipated. The second way teachers should engage in reflection is that they “should also reflect on the action research study itself, focusing primarily on the methodology employed” (Mertler, 2014, p.220). It is clear that
the author’s intent is to ensure that the researcher considers all facets of the way his or her study is completed as well as the results of it. If there are things that can or should be improved for the next study, it is through this type of reflection that they are found.

In a study conducted in the United Kingdom, Colucci-Gray, Das, Gray, Robinson and Spratt (2013) studied teachers’ perceptions of action research studies that they conducted in their own classrooms. According to Colucci-Gray, et al. (2013), “the teacher action-researchers felt that they became more skilled at reflecting on and evaluating the consequences of their practice for children” (p. 142) as their individual studies went on. That, “for the (teachers), reflection was not a new idea; most identified themselves as ‘reflective practitioners’ from the outset. However, by engaging with action-research they developed more systematic approaches” (Colucci-Gray et al., 2013, p. 142).

Summary and Conclusion

Student success is paramount in the world of education. In the essentialist view of the curriculum, a teacher is the bearer and deliverer of all information and in a progressive view; students are more involved in the acquisition of knowledge. With the constant use of technology in the day-to-day lives of students, it is incumbent upon teachers and other educational professionals to work to find ways to meet them where they are, and one such way is the implementation of a blended learning environment. Therefore, with high stakes testing being an integral part of a students’ schooling experience, the research question and action research study was formed: How does a blended learning environment affect student achievement?
Using Mertler’s (2014) framework for the implementation of an action research study, the researcher will plan, act, develop and reflect through this process using this question to help himself and others understand if a blended learning environment helps students reach higher levels of achievement on assessment.
CHAPTER 4

FINDINGS AND IMPLICATIONS

Introduction

The purpose of Chapter Four: Findings and Implications is to present the data that was collected in a five-week action research study conducted in four Honors World History classes for the dissertation *Blended Learning and its Effect on Student Achievement: An Action Research Study*.

Findings of the Study

Data Interpretation

Both quantitative and qualitative data were collected over the period of the study in the spring of 2018. There were 105 student participants in the study that was conducted at a large suburban high school in the coastal area of South Carolina. These students were enrolled in four sections of the Honors Modern World History course offered as an elective by the South Carolina Department of Education and the school in which they attend. This study was conducted through a unit entitled the *Post World War II Human Experience* using standard six from the proposed 2020 College- and- Career-Ready Standards. This study was conducted only after both the parents of the participants and the participants themselves offered their permission to have their survey and test data
used in the research. Only one student and his parents chose to not allow the use of their scores to be included in this research.

**Quantitative Data**

**Student Assessments**

The first piece of quantitative data collected was through a pre-test and a post-test assessing content knowledge. This pre-test assessment, which included 40 items, was conducted on the first day of the five-week unit plan and the post-test assessment, which was the same 40 items as the pre-assessment, was conducted on the last day of the five-week plan. Students’ names were not used in this research due to privacy concerns, and only the teacher knows the labeling of scores concerning students’ names. These scores were kept confidential on a computer, locked with a password.

Each student in each of the classes presented the blended learning unit improved their score from the pre-test to the post-test. The average score of the pre-test for all students was 54.23 and the average score of the post-test for all students was 81.07. The highest score out of 100 points on the pre-test was an 84 and the lowest score on the pre-test out of 100 points was a 24, which was achieved by two students (Student A and Student B). The highest score out of 100 points on the post-test was a 97, achieved by two students and the lowest score on the post-test out of 100 points was a 58 (Student C). Student A and student B, who received the lowest scores on the pre-test, showed great growth from the pre-test to the post-test: Student A earned a 24 on the pre-test but earned a 92 on the post-test; Student B also earned a 24 on the pre-test, but then earned a 72 on
the post-test. Student C, who earned the lowest score on the post-test, earned a 38 on the pre-test, also showing great growth.

A paired samples t-test was performed to determine if the post-test assessment scores were statistically significant from the pre-test assessment scores. Table 4.1 shows the results of the t-test for the entire group of student participants that includes all items from the assessment. The researcher set the p value at .000 – using this as an exploratory measure. The scores are considered significant if the p value is greater than .000. Table 4.2, Table 4.3, Table 4.4 and Table 4.5 show the results of the t-test that was performed upon the data derived from each individual class that took part in this research study. The sample sizes are smaller than are typical in a paired samples t-test, and the strength of the treatment may not be able to be measured in these instances. This paired samples t-test indicates that there was growth in knowledge from the pre-assessment to the post-assessment for the entirety of the group that was involved in the action research project. As is shown in Table 4.2, 4.3, 4.4, and 4.5 students in each of the four classes individually showed growth from their pre-test scores to their post-test scores. Each of these individual tables also illustrates to what extent each class grew from their pre-test scores to their post-test scores by showing the class mean from the pre-test to the post-test assessment. Class A, represented by Table 4.2, showed the smallest amount of growth, while Class C, represented by Table 4.3, shows that this class had the largest amount of growth.
Table 4.1

*Sample t-test calculation for Pre-test/Post-test for all students*

<table>
<thead>
<tr>
<th></th>
<th>Variable 1 (Pre-test: all items)</th>
<th>Variable 2 (Post-test: all items)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>54.23</td>
<td>81.07</td>
</tr>
<tr>
<td>Observations</td>
<td>104</td>
<td>104</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>12.853</td>
<td>8.656</td>
</tr>
<tr>
<td>Standard Error Mean</td>
<td>.849</td>
<td>1.260</td>
</tr>
<tr>
<td>t Stat</td>
<td>24.013</td>
<td></td>
</tr>
</tbody>
</table>

*p* = .000

Table 4.2

*Sample t-test calculation for Pre-test/Post-test for class A students*

<table>
<thead>
<tr>
<th></th>
<th>Variable 1 (Pre-test: all items)</th>
<th>Variable 2 (Post-test: all items)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>53.44</td>
<td>82.04</td>
</tr>
<tr>
<td>Observations</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>13.824</td>
<td>9.158</td>
</tr>
<tr>
<td>Standard Error Mean</td>
<td>2.765</td>
<td>1.832</td>
</tr>
<tr>
<td>t Stat</td>
<td>10.820</td>
<td></td>
</tr>
</tbody>
</table>

*p* = .000
Table 4.3

Sample t-test calculation for Pre-test/Post-test for class B students

<table>
<thead>
<tr>
<th></th>
<th>Variable 1 (Pre-test: all items)</th>
<th>Variable 2 (Post-test: all items)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>52.78</td>
<td>82.44</td>
</tr>
<tr>
<td>Observations</td>
<td>27</td>
<td>27</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>13.721</td>
<td>6.047</td>
</tr>
<tr>
<td>Standard Error Mean</td>
<td>2.641</td>
<td>1.164</td>
</tr>
<tr>
<td>t Stat</td>
<td>14.802</td>
<td></td>
</tr>
</tbody>
</table>

p=.000

Table 4.4

Sample t-test calculation for Pre-test/Post-test for class C students

<table>
<thead>
<tr>
<th></th>
<th>Variable 1 (Pre-test: all items)</th>
<th>Variable 2 (Post-test: all items)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>57.48</td>
<td>79.72</td>
</tr>
<tr>
<td>Observations</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>9.583</td>
<td>9.321</td>
</tr>
<tr>
<td>Standard Error Mean</td>
<td>1.917</td>
<td>1.864</td>
</tr>
<tr>
<td>t Stat</td>
<td></td>
<td>12.266</td>
</tr>
</tbody>
</table>

p=.000
Table 4.5

*Sample t-test calculation for Pre-test/Post-test for class D students*

<table>
<thead>
<tr>
<th></th>
<th>Variable 1 (Pre-test)</th>
<th>Variable 2 (Post-test)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>53.41</td>
<td>80.04</td>
</tr>
<tr>
<td>Observations</td>
<td>27</td>
<td>27</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>13.83</td>
<td>9.84</td>
</tr>
<tr>
<td>Standard Error Mean</td>
<td>2.662</td>
<td>1.894</td>
</tr>
<tr>
<td>t Stat</td>
<td></td>
<td>12.684</td>
</tr>
</tbody>
</table>

\[p=.000\]

**Student Surveys**

The second piece of quantitative data collected from the student participants was student responses to a pre-unit and post-unit survey. The survey (Appendix B) was conducted anonymously through Google Forms and consisted of 14 questions asking students a range of questions. This survey included questions that sought to measure students’ understanding of the definition of blended learning as a teaching methodology, questions that gauged their perception of said blended learning methodology as a way of teaching, how and if they believed that the blended learning methodology had a positive or negative impact on their learning, and questions concerning their attitude toward their teachers and classmates both before and after the implementation of the blended learning methodology. Tables 4.6 through 4.13 present the results from four of the responses in both the pre-unit and the post-unit survey. The totality of the survey responses can be found in Appendix F.
Table 4.6 shows the responses from a question that used a Likert scale that asked students about their overall perception of blended learning. This gave them the opportunity to respond on a scale from 1 to 5, with 1 being ‘I really don’t like it at all’ and 5 being, ‘I really like it.’ Of the 94 students who responded to the question in the survey, 93% (87 of the 94 students surveyed) chose the middle to high option to say that they initially ‘really like it.’ This same question was asked on a post-unit survey, as shown in Table 4.7 and 97% (87 of the 89 students that were surveyed) chose the same three options.

Table 4.8 shows the results of the pre-unit survey question that asked students to respond about their opinion on the effectiveness of blended learning prompting them to answer ‘yes’ or ‘no’. The question was: ‘From what you know of blended learning, in your opinion, is this method effective for learning?’ The pre-unit survey showed that 87% (82 of the 94 respondents) answered that blended learning was an effective form of teaching/learning and 13% (12 of the 94 respondents) did not believe it to be effective. Table 4.9 shows the results of the same question, concerning the effectiveness of this methodology on learning was asked in the post-unit survey. 89% (78 of the 88 students questioned) responded that they did believe blended learning to be an effective method for learning, with 11% (10 of the 88 students questioned) saying that they did not in the post-unit survey.

Table 4.10 and Table 4.11 show the students’ responses to the question from the survey that asked if they agreed that blended learning improved their interaction with their teacher. The results from the pre-unit survey, as shown in Table 4.10, are that 46% (44 of the 95 respondents) say that they either agree or strongly agree that their
interaction with their teacher has improved, while 9% (9 of 95 students surveyed) either disagreed or strongly disagreed that interaction has improved. The intent of this question was to better understand student perception of their interaction with their teacher prior to the implementation of a blended learning environment compared with the perception of their interaction with the teacher during the blended learning unit. The goal was to understand if they interacted more or less with their teacher than before the unit was introduced. The post-unit survey, Table 4.11, shows that 38% (33 of 88 participants) agree or strongly agree that their interaction with the teacher has improved, with 16% (14 of 88 participants) saying that they disagree or strongly disagree that the interaction with the teacher has improved.

Finally, Table 4.12 and Table 4.13 show the results of a question on the student perception survey that asked students if they agreed or disagreed that the blended learning unit improved their interaction with their fellow classmates. In the pre-unit survey, Table 4.12, 45% (43 of 95 participants) either agreed or strongly agreed that their interaction with their peers improved while 13% (12 of 95 participants) either disagreed or strongly disagreed. The intent of this question was to better understand student perception of their interaction with other students prior to the implementation of a blended learning environment compared with the perception of their interaction with other students during the blended learning unit. The goal was to understand if they interacted more or less with their peers than before the unit was introduced. Table 4.13, the post-unit survey, shows that 58% (52 of 89 students surveyed) agree or strongly agree that blended learning has improved their interaction with their peers with 3% (3 of 89
respondents) reporting that they disagree or strongly disagree that the blended learning unit improved their interaction with their peers.

Table 4.6

*What is your overall perception of blended learning? Pre-unit survey (94 responses)*

<table>
<thead>
<tr>
<th>Perception</th>
<th>Pre-unit Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>I really don't think it's a good thing.</td>
<td>1</td>
</tr>
<tr>
<td>I really like it.</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>34</td>
</tr>
<tr>
<td>I really don't think it's a good thing.</td>
<td>36</td>
</tr>
<tr>
<td>I really like it.</td>
<td>19</td>
</tr>
<tr>
<td>Total</td>
<td>55</td>
</tr>
</tbody>
</table>

Table 4.7

*What is your overall perception of blended learning? Post-unit survey (89 responses)*

<table>
<thead>
<tr>
<th>Perception</th>
<th>Post-unit Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>I really don't think it's a good thing.</td>
<td>1</td>
</tr>
<tr>
<td>I really like it.</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>2</td>
</tr>
<tr>
<td>I really don't think it's a good thing.</td>
<td>23</td>
</tr>
<tr>
<td>I really like it.</td>
<td>44</td>
</tr>
<tr>
<td>Total</td>
<td>67</td>
</tr>
<tr>
<td>I really don't think it's a good thing.</td>
<td>20</td>
</tr>
<tr>
<td>I really like it.</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
</tr>
</tbody>
</table>
Table 4.8

*From what you know of blended learning, in your opinion, is this method effective for learning? Pre-unit survey (94 responses)*

![Pie chart with 87% Yes and 13% No]

Table 4.9

*From what you know of blended learning, in your opinion, is this method effective for learning? Post-unit survey (88 responses)*

![Pie chart with 89% Yes and 11% No]
Table 4.10

Blended learning has improved my interaction with my teacher. Pre-unit survey (95 responses)

Table 4.11

Blended learning has improved my interaction with my teacher. Post-unit survey (88 responses)
Table 4.12

*Blended learning has improved my interaction with my classmates. Pre-unit survey (95 responses)*

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>32</td>
<td>40</td>
<td>10</td>
<td>2</td>
</tr>
</tbody>
</table>

Table 4.13

*Blended learning has improved my interaction with my classmates. Post-unit survey (89 responses)*

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>17</td>
<td>35</td>
<td>34</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>
Tables 4.6, 4.7, 4.8, 4.9, 4.10, 4.11, 4.12, and 4.13 show the results of a pre-unit and post-unit survey administered to students to gauge their perceptions surrounding blended learning as a teaching/learning method. The survey questions and possible responses were written in student-friendly language so students could easily understand the meaning of the question as well as answer them to the best of their abilities in their individual responses.

**Qualitative Data**

The qualitative data collected in this study was done through a researcher’s journal kept by the teacher/researcher. At the end of each day of the study the researcher penned a brief entry as a log to make notes about the activities completed by the classes in the study. The teacher/researcher made note of how the activity went that day, any surprises that occurred in its implementation, any changes or adjustments that had to be made in the plan, any problems that were encountered, and/or any comments about student behavior or actions surrounding the activity. This journal was kept in the teacher/researcher’s desk for the totality of the five-week plan and notes were only made in the journal after the completion of each of the four classes involved in the study.

Analysis of the research journal indicated two overarching themes related to scheduling opportunities and challenges and student reactions to the change in instructional practice with the incorporation of blended learning.

Overall, the research plan was executed with very few alterations; however, there were some scheduling changes that impacted implementation. There were several notes about scheduling shifts being made by the school at the last minute, but the researcher
noted that making concessions outside the classroom rather than altering the unit
overcame them. There were two instances noted specifically in the journal concerning
scheduling that could have become issues to the integrity of the research according to the
researcher. One of these events occurred when the researcher was assigned to administer
a state-mandated test. The researcher says in the journal:

“...I was able to solve this issue before it became a bigger problem – I went to the
training (for the test) and when it was over, I made my way up to speak to the
administrator in charge. I explained that I was testing my dissertation and she
made the change” (Turpin, 2018, p.4).

The second instance was one that is discussed in the journal at length due to the potential
issue it could have caused to the study, but again was handled by the researcher. The
entry explains that according to the school’s master schedule there were to be two days in
which class periods for each class would be longer than a normal class period. At the last
minute an email was sent changing this schedule and flipping it to a different week,
causing a major shift in the order in which the researcher would be able to have content
delivered to his students. The researcher had already begun the study and these days,
with this extended schedule, were imperative for the successful foundation of the study.
The researcher “had no choice but to make the schedule work, so I did” (Turpin, 2018,
p.1). The journal describes how the researcher altered the schedule in order to ensure the
completion of the exercise/activity and the researcher noted that turned out to be one of
the most “empowering” activities (Turpin, 2018, p.1) of the entire study for the students.
The researcher’s journal also outlined one other important piece – the perceived student response toward the study. The students’ reaction to the content was one of the things that was consistently mentioned in the journal; they “talked about how they had never heard of some of these things [the specific events in history] before – they didn’t realize this even happened” (Turpin, 2018, p.2). The other piece of the student response to the research was their reaction to the blended learning methodology. At the beginning of the research students were excited to try a new approach, but also nervous about their abilities to complete individual tasks on their own. The researcher made several notes in the journal remarking that individual activities were successful or that students seemed to ‘get it’ as the study progressed. Students began to speak highly of how the class was being run as the research went on and some students who normally were not engaged were making great efforts in their work. The students took more individual initiative and also began to use their classmates as tools to assist them if they were confused or needed clarification. There were also success stories that the researcher made note of in the journal, one in particular was a student whose parent approached the researcher to tell about her student’s reaction to the unit. The researcher noted that at an event outside of school a parent approached him and after a few minutes of speaking commented that their child was watching a video at home from that day’s class. After some investigation, the researcher discovered that this student had taken the initiative to continue watching a Holocaust Survivor’s story that was assigned earlier in the week during class. Students were only required to watch a 15 minute portion of the video but this parent expressed to the teacher how engaged the student was even after watching the video in its entirety – over an hour and a half (Turpin, 2018).
Data Analysis and Reflection

Through the analysis of both the quantitative data (pre-test and post-test assessment results and pre-unit and post-unit survey responses) and the qualitative data (the researcher’s journal) several themes became apparent to the researcher. These themes are 1) Student Attitude Toward Blended Learning, 2) Effect of Blended Learning on Classroom Interaction, and 3) Student Growth and Achievement on Assessment.

Student attitude toward blended learning changed from the beginning of the unit to the end of the unit. As shown by the results of the pre-unit and post-unit surveys as well as the researcher journal entries about how students’ opinions seemed to shift from beginning to end, students’ attitude toward the teaching method improved. The effect of blended learning on classroom interaction, a second theme that was recognized by the researcher, as seen by the results of the pre- and post-unit surveys also changed. The students said that while their interaction with their teachers did not improve, their interaction with their classmates improved greatly – this data was justified through the researcher’s journal through notation about comments students made about the methodology at the beginning of the unit and as the unit progressed. Finally, a third theme, as seen by results on the pre-test and post-test assessment and the researcher’s journal – noting student engagement and interest, students’ content knowledge grew tremendously among all student participants in the research study.

Answering the Research Question

According to both the quantitative and qualitative data collected in this five-week study on the effect of blended learning on student achievement, the researcher’s
overarching understanding is that students’ achievement improves due to the implementation of a blended learning environment in the classroom. The results from student assessments and student surveys support this finding. Students’ demonstrated statistically significant improvements from the pre- to the post-assessment and survey responses.
CHAPTER 5

SUMMARY, ACTION PLAN, AND CONCLUSION

Introduction

This chapter will discuss the elements of the developing and reflecting phases of the research cycle. The chapter will also include a summary of the action research study, the perceived implications of the research findings, the role and limitations of the researcher, as well as the key questions for the study’s findings. Suggestions for future research that includes a participatory action plan and a conclusion

Problem of Practice. The action research completed through this study stems from a problem of practice surrounding student achievement and working toward best practices for it to be improved. It is when a teacher decides to make moves toward increasing the quality of the educational experience in their classroom, they may be met with roadblocks, so they must understand how to best meet these obstacles with a positive, can-do attitude. The teacher must always strive to accomplish one thing: to teach in the way that fits the best interest of the students – whatever way that might be – to allow students as much success as possible. The essentialist approach to the current classroom environment is one that is becoming obsolete and students subjected to this type of learning are not reaching their potential. The question then is posed to the teacher: ‘what methods can be used to make this learning meaningful, engaging and
beneficial to the students’ future? One answer could be blended learning. According to one researcher, the “use of blended learning technology could provide students with the flexibility to learn at their own pace and (help strengthen) other outside responsibilities” (Edrem, 2014, p. 203).

**Purpose Statement and Research Question.** Blended learning is a mode of instruction for teachers that could offer an alternative to the traditional classroom. Blended learning is best defined as the “combination of face-to-face instruction as well as distance learning” (Kazu & Demirkol, 2014, p.79). The implementation of this delivery method in the classroom is one that is relatively simple to put into practice for a teacher who is comfortable with technology, and one who is knowledgeable about his or her subject matter. The purpose of this research is to study the implementation of a blended learning teaching style in hopes of understanding its potential benefits to student achievement.

To study the effects of blended learning and its effect on student achievement, an action research project was conducted with student participants enrolled in an Honors World History class at a large suburban high school in a coastal city in South Carolina to find the answer to the following question:

How does the implementation of blended learning in a world history course affect student achievement?

**Summary of the Study**

**Study Overview.** The study was conducted throughout a span of five weeks using the Proposed 2020 College- and Career- Ready Social Studies Standards. The title of the unit was *The Post World War II Human Experience*. The unit was structured to
ensure that fifty percent of the unit was completed through traditional teacher to student content delivery and the remaining half was through blended means. Students were given a formative pre-assessment to gauge their knowledge of the material prior to the unit as well as a perception survey concerning the use of a blended learning methodology in the classroom. As the unit progressed, the researcher kept a journal of the activities and observations apparent throughout the duration of the study. At the completion of the study, the students were asked to take a summative assessment, which was identical to the formative assessment on the material as well as a second perception survey concerning their perceptions of blended learning at the conclusion of the unit. After collecting the data, the researcher compiled and compared the results of the tests for each student participant and then compared the results of the perception surveys from the beginning of the unit to the end.

**Summary of Research Study Findings.** The literature offers that there is much to be gained by offering students flexibility in their learning. Further, that in this learning, the teacher does not have to be a direct overseer – rather, through adequate preparation and design of learning opportunities offering students choice and distance, they have an opportunity to learn and grow (Lewis, 2012). Teachers should be an intermediary between content and their students, designing meaningful experiences for them so they may learn, (Schiro, 2013) becoming ‘tricksters’ for their students – able to see the larger picture and doing what needs to be done for their students to find success (Jeffries, 2013). According to Boyle (2005), the design of a blended learning experience helps to ensure its effectiveness for students’ achievement and also work to help ensure their positive perception of the methodology being used. Further, Kazu and Demirkol
(2014) found that when compared to a traditional environment, a blended environment that combines student choice, technology, and face-to-face instruction, student achievement increases – the results of this action research support the findings of both of these studies.

Based on the quantitative data collected through the formative and summative assessments, overall student achievement increased. Based on the qualitative data collected through both the pre- and post-perception surveys as well as notations in the researcher’s journal, student perception of blended learning as a methodology for the classroom showed growth in achievement and a positive perception of the learning method for students.

**Key Questions for Study Findings.** Some questions that emerged based on the findings of the study are: a) How can effective blended learning be adequately implemented in other social studies classrooms to ensure student success? And if the methodology can be implemented in these classrooms, can it be as useful a teaching methodology for courses other than the social studies? b) Are there pathways for teachers to be trained to implement such a teaching method in their schools, districts, or states? c) Can students be brought into the design process for the creation of the blended learning model for their classrooms to help ensure more student engagement and further development of the implications of the teaching method?

**Role of the Researcher and Limitations.** The role of the researcher was crucial in the collecting and analyzing of data, the reflection concerning the data, and also in the design of possible research moving forward. The researcher designed the unit plan that was used during the action research study. Through a review of the literature the
researcher developed an understanding of the blended learning methodology and applied it to an area of content that would be completed over a five-week timeframe. The unit included a pre- and post-test, a student perception survey, and a bevy of activities designed around the blended learning teaching model. The researcher also worked to ensure that a daily log or journal was completed throughout the entirety of the study.

Since the action research study was completed in the researcher’s classroom with the researcher’s students, the researcher was an active participant in the study. Therefore, the researcher played a dual role in the study - both as an insider participating in the study and an outsider reporting the results of both the qualitative and quantitative results.

The researcher used a proposed content that became available through a proposed set of standards for the State of South Carolina: the Proposed 2020 College- and- Career-Ready Social Studies Standards. The researcher had a unique perspective concerning the content that was used in this action research since this researcher was a part of the team that helped write these proposed standards. The researcher had insight into what was intended for each standard and indicator that was tested in this research giving a perspective that may not have been as easily understood by someone who was not on the writing team. The researcher was also faced with a lack of supports from outside the researcher’s own creations. Since these standards had never been implemented in a classroom prior to this action research, the researcher had no choice but to create each activity from scratch with very little assistance from outside entities.

During and after the action research study, there were several challenges that were faced by the researcher. First, the unit was scheduled to take place at the end of the school year - the last five full weeks of class prior to summer vacation. While the
researcher worked to ensure that each participant had ample time to complete each activity and each activity was given the time that was planned for it, there were times that the schedule did not allow for this. Due to state testing, school events, or other scheduling conflicts, the researcher had to be flexible and ensure that the integrity of the research was being taken care of along with the needs of the school. Even though this was a challenge, the researcher was confident that the action research plan was carried out in a way that ensured valid results with very little iteration from the initial plan of action.

Secondly, due to his work with the writing team, the researcher worked to ensure that the questions asked on the test followed the spirit of the content and skill that was required of the proposed standards. Unfortunately, as time progressed, the researcher recognized that there were questions that could have been worded differently in order to ensure that both the content and the skill were adequately tested. While this does nothing to change the results of the study concerning the blended learning methodology, it is a limitation that should be considered if future research is conducted using these standards as a backdrop.

**Action Plan.** Upon reflection of the results of this action research study, the researcher suggests that an action plan based on the research findings be enacted in the following manner. For the researcher, a second study should be done over a period of time that is much longer than the time frame encompassed in this study. A year-long effort could be made on the part of the researcher to ensure that these results are not a one-off and the blended learning methodology is in fact a worthwhile venture for other teachers, schools, and districts.

After the completion of the year-long action research study completed in the researcher’s classroom, the researcher suggests an action plan that follows. First, further
study should be done in other social studies classes to ensure the validity of the findings in the study with other teachers designing and implementing the tasks for students. Teachers should be trained to fully implement a blended learning environment by the researcher so as to ensure there is a full understanding of the methodology and the intended goals for the study. This study should be completed in other honors level classes, but extended to college preparatory classes to further strengthen the validity of the findings. The offering for this type of teaching methodology should also be expanded to encompass other content areas in the social studies.

Second, assuming similar results of the extended social studies research, the methodology should be tested in other content areas. A school should enlist teachers who are capable and willing to attempt the creation and execution of a blended learning model in their own content to ensure that these results transfer from social studies to other areas of study. These teachers could work with the social studies department cohort of blended learning teachers to implement this methodology in their classes. These social studies teachers could serve as support to these other teachers in assisting them with ideas and offering other developmental supports along the way. Third, after the study is completed in both the social studies and the outside content areas with similar results of the original study, consideration should be given to a school-wide implementation plan. Administrators, curriculum leaders, and professional development personnel should be brought to the table and presented with the findings of each of the three previous studies and their findings. At this point, a plan should be put in motion to involve the school in a similar model for implementation of the blended learning methodology. The school’s teachers would then be trained by the social studies teachers as well as the other content
area teachers to ensure understanding and then they would, like the social studies teachers
did before, work to support each other in the development and implementation of units
for the blended learning method. Lastly, the school could serve as a model for success in
student achievement through blended learning at a district level providing schools with
the training and support they used to implement this methodology in their own school.

Suggestions for Future Research

Future research should be conducted to consider the longitudinal effectiveness of
this action research study. A study should be completed where student assessment data
from non-blended learning teaching methods are compared with student assessment data
from the blended learning teaching method. With an attempt to keep all outside factors
as common as possible, a consideration of these two different types of assessments could
be greatly beneficial in the effort to infuse this type of learning into classrooms.

Additional future research should be conducted on the conduciveness of the
Proposed 2020 South Carolina College- and Career-Ready Social Studies Standards for
heightened student engagement and inquiry. Through this study it was clear that growth
in achievement occurred due to the blended learning environment that was introduced in
the classroom using these standards in the *Post World War II Human Experience Unit*;
what might the findings be if the blended learning methodology was implemented
through a different unit? Since it is possible that this research could have implications on
policy that is enacted around these Proposed Standards, research should be conducted to
further the steps made through this study. These standards are not just about content
acquisition, rather an intentional focus on an alignment of content with skills necessary to
enhance relevance of the information and deepen student understanding. If blended
learning were taken out of the study, would these standards provide a platform for enhanced student achievement standing alone?

Conclusion

The goal of this action research study was to test the effectiveness of a blended learning teaching methodology on student achievement and to gauge their perspectives on the method. Quantitative and qualitative data were collected through pre- and post-tests, student perception surveys, and a researcher’s journal. A paired sample $t$ test was used to analyze the pre- and post-test data comparing students’ scores individually as well as class-by-class to understand the effectiveness of the methodology. The findings of this study conclude that the use of a blended learning methodology in a social studies classroom works to both increase student achievement and create a more positive attitude among students concerning this method of learning.
REFERENCES


NASA, (n.d.). Retrieved from https://nasaecclips.arc.nasa.gov/teachertoolbox/the5e


Schramm-Pate, S. (n.d.). Lecture on Basic Theories of Curriculum. Personal Collection of Susan Schramm-Pate, University of South Carolina, Columbia South Carolina.


Dear Students, Parents, and Guardians,

My name is Christopher Turpin and I am your child’s Honors World History teacher for the 2017-2018 school year. I am enrolled in the Doctor of Education (Ed.D.) in Curriculum and Instruction program at the University of South Carolina and am currently completing my dissertation research for the program.

The University of South Carolina utilizes an action research model for their Ed.D. program, which means that I choose an educational approach that would help student achievement and perform a research study on that topic. My topic is Blended Learning in a Social Studies Classroom. This year, your child will participate in traditional assessments, but also have a focus on technology and blended assignments that will help their critical thinking and application of learning. In addition, participation in this research will better prepare your child for the class final exam and future courses that utilize technology and a blended format in the future.

You were selected to participate in this study because you are in my Honors World History class for the 2017-2018 school year. There is no penalty for not participating, and you may withdraw from the study at any time without penalty. The District and the School are neither sponsoring nor conducting this research. Any physical, psychological, legal, or other risks are small; this will be my eighth year using blended learning in my classroom, so I understand how to positively implement the strategies. The only person with access to personally identifiable data will be me, and information related to student scores and/or grades will be presented so that no one can identify students. If a student is mentioned, I will use a pseudonym so that the student(s) cannot be identified. The results of this study will be published in my dissertation, which will be available on the internet. If any parent/guardian wishes to see materials before providing their consent, I would be happy to meet, discuss the study, and provide the materials.

Quantitative Data collection for this study is the following:

- Student grades and/or test scores from prior Social Studies courses
- Student scores from the 2018 Honors World History Class and class final exam

This information will be analyzed for basic statistical information and to determine the effect of Blended Learning on student achievement.

For qualitative data collection, students will complete surveys three times a semester to measure their understanding and overall attitude toward Blended Learning.

Students would benefit from this research by having a better understanding of the information in Honors World History and be better prepared to pass the exams administered at the end of class.

If there are any questions, comments, or concerns about this study, please contact me at my e-mail.
Sincerely,

Christopher Turpin

Teacher

Honors World History & Honors Current Events

______________________________________________________________________________

Student: I, ________________________, agree to participate in this study on Blended Learning in Honors World History. There is no penalty for not participating and I understand that I may opt out of the study at any time without penalty. The school district is neither sponsoring nor conducting this research.

Signature: _________________________________ Date: ______________

Parent/Guardian: The student named above has my permission to participate in this research study.

Signature: _________________________________ Date: ______________

Parent/Guardian: I do NOT wish for my student to participate.

Signature: _________________________________ Date: ______________
APPENDIX B - STUDENT SURVEY

Student Survey:
1. What is your overall perception of blended learning?
2. Do you want blended learning to be implemented throughout your school?
3. Have you ever participated in a blended learning assignment?
4. Have you ever been enrolled in a classroom that utilized blended learning?
5. From what you know of blended learning, in your opinion, is this method effective for learning?
6. From what you know of blended learning, in your opinion, is this method more or less effective for your learning than the traditional approach?
7. How comfortable are you with using technology?
8. How comfortable are you with using technology to complete assignments for class?
9. How many hours per week do you use technology? (cell phone, computer, internet, etc)
10. Blended learning has encouraged me to learn. (ranking from strongly disagree to strongly agree)
11. Blended learning has improved my interaction with my teacher. (ranking from strongly disagree to strongly agree)
12. Blended learning has deepened my understanding of the subject being taught. (ranking from strongly disagree to strongly agree)
13. Blended learning has deepened my interest in the subject being taught. (ranking from strongly disagree to strongly agree)
14. Blended learning has improved my interaction with my classmates. (ranking from strongly disagree to strongly agree)
APPENDIX C - UNIT PLAN

Blended Learning Unit Lesson Plan

Proposed 2020 College- and- Career-Ready Standard

**Standard 6:**

Demonstrate an understanding of the Modern Age from 1939 to present day.

**Enduring Understanding:**

The Modern World is a mosaic that combines economics, geography, politics, religion, and social aspects. Decolonization movements and the interconnectedness of world communities allowed for the rise of diverging political ideologies and led individual countries to grapple with personal liberty and political rights.

**Indicators - The student will:**

6.1 – Explain the political, economic, and cultural implications of the Cold War using a comparative analysis.

6.2 – Analyze significant developments resulting from post-war decolonization in Asia and Africa in the creation of the new nations during the period 1945-1975.

6.3 – Summarize the interconnections between the United States and the world community through major cultural, economic, and political changes using a historical narrative.

6.4 – Beginning with the aftermath of the Holocaust, examine significant developments in international efforts to recognize and protect human rights in the period 1945 – present.

6.5 – Contextualize the major economic, geographical, political, religious, and social factors and their impact on nations during the period 1989 – present.

6.6 – Utilize a variety of primary and secondary sources to analyze multiple perspectives of international events.
Overview:
- 5-Week Unit
- Based on the Proposed 2020 South Carolina College and Career Ready Social Studies Standards
- Blue Type: Direct Instruction (Teacher Guided or Teacher Centered = 12 days)
- Black Type: Indirect Instruction (Student Inquiry, Self-Guided, or Technology Driven = 12 days)
- Topics for each day are listed directly under the date and are italicized and underlined.

Schedule:
Opt-Out/Permission Forms Sent to parents/students:
Monday – March 26, 2018

Data Collection Timeframe:
Monday - April 16, 2018 – Thursday - May 18, 2018

Week 1:

Monday: April 16
- Formative Assessment
- Perceptions Survey

Tuesday: April 17 (Standard 6.4)
- Post-WWII Human Experience Unit
  o Introduction using a PowerPoint Presentation
  o Reviewing the atrocities of WWII and the world that it left behind

Wednesday: April 18 (Full Block Skinny – 1,3,5,7) (Standard 6.4, 6.6)
- Human Rights Violations
  o Carousel Instruction
o Stations will be set up in the classroom that will introduce students to four different worldwide events: Apartheid, Armenian Genocide and the Holocaust.

o Students will watch videos uploaded to Google Classroom, read a primary source concerning each event and complete notes packets on these events individually.

o Students will rotate once every 25 minutes to change stations – but before rotating, they must complete an electronic ‘ticket-out-the-door’ with two questions:
  - 1. What was something that you did not know before completing this mini-lesson?
  - 2. What was something that you were surprised about after completing this mini-lesson?

o Homework for the evening will be the completion of a 3-circle Venn Diagram to take the information they learned from the activity describing the likenesses and differences between the events.

**Thursday: April 19 (Full Block Skinny – 2,4,6,8) (Standard 6.4, 6.6)**

- *Human Rights Violations*
  o *Carousel Instruction*
  
  o Stations will be set up in the classroom that will introduce students to four different worldwide events: Apartheid, Armenian Genocide and the Holocaust.

  o Students will watch videos uploaded to Google Classroom, read a primary source concerning each event and complete notes packets on these events individually.

  o Students will rotate once every 25 minutes to change stations – but before rotating, they must complete an electronic ‘ticket-out-the-door’ with two questions:
    - 1. What was something that you did not know before completing this mini-lesson?
2. What was something that you were surprised about after completing this mini-lesson?

- Homework for the evening will be the completion of a 3-circle Venn Diagram to take the information they learned from the activity describing the likenesses and differences between the events.

**Friday: April 20 (Standard 6.4)**

- **Human Rights Violations**
  - Students will choose a partner and discuss their Venn Diagrams comparing their work – discussing the similarities and differences between them (10 minutes)
  - At the end of the partner work, students will come back to the large group and the teacher will complete a whole-group Venn together – discussing the similarities and differences between each of the events.
  - Once the Venn is completed, the teacher will lead a class discussion answering any questions that the students may have concerning the four events.

**Week 2:**

**Monday: April 23 (Standard 6.3, 6.5, 6.6)**

- **United Nations (UN), North Atlantic Treaty Organization (NATO), the European Union (EU) and the Organization of American States (OAS).**
  - The teacher will lead a class discussion with PowerPoint describing each entity, their history, and their function.
  - The lecture will also describe the United States interaction with these entities and their involvement with them – as well as consider the roles of other smaller countries and their influences on these organizations.

**Tuesday: April 24 (Advisement) (Standard 6.4)**

- **Universal Declaration of Human Rights**
Students will be partnered when entering the classroom and each will take a Chrome Book. They will then be given a slip of paper with a number written on it (1-30) and directed to a document on their Google Classroom page with instructions and a link.

- The instructions will direct them that they should go to the site provided and with their partner read the Right that is guaranteed by the Universal Declaration of Human Rights that corresponds to the number they were given.
- Each group in the class will keep their number secret.
- They will be given 15 minutes to come up with a plan for how to act out this right or do a demonstration for the class to guess which ‘right’ they are describing.
- The class will be allowed to keep their computers/devices up to use as a ‘rights-bank’ to have options to guess from when their classmates are acting out their right.

Once completed, the remaining rights will be described and discussed by the teacher using the same site and examples of world events that these may speak to.

**Ticket-out-the-door:**

- Students will be asked to list the rights that were violated by the aggressors throughout the three events that we studied the week prior.

**Homework:**

- Students should create note-cards with each of these human rights listed on them so that they can study for their quiz the following week and test at the end of the unit.

**Wednesday: April 25 (Standard 6.2)**

- Decolonization Vacuum
o On Google Classroom, students will be provided a list of Imperial nations and the countries that were colonized by them.
  ▪ Students will be provided a world map and asked to create a map, labeling these countries as imperialized nations based on a key they create.

o Students will then be directed to watch a video that will explain how decolonization happened causing a shaky world structure with weak governments.

Thursday: April 26 (Standard 6.1)
- **Dual Hegemonic System**
  o PowerPoint lecture discussing the rise of the USSR and the US as dual superpowers.
    ▪ How their rise happened and how their power caused a tense world-scene allowing for the divide in Germany and the subsequent Cold War mentality

Friday: April 27 (Standard 6.1)
- **The Domino Theory**
  o Demonstration activity with dominos… describing how the name came to be and how the theory was thought to play out concerning Communism

- **Politics and World Events of the 1960s:**
  o Korea, the space race, Bay of Pigs, Cuban Missile Crisis and the set-up for Vietnam.

Week 3:

Monday: April 30
- **Review Day**
  o 20 minutes of review with a partner: the Universal Declaration of Human Rights flash cards
Tuesday: May 1
- **Quiz**
  - Topics to Include:
    - Universal Declaration of Human Rights
    - Human Rights Violations
    - UN, NATO, EU, OAS
    - Decolonization Vacuum
    - Dual Hegemonic System
    - Domino Theory
    - The Politics of the 1960s

Wednesday: May 2 *(Fire Drill) (Standard 6.4, 6.6)*
- **Modern Human Rights Violations Project**
  - Introduction to Project
    - Executive Summary
      - A short essay that combines the history of the event and the violations of human rights as well as the lessons that could be learned.
    - Map of the area
      - Including population, GDP/how they make their money, what type of government they have, and their geography
      - 1 slide (minimum)
    - Resources: CIA World Fact Book
    - History of the event…
      - How did it get started, who was on which side, why did it begin where it did, how many people did it involve, what were the defining pieces of the event?
• 2-3 slides (minimum)
• Resources: Human Rights Watch website
  ▪ Universal Declaration of Human Rights Violations
    • List them, their definition and how you justify that they were violated.
    • 1-2 slides (minimum)
    • Resources: Link from Google Classroom
  ▪ Lessons Learned for the World
    • A minimum of 3 lessons that one should walk away with after learning about the events surrounding your topic.
    • 1 slide (minimum)

**Thursday: May 3 (Standard 6.4, 6.6)**
- *Modern Human Rights Violations Project*
  o Research Day
  ▪ Executive Summary
    • A short essay that combines the history of the event and the violations of human rights as well as the lessons that could be learned.
  ▪ Map of the area
    • Including population, GDP/how they make their money, what type of government they have, and their geography
    • 1 slide (minimum)
    • Resources: CIA World Fact Book
  ▪ History of the event…
    • How did it get started, who was on which side, why did it begin where it did, how many people did it involve, what were the defining pieces of the event?
    • 2-3 slides (minimum)
- Resources: Human Rights Watch website
  - Universal Declaration of Human Rights Violations
    - List them, their definition and how you justify that they were violated.
    - 1-2 slides (minimum)
    - Resources: Link from Google Classroom
  - Lessons Learned for the World
    - A minimum of 3 lessons that one should walk away with after learning about the events surrounding your topic.
    - 1 slide (minimum)

**Friday: May 4 (Standard 6.4, 6.6)**

- *Modern Human Rights Violations Project*
  - Paper copy of the Map and Research Document 1 DUE
    - Executive Summary
      - A short essay that combines the history of the event and the violations of human rights as well as the lessons that could be learned.
    - Map of the area
      - Including population, GDP/how they make their money, what type of government they have, and their geography
      - 1 slide (minimum)
      - Resources: CIA World Fact Book
    - History of the event…
      - How did it get started, who was on which side, why did it begin where it did, how many people did it involve, what were the defining pieces of the event?
      - 2-3 slides (minimum)
      - Resources: Human Rights Watch website
- Universal Declaration of Human Rights Violations
  - List them, their definition and how you justify that they were violated.
  - 1-2 slides (minimum)
  - Resources: Link from Google Classroom
- Lessons Learned for the World
  - A minimum of 3 lessons that one should walk away with after learning about the events surrounding your topic.
  - 1 slide (minimum)

**Week 4:**

**Monday: May 7 (Standard 6.4, 6.6)**

- *Modern Human Rights Violations Project*
  - Research Document 2 DUE
- Executive Summary
  - A short essay that combines the history of the event and the violations of human rights as well as the lessons that could be learned.
- Map of the area
  - Including population, GDP/how they make their money, what type of government they have, and their geography
  - 1 slide (minimum)
  - Resources: CIA World Fact Book
- History of the event…
  - How did it get started, who was on which side, why did it begin where it did, how many people did it involve, what were the defining pieces of the event?
  - 2-3 slides (minimum)
• Resources: Human Rights Watch website
  ▪ Universal Declaration of Human Rights Violations
    • List them, their definition and how you justify that they were violated.
    • 1-2 slides (minimum)
    • Resources: Link from Google Classroom
  ▪ Lessons Learned for the World
    • A minimum of 3 lessons that one should walk away with after learning about the events surrounding your topic.
    • 1 slide (minimum)

**Tuesday: May 8 (Standards 6.4, 6.6)**

- *Modern Human Rights Violations Project*
  
  o Executive Summary DUE
  
    ▪ Executive Summary
      • A short essay that combines the history of the event and the violations of human rights as well as the lessons that could be learned.
    ▪ Map of the area
      • Including population, GDP/how they make their money, what type of government they have, and their geography
      • 1 slide (minimum)
      • Resources: CIA World Fact Book
    ▪ History of the event…
      • How did it get started, who was on which side, why did it begin where it did, how many people did it involve, what were the defining pieces of the event?
      • 2-3 slides (minimum)
      • Resources: Human Rights Watch website
- Universal Declaration of Human Rights Violations
  - List them, their definition and how you justify that they were violated.
  - 1-2 slides (minimum)
  - Resources: Link from Google Classroom
- Lessons Learned for the World
  - A minimum of 3 lessons that one should walk away with after learning about the events surrounding your topic.
  - 1 slide (minimum)

**Wednesday: May 9 (Standards 6.4, 6.6)**
- *Modern Human Rights Violations Project*
  - Project Presentation Day

**Thursday: May 10 (Standards 6.4, 6.6)**
- *Modern Human Rights Violations Project*
  - Project Presentation Day

**Friday: May 11 (Standards 6.4, 6.6)**
- *Modern Human Rights Violations Project*
  - Project Presentation Day
- Debrief Day

**Week 5:**

**Monday: May 14 (Standard 6.3)**
- *The Impact and Involvement of the United States*
  - PowerPoint instruction about the events involving the United States in Modern World History
  - How or did the US intervene in the Human Rights Violations of the last century?
- The events that pulled the US into greater involvement in World Affairs
  - September 11, 2001
  - Al Qaeda
  - The War on Terror
  - The War in Iraq
  - Islamic State of Iraq and Iran (ISIS)
  - Modern Day North Korea

**Tuesday: May 15 (Standard 6.3)**
- *The Impact and Involvement of the United States*
  - PowerPoint instruction about the events involving the United States in Modern World History
    - How or did the US intervene in the Human Rights Violations of the last century?
    - The events that pulled the US into greater involvement in World Affairs
      - September 11, 2001
      - Al Qaeda
      - The War on Terror
      - The War in Iraq
      - Islamic State of Iraq and Iran (ISIS)
      - Modern Day North Korea

**Wednesday: May 16 (Standard 6)**
- *Post WWII Human Experience Unit*
  - Study Guide

**Thursday: May 17 (Standard 6)**
- *Post WWII Human Experience Unit*
  - Review Day
Friday: May 18 (Standard 6)
- Formative Assessment
- Perceptions Survey
APPENDIX D - UNIT TEST

Matching: Choose the best answer.
(Each question is worth 2.35 points – answer on your Zip Grade)

___ 1. Cuba
   a. an industrialized, capitalist country depended on
   b. global organization that brings together member
___ 2. North Korea
   b. a communist country that is north of the 38th
___ 3. The United Nations
   c. a global organization that brings together member
___ 4. The European Union
   d. countries that banded together in order to compete
___ 5. North Atlantic Treaty Organization
   e. countries that are working toward industrializing
___ 6. Organization of American States
   f. countries that are the least developed and are
___ 7. Universal Declaration of Human Rights
   bc. a military alliance between European and North
___ 8. Core Country
   d. a military alliance between European and North
___ 9. Semi-periphery Country
   ad. implemented in 1948 after the end of WWII and
___ 10. Periphery Country
   learning the atrocities of the Holocaust.
   ac. "to fulfill its regional obligations under the Charter
   of the UN" is one of the reasons this group
   formed.
   ab. a communist country that was at the center of
   Cold War tensions between the US and USSR
   ae. countries that are the least developed and are
doctors proportionately poorer than other
   countries worldwide
   bc. a military alliance between European and North
   American countries founded after WWII.

Multiple Choice: Choose the best answer.
(Each question is worth 2.35 points – answer on your Zip Grade)

___ 11. A theory prominent from the 1950s to the 1980s that said if one country in a
   region falls to the influence of communism, the surrounding countries would also fall is
called:
   a. the theory of supply and demand
   b. the domino theory
   c. cognitive dissonance theory
   d. attribution theory
12. The events of __________ were the catalyst for the United States to begin what is called the War on Terror globally.
   a. September 11, 2001
   b. July 4, 1776
   c. March 15, 1999
   d. January 27, 1785

For Questions 13 – 15: Based on your knowledge of world events, choose the best answer to describe the following quotes provided.

13. To which formerly imprisoned world leader is this quote attributed and of which event is he speaking?

   “Real leaders must be ready to sacrifice all for the freedom of their people”
   “No one is born hating another person because of the color of his skin, or his background, or his religion. People must learn to hate, and if they can learn to hate, they can be taught to love, for love comes more naturally to the human heart than its opposite.”
   a. Adolf Hitler, the Holocaust
   b. Winston Churchill, World War II
   c. Nelson Mandela, the Apartheid
   d. Benjamin Netanyahu, the creation of Israel

14. In her book, After Auschwitz, Eva Schloss is credited with the quote below. Of which event in world history is she speaking?

   “A few months ago I finished speaking, and looked down at a class of schoolchildren. A Somali girl with dark eyes hesitantly put her hand up and asked, ‘Do you think it will happen again?’ I can’t answer that but maybe you can. Will it? I hope not.” — Eva Schloss
   a. the Holocaust
   b. Apartheid
   c. the Armenian Genocide
   d. the Argentinian Dirty War

15. The following quote concerns the events surrounding the Armenian Genocide. Why does the person quoted believe what they do?

   “Concealing or denying evil is like allowing a wound to keep bleeding without bandaging it”: Pope Francis
   a. ... because in certain parts of the world, there is a belief that the Armenian Genocide didn’t happen.
   b. ... because Pope Francis is Catholic and the Armenians don’t share the same beliefs.
   c. ... because the Pope is a pacifist and does not think that remembering bad things in the past helps prevent them in the future.
   d. ... because the Armenians wish the world would forget that anything ever happened.

16. An unintended consequence of the tensions between the USSR and the United States during the Cold War was the ______________.
a. Arms Race
b. Marathon Race
c. Disarmament Race
d. Space Race

___ 17. An intended consequence of the tensions between the USSR and the United States during the Cold War was the _____________.
   a. Arms Race
   b. Marathon Race
c. Disarmament Race
d. Space Race

___ 18. The official reason for the United States involvement in the Vietnam War was to “retaliate and to promote the maintenance of international peace and security in Southeast Asia.” This language was used in the _____________.
   a. The Vietnam War Proclamation
   b. The Domino Theory
c. The Gulf of Tonkin Resolution
d. The Treaty of Versailles

___ 19. Through the use of peaceful protest, ____________ led India to break free from the oppressive powers of the United Kingdom and reestablish their independence.
   a. Nelson Mandela
   b. Mahatma Gandhi
c. John F. Kennedy
d. Che Guevara

___ 20. The Industrial Revolution led to a need for core and semi-periphery countries to imperialize periphery countries and use them for their raw materials – what caused these imperialized or periphery countries to go to war with each other?
   a. When World War I started, the core and semi-periphery countries that were the imperial powers required their imperialized periphery countries to fight along side them.
b. When World War I was over, the periphery countries tried to gain power from each other so they fought among themselves.
c. When World War II began and the policies of Adolf Hitler were put in place, periphery countries did not have a choice except to fight.
d. When World War II ended, the core countries were left so barren that they had to fight again over the scarce resources that the land provided.

For Questions 21 – 23, use the following map.
Which core country listed below imperialized the sections marked with A, B, and C above?

___ 21. France
___ 22. The United Kingdom
___ 23. Belgium

For Questions 24 – 28: Using your knowledge of the Universal Declaration of Human Rights – decide which right is being violated by each of the following scenario’s below.

___ 24. A person is arrested and imprisoned for 15 years with no notification of what he or she did wrong.
   a. We are all equal before the law
   b. The right to a nationality
   c. No unfair detention
   d. Freedom of thought

___ 25. A person is kept in a room for a period of time. While this person is in this room they are beaten and hurt in numerous ways by someone or something.
   a. The right to a trial
   b. The right to no torture
   c. The right to not be discriminated against
   d. The right to privacy

___ 26. A person is not permitted to go from one place to another in his or her own country.
   a. No slavery
   b. Freedom to move
   c. You have rights wherever you go
   d. The right to education

___ 27. A person is denied his or her ability to hang out with their friends in peace but is forced to hang out with different people, joining their group against his or her will.
a. A Fair and free world  
b. Freedom expression  
c. The right to public assembly  
d. Marriage and family

28. A person is told what to think or how to believe.  
a. Freedom of thought  
b. The right to democracy  
c. The right to own your own things  
d. Social security

29. ______ is an acronym for a group that sprang up in the vacuum left by the faltering Iraqi Army.  
a. Al Qaeda  
b. OAR  
c. ISIS  
d. DMZ

30. In 2003, the United States invaded Iraq as a part of the Global War on Terror – their reason being that they believed Iraq and their leader were in possession of __________.  
a. more oil than they needed.  
b. weapons of mass destruction.  
c. more power than they should have had.  
d. something that belonged to the US.

31. When the British decolonized Pakistan in 1948, what was created for a group of disenfranchised people?  
a. Gaza Strip  
b. The West Bank  
c. Sinai  
d. Israel

32. The __________ was built by the government of East Berlin and was a perfect representation of the __________ that separated the democratic western countries and communist eastern countries.  
a. Berlin Wall, Iron Curtain  
b. Iron Curtain, Berlin Wall  
c. Iron Curtain, Great Wall  
d. Great Wall, Iron Curtain

33. The current day leader of the Democratic People’s Republic of Korea is __________.  
a. Ronald Reagan  
b. Osama bin Laden  
c. Kim Jong Un  
d. Winston Churchill

34. Birthplace of Al Qaeda, home of Osama bin Laden, and the first country the US invaded in the War on Terror.  
a. The United States
35. Which Department of the United States Federal Government was created after the events of 9/11?
   a. Department of Defense
   b. Department of Homeland Security
   c. Department of State
   d. Department of the Interior

**Short Answer:**
(Each question is **worth 3 points** – answer on back of your Zip Grade)

36. Using your knowledge of the tensions between the United States and the USSR, describe what the following political cartoon is intended to mean. (Be sure to include as many details as possible!)

![Cartoon credit: Leslie Gilbert Illingworth.]

37. Compare and contrast one of the following pairings:
   - Holocaust and Armenian Genocide
   - Armenian Genocide and Apartheid
   - Apartheid and Holocaust
   - Armenian Genocide and Holocaust

38. How did the end of WWII lead to the weakening of so many countries throughout the world?

39. Should every country throughout the world be required to sign on to a promise to uphold the Universal Declaration of Human Rights as laid out by the United Nations?

**Essay:**
(Your answer is **worth 5 points** – answer on back of your Zip Grade)
40. Choose an event DIFFERENT FROM YOUR OWN from the Human Rights Violations Project and describe its background and what happened during the event. Be sure to also include how the event was resolved, if it was resolved. (Rwanda, Darfur, Cambodia, Balkans, Argentinian Dirty War, Syria)
APPENDIX E - ZIP GRADE FORM
## APPENDIX F - SURVEY RESULTS

### PRE-SURVEY RESULTS

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Blended learning has improved my interaction with my classmates.
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