University of South Carolina
Scholar Commons

Theses and Dissertations

2018

The Play's The Thing: Engaging 6th Grade Social Studies Students Through Movement

Karen Clinkert Paggi
University of South Carolina

Follow this and additional works at: https://scholarcommons.sc.edu/etd

 Part of the Curriculum and Instruction Commons

Recommended Citation

Paggi, K. C.(2018). *The Play's The Thing: Engaging 6th Grade Social Studies Students Through Movement.* (Doctoral dissertation). Retrieved from https://scholarcommons.sc.edu/etd/4909

This Open Access Dissertation is brought to you by Scholar Commons. It has been accepted for inclusion in Theses and Dissertations by an authorized administrator of Scholar Commons. For more information, please contact digres@mailbox.sc.edu.

THE PLAY'S THE THING:
ENGAGING 6TH GRADE SOCIAL STUDIES STUDENTS THROUGH MOVEMENT

By

Karen Clinkert Paggi

Bachelor of Arts
University of Wisconsin – Madison, 1993

Master of Education
Southern Wesleyan University, 2014

Submitted in Partial Fulfillment of the Requirements

For the Degree of Doctor of Education in

Curriculum and Instruction

College of Education

University of South Carolina

2018

Accepted by:

Todd Lilly, Major Professor

Yasha Becton, Committee Member

Jeff Eargle, Committee Member

Joe Flora, Committee Member

Cheryl L. Addy, Vice Provost and Dean of the Graduate School

© Copyright by Karen Clinkert Paggi, 2018
All Rights Reserved.

DEDICATION

This dissertation is dedicated to all the students I have had the honor of teaching. You have taught me more about education than any textbook.

ACKNOWLEDGEMENTS

To Dr. Todd Lilly, without whom I would not have finished this act in my drama. I cannot adequately express my gratitude for your knowledge, confidence, and kindness. To Dr. Catherine Compton Lilly, thank you for your expertise and guidance. Both of you are intellectual forces in the education field.

I would also like to acknowledge my committee members, Dr. Yasha Becton, Dr. Jeff Eargle, and Dr. Joe Flora. Your time, patience, and support helped me convey my research as I hoped I would.

To my parents, Donald and Rosemary Clinkert, whose faith, support, and sacrificial love have inspired me to teach children and have afforded me the opportunity to pursue this journey. To my siblings and best friends, Donna, Paul, and Mary. No one else in the world knows me like you three do. To my husband, Sherman. It amazes me how long you have held me up and held down the fort. Your ongoing support gave me traction when my confidence was low. To my beautiful boy, Luke. God surely did bless me. Thank you for being patient with me these past years. Our walks, bicycle rides, and prayers are the best times in my life.

ABSTRACT

This paper is a description of a proposed action research study driven by a problem of practice. The problem for this action research is that the teacher-researcher's sixth-grade social studies students lack critical thinking skills. Critical thinkers are engaged and learners who analyze complex issues and challenges within society. The teacher-researcher observed her students performing well on standardized benchmarks that rely on recalling facts, while simultaneously struggling to analyze explicit and implicit information from primary and secondary sources in order to make relevant and logical conclusions. After observing sedentary teaching practices in her classroom, the teacher-researcher began to review a pragmatic theoretical framework and various research studies that discuss a relationship between kinesthetic learning and critical thinking skills. Ultimately, a research question emerged: In what ways do kinesthetic learning strategies such as embodied movement or drama affect student engagement and critical thinking skills in a sixth-grade social studies class? The research will involve two sample classes in order to enlarge the sample size with approximately twenty-two and twenty-eight sixth-grade social studies students respectively. A mixed methods design will incorporate a presurvey, field notes, two pretests-posttests, a Likert type survey, and large group interviews, all of which will focus on the effects of kinesthetic learning on students' engagement and critical thinking skills. The researcher will implement a six-week instructional intervention consisting of frequent, subject relevant kinesthetic activities such as charades, improvisation, and role-playing. The action research design follows

Mertler's (2014) model, which includes the planning stage with an identified problem of practice, a literature review, and a research plan. In the acting stage, the researcher will collect data from a pre-project survey, two pretests and posttests, field notes, a Likert scale survey and large group interviews to determine students' engagement and opinions regarding kinesthetic learning. Grounded coding theory will help interpret information and identify themes that emerge from the data and descriptive analyses will assist in communicating the study's results. During the developing stage, there will be collaboration with stakeholders on an action plan with future procedures based on the action research findings. The reflecting stage will consist of an overall reflection of the project, where results will be shared with students, colleagues, and administrators.
Keywords: action research, critical thinking skills, kinesthetic learning.

TABLE OF CONTENTS

CHAPTER 1

INTRODUCTION

Educators strive to help students grow into engaged and critical thinking citizens. In this study, critical thinking skills followed Bloom's revised taxonomy (Anderson & Krathwhol, 2001) that includes the cognitive domains of applying, analyzing and evaluating. The domain of applying uses presentations and simulations to convey learned information in an authentic context. Analytical thinking breaks a concept into parts and finds the relationship between the parts and the relationship between the parts and the larger concept. Evaluating allows for judgment based on certain conditions. Creating reorganizes elements in a new way to create a new product.

Sixth-grade social studies students learn about world history from earliest man to European exploration (South Carolina Department of Education, 2011). Students have regularly worked in cooperative groups, interacted with advanced technologies, and created portfolios within their notebooks (e.g., art projects and reflective journals). Despite these various activities, students were engaging the lower two levels of the taxonomy: remembering and understanding. During class discussions and written work, students were encouraged to predict outcomes or analyze historical characters' motives. Unfortunately, most students fell silent perhaps because they became accustomed to receiving a script to memorize rather than knowledge to interpret. The lowest skill within the domain is remembering, a level that uses memory to recall information.

Understanding includes summarizing and comparing (Anderson & Krathwhol, 2001).

When I first entered the teaching field, I envisioned my students having fun in class. Fun meant active, managed chaos with students smiling, laughing, working independently and collaboratively while being oblivious to the cliques that were firmly established outside my classroom. I certainly did not enter the profession seeking to transform inquisitive children into machines. The pressure of pacing guides, evaluations, uniform lesson plans, and standardized tests however, made me a machine. Every day became a day closer to a high stakes test that would judge my students' knowledge and my competency. Every day was a day to check off the calendar. I viewed my students as an accountant views an unbalanced budget. Ultimately, I compromised my vision of physically active and engaged students for sedentary students who tolerated a test preparation pedagogy in which I taught fragmented facts to choose or disregard in a test setting (McNeil, 2000).

The name, interactive notebook, implies engagement. The concept of an interactive notebook invites students to create portfolios that incorporate what they learn with their individuality in the form of art and journals. I felt the pressure of what high stakes test results revealed to my employer about my worth as an educator and I came to believe the only way my students would earn exemplary scores on such tests was to drill them with facts. As a result, the interactive notebooks became a convenient place for my students to record facts that they needed to remember in order to make acceptable scores on standardized tests.

Traditional worksheets glued into a composition notebook did not reflect creativity (Appendix A). Potentially more creative outlets such as the assigned journals

or drawings did not reflect the enjoyable creativity that I believed sixth-graders would produce. Reflective journals became rushed (Appendix B). It became evident that one dimensional, stationary assignments produced one-dimensional punch lists for my students to complete. My expectations for my students did not convey interaction and I eventually came to understand that if I wanted my students to activate their higher thinking, they needed to be more interactive. Ultimately, I needed to practice a more engaging pedagogy. Inhibiting their creativity in a lined composition notebook did little for those who struggled with writing, the English language, or those who did not enjoy drawing. It cost my social studies students their freedom of thought, analysis, and logical synthesis. The art and journals became as structured as any worksheet I could have handed them. When given the right conditions, a notebook is still a notebook. There is no substitute for physical action. My students deserved to contemplate social studies while in motion. They deserved more memorable engagement, more movement, more fun.

It became clear my students' participation style was more sedentary than active due to my pedagogy. As a result, a research question emerged: In what ways do kinesthetic learning strategies such as dramatic play affect engagement and critical thinking skills in a sixth-grade social studies class? The question set into motion initial research on the effects of kinesthetic learning and its positive relationship to critical thinking skills (Greene, 2011; Have et al., 2016). As the action research progressed however, I found my students offered richer data that reflected great social transformations that had significant implications for my study.

The aim of this action research was to investigate the effects of kinesthetic learning on engagement and critical thinking skills among sixth-grade social studies

students. I presented a pre-project survey (Appendix C) to gauge preferred modes of learning. Before each full unit of study, students took a pretest and posttest (Appendix D - E) to help measure improved analyses. Next, the research included a six-week intervention of active dramatic play (Appendix F), and recorded field notes to help monitor students' actions, their responses to the topics, and their interactions with each other. I investigated recurring individual and interpersonal behaviors during student presentations as well as brainstorming sessions, such as relevant discussions and active listening. Presentations were formatively assessed through teacher observation regarding their relevancy to the topic. There was no formal observation rubric that evaluated creativity. Kinesthetic activities included content-relevant individual and cooperative group dramatizations that employed part- and full-body movement in the form of student role-play, charades, and pantomimes. After the intervention, students expressed thoughts about the intervention in the forms of a Likert-type survey (Appendix G) and group interviews (Appendix H).

Statement of the Problem

An assumption that underlies action research is that teachers can identify problems as well as feasible solutions (Fraenkel, Hyun, & Wallen, 2015). The identified problem of practice that I observed from class discussions was that sixth-grade social studies students lacked critical thinking skills. My students struggled to analyze obvious and nuanced information from primary and secondary sources in order to make relevant and logical predictions and conclusions. A democratic society expects students to function at a higher thinking level than simply recalling facts. It requires its citizenry to produce sound reasoning. Higher-level thinking is required in solving complex political,

business and humanitarian crises that face citizens. Dewey (1910) defined critical thinking as an "active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it" (p. 9). During the research, I observed my students in their conversations and dramatizations and asked them to verbally defend their dramatizations of historical concepts and people. Before the research began, I wondered if my students' opinions about concepts that they once thought strange, such as world religions, would eventually become readily accepted. I also wondered if students would indentify, through their brainstorming and dramatizations, historical social injustices. For example, the sixth grade curriculum focuses on the consequences of Magna Carta, eclipsing King John's treatment of the people he was charged to protect. Students should fully know the injustices and practice empathy while studying history, otherwise, they might not truly be able to contemplate, convey, and connect with social justice, past or present. In short, my students needed an outlet to practice critical thinking and reflection in order to recognize and enjoy a just and fair democracy.

Soffe, Marquardt, and Hale (2011) studied bad decision-making and poor ethical decisions within the business world. The researchers discovered that college institutions failed to educate business degree graduates in critical, reflective thinking. Business degree students who graduate college unprepared to develop sound strategies and build functioning organizations have negative implications in society (2011). This study traced unethical business practitioners back to the educational institutions where they attended. In short, what one learns in school has far reaching consequences. Our society looks to a standardized guide within public education in measuring its children's success.

In 2002, the United States federal government enacted the No Child Left Behind Act (NCLB). Its purpose was to increase academic achievement for all public-school students by mandating measures of accountability throughout the levels of education. Although NCLB was dismantled in 2015, its lingering effects include more time allocated for academic core classes such as reading and math, an increase in standardized tests, and a decrease in active learning (Jennings & Rentner, 2006) by eliminating health and physical education programs, subjects that are not considered academic core classes (SHAPE & AHA, 2016). A growing number of stakeholders perceive test scores as a means to measure student success, teacher efficacy, overall school achievement, and community reputation (Posner & Rudnitsky, 2006).

The American Academy of Pediatrics asserts that recess provides cognitive, social, emotional, and physical gains however, the trend to scale back recess within schools continues (Ramstetter et al., 2010). Schools have decreased students' active engagement such as physical education classes and recess in order to allocate more time to core academic classes with the assumption that scholastic gains would increase (Basch, 2010; Bass, Brown, Laurson, & Coleman, 2013; Rasberry et al., 2010; Levin & Nolan, 2010; Jarrett & Waite-Stupiansky, 2009; Society of Health and Physical Educators [SHAPE] & American Heart Association [AHA], 2016). According to the National Association of the Early Childhood Specialists in State Departments of Education (2001), prior to NCLB there already existed a trend of eliminating recess in favor of school accountability and allocating more time for testing procedures. As of 2013, only 20% of 672 American school districts required daily recess ("Let's move! Active schools," n.d.). Another reason schools continue to eliminate recess is to reduce potential student injuries

and misconduct (Jarrett & Waite-Stupiansky, 2009; Ramstetter, Murray, & Garner, 2010; Robert Wood Johnson Foundation & National Association of Elementary Schools, 2010). Regrettably, forty states allow physical activity to be withheld as a punishment and thirty-seven states allow schools or districts to use physical activity as a form of punishment (SHAPE & AHA, 2016). In light of this, Jarrett and Waite-Stupiansky (2009) found that children's activity level outside of school is linked to their activity level when in school. Therefore, a school's negative attitude toward physical activity may influence students to lead sedentary lives or to view physical activity as undesirable or punitive. Indeed, Gray (2016) states that schools have become increasingly coercive. Children are following the same curriculum, motivated by reward and punishment and as a result are devoid of "deep understanding and sense of purpose other than that of making it through the next hoop" (2016).

In 2013, Michelle Obama endorsed *Let's Move! Active Schools*, an offshoot of her 2010 health initiative, *Let's Move!*, to help schools integrate more physical activity (SHAPE & AHA, 2016). There is a conflicting message sent to public schools. Although government leaders espouse the benefits of movement by such health initiatives, there is no federal law requiring physical education in American schools (2016). In 2015, the Every Student Succeeds Act (ESSA) was signed by President Obama to revise NCLB; however, schools continue to feel the effects of the heightened awareness of accountability. ESSA requires states to create and implement their own challenging academic standards; administer high stakes tests in reading, math, and science; and, produce state report cards (Fennell, 2016; Jennings & Rentner, 2006). The by-product of the government's message appears to be clear: students must sit still to keep the rapid

curricular pace for the benefit of their national and state standardized test scores (Levin & Nolan, 2010). Consequently, schools may continue to allow traditional core academics to overshadow physical activity such as physical education and recess. As a result, students have less time to be physically engaged in learning.

In a democratic society, students are expected to develop into critical-thinking citizens, and yet, a commonly practiced teacher-centered, stationary pedagogy found in American education may be undermining that goal. According to Dewey and Dewey (1962) "action is the test of comprehension" (p. 89). Montessori (1965) was troubled by sedentary learning and firmly believed that useful activity facilitates intelligence. When children manipulate tangible items, they engage in abstract ideas and advance their thinking (1965). Physical dramatization makes ideas real (Dewey & Dewey, 1962). Therefore, students may not be able to grasp abstract concepts when they experience direct instruction. Levin, Levin, Siegler, and Druyan, (1990) found that although learning about linear speed of a rotational motion, sixth-grade students were not able to understand the concept. The students improved their understandings of rotational motion when they moved like rotating single objects rather than simply observing single objects moving. The relationship between the importance of critical thinking and active learning led to an identified problem of practice whereby the sixth-grade social studies students' lack of critical thinking skills may have derived from a sedentary pedagogy. The purpose of the current action research study was to determine if by including kinesthetic activities to a social studies curriculum, critical thinking skills were enhanced.

This belief of sedentary learning is rooted in an essentialist philosophy that gained momentum in the early 20th century that espouses that only essential knowledge should

be delivered to students without an opportunity for active student participation (Spring, 2014). Essentialist classrooms are teacher-centered where adults have great control over the learners. Inactive classrooms reflect essentialist beliefs, where students sit passively, and the basic freedom of movement is strongly curtailed. Passive students are not engaged nor motivated to learn and, as a consequence, students do not have an opportunity to think on higher cognitive levels (June, Yaacob, & Kheng, 2014). Essentialist philosophy is also known for its efficiency in society whereby the role of a school is to prepare learners to comply within the constructs of society with a prescribed way of receiving and generating concepts (Ozmon, 2012). Compliance is the word commonly used to vilify this pedagogy. Educators evaluate students with standardized tests that measure achievement of given knowledge, but such tests are devoid of measuring critical thinking (Gray & Chanoff, 1984; McNeil, 2000; Spring, 2014).

Despite beneficial associations between frequent physical activity and cognition (Levin & Nolan, 2010; SHAPE & AHA, 2016), a traditional teaching pedagogy continues to dominate instruction in which educators expect students to sit still to maintain a rapid curriculum pace for the benefit of standardized test scores. According to Basch (2010):

> There is currently no evidence indicating that this strategy is, in fact, effective in increasing standardized test scores; in fact, a growing body of evidence shows that increased time for . . . school-based physical activity programs is associated with either a neutral or positive impact on academic outcomes. (p. 41)

Students engage in passive learning activities that often involve textbook reading, paper and pencil activities, and more recently, technology. The teacher researcher's students

have their own school assigned Chromebooks and use them to augment passive activities such as research and content area activities. The popularity of technology within personal and workplace domains continues to negatively affect students' level of activity (AAP Council on communications and media, 2016; Hamilton, Hamilton, & Zderic, 2007).

Dewey (1938), a prominent educational theorist, declared, "freedom of movement is . . . a means of maintaining normal physical and mental health" (p. 63). The 2016 Shape of the Nation report states students are not engaged in enough physical activity to lead successful and healthy lives. Encouraging a sedentary classroom pedagogy may be undermining the ability for children to grow as creative, critical thinkers who mature into lifelong critical thinkers (Rasberry et al., 2010; Wigal, Emmerson, Gehricke, & Galassetti, 2012).

Buber's (1970) philosophical work grounds the proposed kinesthetic intervention. He emphasized that teachers are morally and ethically obligated to see others not as objects to serve a purpose, but as dignified humans with feelings and the right to learn and flourish. Teachers, however objectify students by having them sit passively to digest large amounts of textual and lecture-based information in a seemingly efficient way, devoid of interactions between students and between the teacher and students. A teacher-centered pedagogy does not help students engage in and practice complex learning skills, and therefore does not respect the exploratory nature of education (Goldman & Pellegrino, 2015). The modern age of standardized testing has reduced both educators and students to mere objects that, like computers, receive, store, and deliver data.

The teacher-researcher reflected on reasons why her classroom became inactive and identified factors that contributed to a passive teaching style. The primary reason was

the pressure to maximize the content coverage for standardized tests within an often-condensed instructional timeframe due to assemblies, drills, and benchmark testing.

All universities do not train their pre-service teachers in curricular activities that promote kinesthetic learning. The university where I attended did not teach kinesthetic teaching strategies, nor does the current school district offer such professional development in this area. While it is observed that most educators within the test site remain in a comfort zone of didactic teaching, my aim is to break the mold of sedentary teaching. The aim of the action research was to revisit a concept that education pioneers such as Dewey and Montessori applied in their schools where students actively engaged in critical thinking by initiating their own learning. In my class, this was accomplished through embodied dramatic activities such as reenactment. Embodiment is when learning is understood through moving our bodies and recognizing how bodies help interpret and create meaning (Perry & Medina, 2015). Importantly, our bodies are always in relationship with others and the world (Ellsworth, 2005).

Before this action research, my pedagogy modeled the standard protocol based on an essentialism approach to teaching: didactic and teacher-centered. Teachers provide information and children sit still in chairs and listen. Students are expected to take notes. If they have questions, they are expected to research answers in a textbook. Questions take time away from the hard-pressed task of covering content for the standardized tests and are quickly addressed. For students, talking across the aisles is prohibited. True to an essentialism theoretical orientation, instructors have complete control over the content that is taught, as well as student behavior. Students are expected to sit passively and not engage in conversation with each other. Freire (2013) metaphorically describes this as the

banking system. Children are empty vessels waiting for educators, without whom students would remain devoid of knowledge, to fill them with knowledge. As a result, a student's job is to listen without question and without active participation. My vision for my class was diametrically different. It was one that invites active engagement where the students learn from each other and challenge each other to think critically by analyzing, evaluating, and recreating what they learn through theatrical and embodied movement. The envisioned classroom is supported by abstract thinking as per Piaget (1952) and Vygotsky (1978) who shed light on how children learn and whose works support the movement from didactic teaching to child-centered teaching. Vygotsky recognized a "borderline where words and objects, gestures and motor actions, and meanings and mental operations share space and time, presentation, and re-presentation" (Daniels, Cole & Wertsch, 2007, p. 297). Piaget (1965) believed that active learning creates new awareness and encourages critical thinking.

Research Question

To examine the effect of kinesthetic and cognitive learning activities on the student participants' critical thinking skills, the following research question provided the basis of the study: In what ways do kinesthetic learning strategies engage critical thinking skills in a sixth-grade social studies class?

Purpose Statement

The purpose of this study was to determine if including kinesthetic activities to a social studies curriculum, critical thinking skills are enhanced. Promoting critical thinking skills through active learning may foster more creative, innovative, and engaged

citizens (Moreau, 2015). Innovation is vital for education, and in-class movement can be used as a vital link between body and mind. Students should learn through experience; movement being the most visceral way to experience concepts. Dewey (1938) argued physical activity encourages thinking; "Every genuine experience has an active side which changes in some degree the objective conditions under which experiences are had" (p. 39). The notion of a sedentary learning environment—detaching students from truly experiencing education—stands in stark contrast to Dewey's (1938) declaration that "we have still to learn from the example of the Greeks who saw clearly the relation between a sound body and a sound mind" (p. 63).

Incorporating kinesthetic teaching strategies in an action research study will highlight how teachers can have more dynamic and participatory roles in discovering how kinesthetic learning affects students' critical thinking skills. I was directly involved in the action research and continually reflected on the research question, which made the research more meaningful and relevant to the local setting. Additionally, this research can exemplify how teachers can take a holistic approach to teach the whole child (Farley, 1981). Despite advocating for active learning, it appeared I practiced the philosophy of dualism, a Cartesian doctrine of disconnecting the mind and body (Ozmon, 2012). This research aims to bridge the cognitive and physical domains in pedagogy.

There is a complexity in teaching critical thinking, and current pedagogy often falls short in engaging an intellectually challenging curriculum (Karnes & Bean, 2009). Dunn and Dunn (2005) reviewed decades of research concentrating on kinesthetic teaching strategies and found significant strides in student academic achievement when kinesthetic strategies were employed. The aim of the current project was to determine

whether subject relevant kinesthetic activities such as role-playing affected students' critical thinking. Students built on their past knowledge and newly presented materials to interpret, build, and reconstruct information physically and socially. Dewey (1938) stated that honest reflection happens after more overt action takes place. Students can organize what has been learned in the "periods of activity in which the hands and other parts of the body beside the brain are used" (p. 63). This study focused on task-relevant psychomotor teaching strategies while focusing on Bloom's revised taxonomy (Anderson & Krathwohl, 2001) - mainly the application, analytical, evaluative, and creative domains.

In addition to pretests posttests to help measure critical thinking, I also recorded field notes to describe observations. After the six-week kinesthetic intervention, students took a Likert scale survey and gave interviews to add dimension to the research; to ascertain if and in what ways kinesthetic learning affected students. For Dewey (1962), students grasp significant meanings with embodied connections, or the act of doing things. People show advanced social cognition when their movements correlate with what they think and learn (Lillard, 2005). Classmates are able to read nonverbal cues such as gestures and facial expressions and through creative dramatizations, students develop empathy and acceptance for diversity (Montessori, 1965).

When dramatizing together, students experience and appreciate each other's creative viewpoints and diverse emotions, and learn that they have "an equal opportunity to express themselves in a shared experience" (Dewey, 1962, p. 93). Utilizing creative kinesthetic strategies to advance empathy can also stimulate divergent thinking (Davis, Rimm, & Siegle, 2011), a higher-order thinking domain. Therefore, to advocate for more robust critical thinking skills in terms of analysis, creativity, and empathy, an active

pedagogy will be purposefully implemented and the results will be examined.

The South Carolina sixth-grade curriculum focuses on "geography, economics and government, the conflicts and accomplishments throughout history from the earliest man to the era of European exploration, with a focus on the social, economic, and political structures of major civilizations" (South Carolina Department of Education, 2011, p. 45). State standards are subject centered with assigned indicators. The following is an example: "6-1.2: Explain the emergence of agriculture and its effect on early human communities" (p. 46). While the state standards have enduring understandings, they are little more than summaries of the standards. The field of social studies, however, is a unique subject to teach because of its humanistic and philosophical nature in explaining events that unfold in the world. A single event could change a significant course in the world. In that context, the subject can be seen as a foundation for creative thought. During the action research, students dramatized historical events, brainstormed possible outcomes if a particular change occurred, and discussed the possible consequences on how they currently live.

The kinesthetic activities will also include global diversity issues. Such issues are relevant in a world history class and are significant for social justice in a democracy. The National Council of Social Studies (n.d.) organized themes of the social studies that include the following concepts: studying and respecting different cultures, understanding how people interpret historical stories differently, the importance of communication, understanding different beliefs and convictions, exploring the concept of fairness, how technology affects values and knowledge, benefits and challenges of global interdependence, the roles of a local and global citizen.

To advance students' critical thinking skills, this action research aimed to engage students in active learning experiences that combined kinesthetic activities with the cognitive development of their critical thinking skills. The classroom culture was recreated to involve a community of learners who experience dynamic activities in a child-centered environment. The classroom transformed into one that included: discussion groups, collaborative projects, and the development of skits and scenarios that embodied creative thinking and challenged critical thinking by advancing information and asking "what if" questions.

As the teacher-researcher, I assessed the effects of the content relevant kinesthetic activities by engaging with students during their six-week intervention, taking field notes, and utilizing pre-tests and post-tests (Appendix C). Student-participants completed a Likert-type scale survey (Appendix E) that had four points instead of five because "there it is likely for people not to think about or convey how they truly feel (Mertler, 2014). Students also gave interviews after the six-week intervention in order to convey their feelings of kinesthetic learning in the social studies class.

Theoretical Framework

The present action research used theories and concepts as useful organizational tools (Farley, 1981). The framework that inspired this action research included the psychological theory of constructivism, the philosophy of pragmatism, and the learning model of Bloom et al.'s (2001) taxonomy.

Constructivism

A traditional perspective of education views children as having brains that are to be filled like vessels with information that comes from experts like the teachers. Freire

(2013) conveyed this concept as the banking model of education where dialogue is absent, where teachers bestow knowledge on students who lack knowledge. This is a passive, one-way working view of how intelligence is attained (Lillard, 2005). A constructivist view of education, however, assumes that students create meaning through active critical thinking skills such as questioning, reflecting and rearranging information (Buoncristiani & Buoncristiani, 2012). Constructivists maintain students are not passive learners. In a desk-based classroom, the only one who is moving is the educator who is in front of the room: regularly talking, standing, walking, using gestures. It is easier to view and treat students as passive learners when they are sitting. The question reemerged: When teaching is conducted this way, am I robbing my students of cognitive activism?

Piaget (1965) is an important source of constructivist thought. He believed play and learning should to be integrated, and that students learn by actively constructing and reconstructing knowledge, usually by physical activities (Dowling, 2012; Piaget & Gambain, 1965). Teachers should offer students opportunities to continually remake their understanding of the world around them. Piaget espoused active learning within an enriched environment supports the creation of new awareness and fosters critical thinking (Piaget & Gambain, 1965).

Vygotsky (1978) believed that children first learn by imitating those who surround them, then by internalizing what they imitate, finally reaching levels of expertise in an apprentice style scaffolding experience. He created the term Zone of Proximal Level to describe how the more guided learning a child experiences, the more advanced his development will be and eventually the scaffolding will be removed. Gray and Feldman (2004) researched the Zone of Proximal Development at Sudbury Valley

School and found a promising educational experience for the students who were free to move and socialize with classmates. As students in my class work together and share information, they work together to make sense of the acquired knowledge and to create relevant physical dramas. The collaborative and creative elements engage students in meaning making in an active way.

In his discourse analysis, Gee (2018), claims people acquire knowledge, or a tool kit, through their environments. The language, actions, and thoughts that students learn reinforce their place in society, be it an advantageous position or not (2018). One's language and actions perpetuate an identity and global perspectives. In this action research, students had opportunities to share their thoughts through creative actions and as such, knowledge and perspectives were shared in an interactive way.

Pragmatism / Instrumentalism

Pragmatists rationalize traditional ways of thinking while creating new ideas to cope with the changing world (Ozmon, 2012). The goal of pragmatism is finding truth as it relates to practical outcomes for people. Thinkers from the scientific revolution and enlightenment periods helped form pragmatism into a formal philosophy (2012) that has heavily influenced education. Rousseau (1979), a distinguished philosopher, recognized and described the educative practicality in the connection between nature and experience in his book, *Emile*. Individuals develop into capable beings within social environments for the good of themselves and for the good of society. Pragmatics reject the notion of dualism in education, the belief that the mind and body are conceptually divided (Ozmon, 2012). My students in the present action research worked more within a social context, a skill that benefits them and society.

The reason educators continually do things that do not work is due to a confined way of thinking, mainly due to habit (Ozmon, 2012). Since the common school movement in America, students have been expected to practice restraint and obedience in order to conform to society and enter a disciplined work force (Spring, 2014). Classroom management requires teachers to control children's' bodies in order to teach children (Enriquez et. al, 2016). Within pragmatism, the aesthetic development gained traction, which underscored a different notion that education should help unify the acts of thinking and doing, thus bringing mind and body together (Ozmon, 2012).

Greene (1978) argued for the integration of the humanities, such as drama and dance, in school curriculum. For Greene, individuals who experience concepts embedded in the arts are active, wide-awake, more fully aware, and therefore more interested in life. Imagination means seeing different circumstances (1978) and dramatic play could enable students to interpret historical events with a creativity they may not experience otherwise. According to Dewey (1938), students attain the best possible education when teachers offer productive experiences. For both Greene and Dewey, a stationary learning environment where students are detached from lived experiences is problematic. Today, mounting empirical research lends credence to Dewey and Greene's thinking, suggesting that physical activity has positive benefits on cognition, focus, and academic achievement (Basch, 2010; Rasberry et al., 2010: SHAPE & AHA, 2016; Wigal et al., 2013).

Critical Thinking

The revised Bloom's taxonomy (2001) proposed by Anderson and Krathwohl provides a classification and an understanding of cognitive skills. The social studies discipline requires higher-order thinking skills, such as interpreting, synthesizing, and

logically drawing conclusions from multiple pieces of visual and linguistic information. The teacher-researcher's students were not challenged beyond the first two levels of Bloom's revised taxonomy (Anderson & Krathwohl, 2001) of remembering and understanding. The South Carolina Department of Education (2011) dictates specific indicators that demonstrate a competent understanding of state standards. Those indicators focus on lower levels of the taxonomy: identifying, summarizing, describing, comparing, and explaining. However, there are literacy skills that are included for teachers to utilize in order to advance student understanding. The most advanced of these literacy skills include explaining cause and effect. The action research intervention had students regularly dramatizing historical causes and effects. A higher cognitive level of this taxonomy is *creating*, which is described as assembling elements together to form a functional whole, or to recognize elements into a new structure (2001). The learning goals of higher-level thinking skills include constructing, designing, and producing. When student-participants dramatized a historical concept, there were variables whereby they needed to interpret, analyze, synthesize, and justify their dramatic activity.

In 1980, Dr. Richard Paul, a philosophy professor at Sonoma State University, founded the Center for Critical Thinking and during his lifetime worked with the National Education Association and the U.S. Department of Education to help incorporate critical thinking teaching that is based on intellectual standards. The concept of critical thinking suggests discerning objective judgment based on standards to determine the truth and merit about something (Paul, Elder, & Bartell, 1997). According to Paul, Elder, & Bartell (1997), critical thinking components are interrelated and interdependent. Components include the following: engaging in reasoned conversation

which is necessary for a democracy; reasoning that is rooted in intellectual standards like depth, breadth and logic; inference; empathy, fairness, and integrity (1997). Rather than being trained to become a critical thinker, the learner is on a journey in becoming a critical thinker (1997). Thinking critically goes beyond problem solving; it influences the affective, or emotion domain, and ultimately self-determination is grounded in critical thinking (1997). The qualitative data of this action research shed light on the students' feelings about the emotion domain.

Critical thinkers solve problems in creative ways (Anderson & Krathwohl, 2001) and evaluate the status quo. Although a paper pencil test might reflect a status quo in the American educational pedagogy (Anderson, 1996), this action research intervention, with the field notes, Likert scale survey, interviews, and the action plan helped build quality instruction and learning. In this study, students had the opportunity to engage in more advanced skillful thinking and to make complex connections between the cognitive skills when they participated in creative kinesthetic learning opportunities.

Kinesthetic Learning

For this action research, kinesthetic activity was defined as subject relevant physical activity, and included theatrical activities, pretend play, charades, and role-playing, whose focus is to motivate complex thinking. Rousseau (1979), Piaget (Piaget & Gambain, 1965), Dewey (1938), Montessori (1965), and Kolb (1984) claimed humans make sense of information through physical movement. A higher quality of learning occurs during kinesthetic activities and is also supported by "studies showing that cognitive and sensorimotor processes are closely intertwined" (Chandler & Tricot, 2015). Lancaster & Rikard (2002) found that a middle school in northern Virginia increased

their state standards of learning by incorporating a "Systems Approach" where teachers used a variety of methods, but found that movement was particularly effective in comprehending abstract concepts. Students are able to grasp abstract concepts by creating, developing, and expressing knowledge by learning in concrete ways through movement.

Action Research

Educational research involves the application of scientific method to educational problems (Mertler, 2014). Action research is a method for educators to reflect and improve upon their craft, where educators "break with the mechanical life, to overcome their own submergence in the habitual, even in what they conceive to be virtuous, and ask the 'why' in which learning and moral reasoning begin" (Greene, 1978, p. 46). The main difference between traditional and action research in education is the role of the researcher. Traditional research is often conducted by individuals who are somewhat removed from the environment they study (Mertler, 2014). Conversely, those who have a vested interest in education, such as teachers or administrators, conduct action research. Teachers engage in action research when they carefully acquire and reflect on information while wanting to improve their teaching methods (2014). Where traditional research may apply research findings to a wide audience, practitioner action research allows educators to connect theoretical frameworks to their own pedagogy (2014). The end goal is to study the dynamic field of education continually within the constructs of a changing society. Action research, however, is not merely an act of reflection. Rather, practioners use action research to improve their craft and to advance the social good (Zeichner, 1993).

Nature of the Study

Mertler (2014) took the concepts of action research and developed a model to help researchers organize their studies. In the planning stage, the researcher identifies a problem, which, in this case, was sixth-grade social studies students not engaging in critical thinking. Next, a literature review is written and for this project, it outlines the roles that movement, dramatic play, and embodiment have with cognition. The researcher then develops a research plan, which for this project, was a mixed methods research study for two same-subject sixth-grade classes. The study determined the effects of kinesthetic learning on critical thinking skills. A preproject survey, postproject survey and an interview helped determine students' thoughts on different modes of learning.

Because each unit is less than six weeks, two pretests and posttests were administered. However, due to scheduling, the intervention began in the midst of the Ancient Japan unit without the benefit of a pretest or posttest. It was during this week, students were introduced to the kinesthetic learning and grew comfortable in the pedagogy. Short stints of independent charades took place. The first pretest-posttest focused on the Middle Ages and the second pretest-posttest was on the Renaissance. After administering pretests that posed critical thinking questions, kinesthetic models of learning were implemented to determine what effects kinesthetic learning or embodiment had on students' critical thinking skills, as exhibited by a teacher-made summative post-test. The intervention was adapted from Asher's (1966) Total Physical Response learning strategy, whereby the teacher-research presented scenarios either by giving verbal queues or written instructions. Students interpreted and physically acted out the scenarios. The intervention of the study enabled students to engage in kinesthetic learning options such as role-playing, charades and reenactments, both independently and collaboratively.

Students completed brief research on their group topic. For instance, after reading a secondary source, listening to a podcast, watching a brief video reenactment, and/or taking notes related to a concept or historical event, students were assigned to groups where they decided how to physically perform a brief dramatization. The goal was to have students work together, create a dramatization, teach onlookers more about the topic, and justify how their drama was relevant to the concept or event. For example, when studying Magna Carta, each group was assigned a different concept relevant to the historical document and reenacted in any way they wanted. In this case, each group acted out Rule of Law, Shared Power, Limited Government and Individual Rights. I interviewed the students while in character, asking them questions about what they are doing and why. Another day, classroom visitors would have seen students in different groups brainstorming and then acting the benefits of feudalism, the effects of the bubonic plague on the survivors, and the enduring effects of shared power. The goal was to allow as much engagement in the form of cooperative creativity and to determine the effects of the subject relevant physical drama as they related to students' critical thinking. Research began to reveal students' overall engagement, motivation, and enjoyment in the class.

After each unit was finished, students completed a posttest that helped me determine if kinesthetic learning had an affect on critical thinking skills. Field notes were taken throughout the six weeks that helped me record, reflect on, and code reoccurring behaviors that lent themselves to themes. After the intervention was finished, a Likert scale survey and a group interview revealed student perceptions of kinesthetic learning.

The goal of the current action research was to measure students' critical thinking skills after incorporating meaningful kinesthetic teaching methods, but it morphed to

develop a holistic picture with field notes, surveys, and interviews to determine students' perceptions of engagement and motivation. The methods and explanation of how the researcher collected and analyzed the data are found in Chapter 3. Chapter 4 will interpret the data and Chapter 5 will outline an action plan based on the results of the study.

Assumptions

One assumption was that the students who chose to participate in the study did so to the best of their abilities, which meant the students would have participated with fidelity on the pre-tests, kinesthetic activities, and post-tests. Additionally, I assumed students responded truthfully on the Likert scale surveys and the interviews. When presenting the study to the classroom of students, I hoped to convey a sincere and enthusiastic reason for the study and that students maintained a sustained effort in the study. Students were told that they were under no obligation to participate, that they could opt out of the study at any time, and that their identities were strictly confidential.

Another assumption was that collecting action research data in any quantitative way would be legitimate in light of a pragmatic paradigm. The approach of kinesthetic learning assumes that people learn by doing. There was also the assumption that children prefer to move rather than stay sedentary; however, I needed to stay sensitive to those participants who might have felt uncomfortable being conspicuous, active participants rather than remaining inconspicuous while sitting at their desks. The researcher also needed to reinforce a classroom climate of safety, mutual respect, and support.

An additional assumption was that the school administrators felt that kinesthetic learning is valuable. In light of having positive conversations with the school principal about the study and the middle school partnering in a health initiative with a large

company in the community, kinesthetic learning would be seen as an asset within the school.

Limitations

One limitation was the time frame in which the study occurred. Due to the doctoral program's schedules, the actual study and time to collect data was short. An extended school closure due to an unforeseen incident such as a storm would have had a negative impact on the study and the researcher would have needed to inquire with an advisor. Another limitation was the teacher-made pre-tests and post-tests. If the tests were not measuring critical thinking skills or were not written clearly, the conclusion of the study would not be valid. In addition, the qualitative data such as the field notes may not have captured enough information to give a full picture of what was happening in the classroom. Furthermore, the post interviews were voluntary and therefore, there might not have been as much constructive criticism as possible. Also, not all children have a 100% attendance rate, therefore there would have been a discrepancy between students who regularly attend school and others who may be chronically absent.

Delimitations

The delimitations of the study set the parameters for the study and were those variables over which I controlled. Although there were various problems of practice that I could have identified, I chose to pursue and investigate the lack of critical thinking skills my sixth-grade social studies students displayed in class discussions and how kinesthetic learning might stimulate higher level thinking skills. The study evolved into one where I observed and recorded my students' latent talents. The purpose of the study and the constructivist and pragmatic frameworks help limit the study's focus while remaining

relevant. The controlled variables also included the particular sixth-grade social studies classes with which the study was conducted, the teacher made presurvey, kinesthetic activities, pre and post-tests, Likert-type scale survey, and interview questions.

Definition of Terms

Critical thinking skills. Bloom's revised taxonomy (2001) provides a definition of critical thinking skills. The learning goals of higher-level critical thinking skills include constructing, designing, and producing. The higher cognitive level of this taxonomy is creating, which is described as assembling elements together to form a functional whole, or to recognize elements into a new structure.

Kinesthetic learning. Subject-relevant physical activity, including theatrical activities, improvisation, charades, and role-playing, whose focus is to motivate complex thinking. These types of kinesthetic activities provide a dynamic way to encourage *higher order thinking*, which are those cognitive processes that involve more complex thinking such as analysis and creativity.

Conclusion

The subject of social studies helps learners understand the past, and helps them create a more just society through logical analysis, judgment, cooperation, and action. Students in the sixth-grade social studies class have struggled with critical thinking skills, as seen in class discussions and on class assignments. Following these observations and the growing literature supporting the association between movement and cognition (e.g., Basch, 2010; Chandler & Tricot, 2015; Dowling, 2012; Dunn & Dunn, 2005; Gallagher & Lindgren, 2015; Have et al., 2016; Lozada & Carro, 2016; Mobley & Fisher, 2014; Moreau, 2015; Mullender-Wijnsma et al., 2015; Richards, 2012; Soffe et al., 2011), the

teacher-researcher implemented deliberate, task-relevant kinesthetic teaching strategies in order to investigate how they may affect students' engagement and thereby, critical thinking skills.

When learners apply critical thinking skills in performances that convey logic, those learners continually build their intellectual skills (King, Goodson, & Rohani, 1998). The purpose of this study was to determine if by including kinesthetic activities to a social studies curriculum, engagement and critical thinking skills were enhanced. Educators cannot claim to respect a whole child philosophy if they separate the mind and body. To live a stationary, passive lifestyle is counter to responsible citizenship, and to teach students in a sedentary way degrades the whole child. Theoretical frameworks built by educational progressives such as Dewey (1910, 1938, 1962), Montessori (1965, 1967, 2013), and Greene (1978, 2011) underscored the importance of kinesthetic activity in regards to engagement and critical thinking. This study will help advance knowledge for the sake of my own action research and help answer the question: In what ways do kinesthetic learning strategies engage critical thinking skills in a sixth-grade social studies class? The subsequent chapters will delve into a comprehensive literature review of various research studies, will detail the methods for this action research design, provide reflection of the study, and a future action plan aimed at improving the quality of instruction that involves active student learning.

.

CHAPTER 2

LITERATURE REVIEW

Introduction

This literature review examines scholarly research that focuses on movement and its effect on critical thinking and engagement. Sitting still for long periods of time is a common educational expectation for students and remains pervasive in modern American schools (Basch, 2010). The rationale for a sedentary method of instruction is to ensure standardized test information is relayed from the instructor to the students as efficiently and quickly as possible (Basch, 2010; Levin & Nolan, 2010). The problem of practice focuses on the lack of critical thinking skills and the literature review will summarize studies that explore the relationships between cognition and movement, as well as engaged learning and movement, mainly in the classroom setting (Dowling, 2012; Have et al., 2016; June et al., 2014; Moby & Fisher, 2014; Moreau, 2015; Piaget & Gabain, 1965; Richards, 2012; Younger et al., 2016).

This review of literature addresses the following: an explanation of why a thorough study of different types of literature validates research; a comparison of different methodologies from relevant studies and a justification the action research method for this study; an examination of theoretical frameworks that support the present action research and an explanation of how the same theories have been used in pertinent studies; and an overview of how the topic of kinesthetic learning has become refined.

The purpose of a comprehensive literature review is to help justify and strengthen one's research and to help educators carefully review their pedagogy. This literature review provides a foundation for the researcher to address the study's research question: In what ways does implementing kinesthetic learning techniques engage critical thinking skills? The following review describes the scholarly literature revolving around how physical movement affects critical thinking skills. The academic sources that were utilized in this research include original theorists' published books, college textbooks, anthologies, and peer-reviewed journal articles and research studies found through PsycINFO, EBSCO, ProQuest, and education databases such as ERIC, Education Source, and Education Index Retrospective. Search terms included *sedentary and cognition and achievement*, *kinesthetic movement and cognition and achievement, action research and kinesthetic learning, movement and learning, physical activit*, classroom active learning, embodiment, and school engagement*. Primary and secondary resources were summarized and after more focused research, different methodologies were compared with action research and themes began to emerge: the effects of sedentary behavior, how movement affects learning, and different models of kinesthetic learning.

Different students perform at different levels of critical thinking. Therefore, teachers have an obligation to differentiate instruction so that there are engaging opportunities for students to build their preexisting knowledge and to help students develop their critical thinking. Schrio (2013) explains the Learner-Centered ideology. "Personal meanings are created when sensory information is perceived by a learner and incorporated by the learner into his or her existing cognitive structure through the twin processes of accommodation and assimilation" (p. 141). The current intervention will

have students active in their interpretation of information they gain from primary and secondary sources. They will be standing up, moving independently while discussing topics and their presentations with their peers.

Piaget (1965), a constructivist, believed play and learning are linked, and students naturally learn by constructing and reconstructing knowledge, usually through physical activities (Dowling, 2012). Critical thinking involves many characteristics including being well informed, developing and defending a position, making conclusions with caution and it also includes being creative in a social context (Ennis, 1993). The present students will often be working with peers while having the encouragement and freedom to move and discuss information and decisions about how they will perform their kinesthetic activities.

On a physiological level, when the brain engages in strenuous mental work and focus, it requires more oxygen and therefore when the brain receives more oxygen, the brain's cognition and attention improve (Moss, Scholey, & Wesnes, 1998). Both "deep breathing and movement infuse the brain with oxygen and triggers the release of glucose, (and) when acting together, produce energy for stronger memory and cognitive function" (Jensen, 2013, p. 25). Schools are duty-bound to implement a well-rounded education for students, and therefore it is prudent to invest in physically active practices such as physically active cooperative group work that benefits students' critical thinking, motivation, and social well-being. (Fromel, et al., 2015; Marks, 2000; Ryan & Deci, 2000; Wiggal, et al., 2012). Building on this body of knowledge, the present action research will offer an intervention that will teach students how relevant physical activity may affect critical thinking skills, motivation, and social engagement.

Importance of Literature Review

A literature review has two main functions. First, it explains the information that has been discovered about a topic. The researcher outlines the strengths and weaknesses of the relevant research and conveys the trends and themes in the existing literature. Second, the literature review enables the researcher to gain expertise in educational philosophy and curriculum theory as they relate to the action research topic (Mertler, 2014). Through a literature review, a researcher becomes proficient in the problem of practice by carefully investigating how past research investigated the topic (2014).

The collected studies legitimize the research project and help contextualize the action research within educational frameworks and past research. A comprehensive investigation allows a researcher to rationalize the importance of the problem of practice and also synthesize and acquire new perspectives on the educational phenomenon (Randolph, 2009). Accordingly, this literature review will describe scholarly works that focus the effects of sedentary behavior and kinesthetic movement as they relate to critical thinking, academic and social engagement, and how relevant kinesthetic learning may benefit critical thinking skills and engagement. It is through the literature review the teacher-researcher justifies a suggested study that addresses the problem of practice, which is her students' lack of academic engagement and critical thinking skills. Bloom's (Anderson & Krathwhol, 2001) taxonomy of educational objectives will drive the definition of critical thinking skills, which include analyzing and creating.

Researchers gain more knowledgeable when studying scholarly research and considering others' interventions when positive outcomes arise. Also, researchers who are more engaged in their own research experience positive effects (Mertler, 2014).

The literature review reveals themes that strengthen the action research. One theme in the research focuses on how being in motion and being sedentary affect cognition. The research will also present different models of kinesthetic learning. Lastly, the literature review will explore the causes and effects of academic and social engagement. Theoretical frameworks that ground the research will also add support to the study. Applicable theories help the researcher understand the problem, methods, and possible outcomes of the study. Constructivism, pragmatism, and Social Reconstructionism will undergird this study.

Methodologies

The teacher-researcher's aim was to understand how kinesthetic learning, specifically subject relevant movement such as acting, charades, and reenacting affected sixth grade students' higher level thinking skills and eventually included the affective domain of learning through movement and drama. The mixed methods study combined quantitative and qualitative methods in order to validate the results in both methods. Although mixed-methods designs usually require a large amount of time and resources, action research allows flexibility. Many times, teachers develop their own instruments "[a]nd they are usually shorter, simpler, and less formal than the instruments used in more traditional research studies" (Fraenkel, Hyun, & Wallen, 2015, p. 592). For this action research, the teacher-research will administer a teacher made presurvey, summative pre-tests and post-tests. The teacher will observe creative kinesthetic activities and informally ask students to defend their actions to check for relevancy. Field notes helped me record what was heard and seen in the class. The field notes assisted in a grounded theory methodology whereby recognizable themes arose and were grouped to help me reflect on

an action plan where movement would be regularly incorporated in my social studies classes. The teacher researcher also made a Likert scale survey after the intervention and interview questions.

Action research is a way for the teacher-researcher to take a participatory role in determining the impact that frequent and relevant movement might have on her students' engagement and higher level thinking skills. Furthermore, action research requires constant reflection, which will ensure the research is relevant in a local setting.

A main difference between traditional and action research is that traditional research makes connections to a wide audience, while those who employ action research connects theoretical frameworks to their own pedagogy in their setting (Mertler, 2014). Those who have a vested interest in education, like teachers and administrators, use an action research design. Importantly, teachers are active participants who implement applicable strategies for the problem of practice they have identified. Ultimately, the research is under the care of the researcher, is more pliable and more valuable for the setting (2014). Additionally, students will be active partners with the teacher in the study instead of being subjects of a study conducted by a detached practitioner.

The present action research was grounded in constructivism and pragmatism as well as Social Reconstruction. Social Reconstructionists believe that educators are powerful agents of a just society and as Counts (Flinders & Thornton, 2013) claimed, they can use their power for the interest of society. People must critically think about and continually reflect on society's problems, craft ways to resolve those problems, and then take action. This concept resonates with action researchers, because that is what action researchers do. A problem of practice is recognized, the cause(s) are identified, core

beliefs are reviewed, intervention(s) are introduced, stakeholders are involved, and finally an action plan is designed and implemented.

Although action researchers mostly use qualitative methods, pragmatics propose that quantitative methods are legitimate for good research, as well. Groundbreaking empirical research that has enlightened the teacher-researcher consists of medical and university research on movement and cognition. The literature provides extensive knowledge that supports the action research. Relevant and current research sources are experimental, mainly quantitative, empirical, or meta-analysis. The effects of movement or lack of movement on cognition have been researched by those in the medical field and the university level, both fields that have extensive resources and funding than the present study and a focus on empirical data. The breadth and depth of the following studies provide detailed and scholarly knowledge that provided foundational rationale behind this action research.

The Centers of Disease Control and Prevention (CDC) (2010) conducted a meta-analysis of 43 studies from 1985 to 2008, focusing on children from five to eighteen years old. This age group is relevant because sixth-grade students are usually between 11 and 12 years old Although my action research does not have the same resources as the CDC, information will be interpreted using quantitative data analysis techniques. Researchers found evidence that physical activity can help improve academic achievement, including grades and standardized test scores (2010). Eight studies explored in-class physical activity, which directly relates to my intervention. Short physical activities five to twenty minutes were designed to promote learning through physical activity, or to simply provide students with a pure physical activity break.

While some research reflected large-scale meta analysis, other research incorporated qualitative methods as well. Stevens (2015) employed a mixed-methods research project with the help of her colleagues to study the impact of role-playing. Role-playing is a learning strategy the present action researcher will include within the kinesthetic intervention. Stevens transcribed 144 open-ended student surveys that asked students to describe their thoughts about role-playing and to describe if the teaching method encouraged them to learn more about the topics (2015). Graduate students helped review and document the findings so although open-ended surveys are useful in determining the perceptions of the intervention, close-ended surveys are more time efficient in a short term study like the present action research.

Altun (2015) researched the effects of cooperative group learning on academic achievement and social solidarity. The rationale was to better prepare students for a workforce that values a teamwork approach to problem solving. The sample was taken in a private school in Istanbul with a total of 20 sixth-graders; 13 boys and 7 girls. Both qualitative and quantitative methods were used in the study. To measure achievement, Altun (2015) used a pre-test prior to the unit that engaged cooperative group learning and a post-test after the implementation of cooperative learning. The summative assessment was used in years' past by different teachers, extensively reviewed and parsed by different educators for the study, ultimately reducing it from 40 questions to 25. Altun (2015) employed a T-test to examine pre-test and post-test scores, which showed positive results. To clarify findings, student interviews were conducted after the unit was taught and the test was administered. Only 10 students were surveyed instead of the total student subject population. This study was not as helpful as other

studies because it focused solely on cooperative group strategies, not kinesthetic learning. However, the study was useful when implementing movement where students worked in cooperative ways while dramatizing.

Researchers that use a traditional research design find that teacher feedback is invaluable. Mullender-Wijnsma, et al (2015) prescribed fabricated movement lessons that the researchers developed. The elementary school teachers who implemented the intervention gave advice after every lesson and the researchers concluded that for subsequent research on the same topic, the lessons would be altered to reflect the teachers' suggestions. According to Ozmon (2012):

> A teacher is "exceptionally competent, one who possesses breadth and depth of knowledge, understands current conditions that affect the lives of students, knows how to organize and direct student investigations, understands psychological development and learning theory, provides a supportive environment in which students can learn, and possesses a refined understanding of school and community resources that are available for teaching and learning. (p.138)

The convenience sample of the this action research was two sixth-grade social studies classes consisting of approximately 22 and 28 students respectively. Most of the studies that were reviewed had much larger samples encompassing multiple schools (Fromel, et al., 2016; Mullender-Wunsma, et al., 2015; Stewart, Dennison, Kohl, & Doyle, 2004), but the present research sample size was legitimate since generalizability is not a goal in action research (Fraenkel, Hyun, & Wallen, 2015).

The current study employed a mixed methods design, which helped to assess students' critical thinking skills, observe student behavior and emotions, and glean

student opinions about kinesthetic learning. Bloom's taxonomy of educational objectives helped to define critical thinking skills, which include analyzing and creating (Anderson & Krathwhol, 2001). Lister's (2005) educational research incorporated a pretest-posttest design with the same number of questions and content on eight pre-tests and post-tests. However, Lister's (2005) was an experimental study, incorporating multiple variables, and the sample was approximately four times larger than the current research study. The current research employed a teacher-made assessment, which is common in action research (Fraenkel, Hyun, & Wallen, 2015) and due to time constraints for this study, the pretest-posttest was preferable because helped ascertain "if some sort of change has taken place" (Mertler, 2014).

After the pre-tests, the independent variable was introduced in the form of student-made kinesthetic formative assessments. Formative assessments are how students' progress is monitored before more formal tests are taken (Chapman & King, 2012). "Assessments during learning provide opportunities to infuse monitoring and adjusting for intervention as a need emerges" (p. 83).

Teachers should read about interventions other teachers employ in their studies in order to gain a perspective of someone who has similar professional circumstances. Braniff's (2010) action research revolved around a desire to implement more activity in her fourth-grade classroom. She wanted to determine how physical activity affected, among other things, her 19 students' learning. The four-month intervention included movement through water breaks, or cooperative groups visiting learning station. Unlike Braniff, the teacher-research does not have four months to collect data. Additionally, the movement in the current research will be subject related. However, the study was helpful

because Braniff (2010) cautions teachers who desire to incorporate more classroom movement to have clear expectations to help with classroom management, which will help address the assumption that children will stay on task during and after the interventions.

The present action research incorporated imaginative outlets such as the kinesthetic learning techniques that demonstrated how students deconstruct information, internalize it, and then reconstruct the information. Students explained and justified their choices for their active deliveries. One basic human need for motivation is autonomy, or the sense of control over the environment through freedom of choice (Ryan & Deci, 2000). Pragmatists believe that giving students choices promotes democratic ideals (Ozmon, 2012).

During the six-week intervention period, I recorded field notes. Field notes are written accounts of what the researcher sees, hears, and feels. They also assist in coding data and reflecting on the data (Fraenkel, Hyun, & Wallen, 2015).

Post-tests were administered to determine what impact the intervention had on students' critical thinking skills. Finally, a teacher-made Likert scale survey large group interviews helped identify students' opinions about kinesthetic learning in regards to critical thinking skills. Altun's (2015) study included surveys in his study, but they were open ended. Braniff (2011) analyzed her finding through qualitative methods such as observational notes, student journals, and open-ended surveys, which revealed her child-centered teaching philosophy. Although allowing themes to emerge from data is important in action research, the present action research also searched for particular findings from quantitative data collection, specifically, if task relevant movement had an

impact on critical thinking skills shown on summative tests. Students also shared their feelings toward kinesthetic learning as it related to their learning in Likert scale surveys after the intervention for quicker tabulation and analysis. "The last thing you want to happen is that your action research project begins to take time away from your regular teaching duties" (Mertler, 2014, p. 58). Voluntary large group interviews were conducted in both classes after the intervention to glean more authentic opinions about the experience of the kinesthetic participation.

The action research model recognizes local and particular variables. Therefore, the methodology and conclusions may be different from past research that focused on generalized conclusions. Despite the present research focusing on a learner-centered curriculum ideology, the theoretical base of pragmatism will allow flexibility to gather information in a ways that work within the parameters of action research in the particular setting and situation.

Theoretical Support for Methodology

Social Reconstruction is an important theoretical element supporting action research. Teachers have the responsibility to educate themselves about the rationale that dictates the methods they practice, and to challenge the status quo mentality. The notion of action research emerged in Freire's (2013) writing.

> The methodology proposed requires that the investigators and the people (who would normally be considered objects of that investigation) should act as co-investigators. The more active an attitude men take in regard to the exploration of their thematics, the more they deepen their critical awareness of reality. (p.163)

The present research was also be rooted in pragmatism, a theoretical base that focuses on

what methods work in research. Encouraging practical ways to answer pressing epistemological questions is a way to promote more inspiration in the research field of social sciences (Morgan, n.d.) "Pragmatics prefer flexible educational methods that can be used in various ways" (Ozmon, 2012, p. 133). Traditional ideas and methods, according to pragmatics like Dewey (1938), can be implemented without relinquishing one's ideological view. Rather, it allows a more pragmatic and diverse dialogue about research and knowledge (Dewey, 1938). This action research employed a methodology that did not conform to traditional action research design practices, but for pragmatics "using qualitative or quantitative data broadens the approach to social science research" (Morgan, n.d.,p.73). In short, qualitative action research should not be the only design educators investigate when studying educational phenomena.

Montessori (1967) understood movement and higher functions to be connected and that mental development depends not simply on movement, but movement that "*is connected with the mental activity going on*" (p. 142). She was a proponent for guided freedom, not excessive freedom and believed that the role of the teacher is to ensure activities are relevant to their education (1967). A teacher's responsibility is to help students' use their talents to help them learn. Lancaster and Rikard (2015) found that middle school students were able to transfer abstract knowledge into more concrete knowledge thought movement. Students learned more about geometric shapes by conducting moving tessellations and found the student feedback was overwhelmingly positive. Montessori incorporated embodied action with the use of command cards, cards that had written commands whereas students were to act out.

The following section will describe literature that explores the effects of sedentary

behavior, benefits of kinesthetic learning, the different models that incorporate movement, and engagement. The selected research studies were much larger in scope and the resources were outside what the teacher-researcher has for the present action research. Further, most collected empirical studies were mostly quantitative, and did not follow with attitudinal surveys. Also, not all the research dealt with students or students in the sixth-grade. However, each study in the following section added value to the current study, particularly the basis to ground the basis for studying a possible relationship between critical thinking skills and cognition.

Effects of Being Sedentary

There are more available studies that examine the effects of movement than there are studies that examine the effects of sedentary behavior (Hamilton, Hamilton, & Zderic, 2007). It is more ethical to ask participants to be involved in a healthy endeavor and test the health and its effects on achievement. Nevertheless, the studies on sedentary lifestyle are important in order for people and organizations to have a strong working body of research when speaking about the correlation of sedentary behavior and negative effects (2007).

Studies have shown that sedentary learning from mainly traditional learning methods do not engage critical thinking and negatively impacts students' attitudes toward academics. A lack of movement impedes older learners from making connections that allow them to develop more advanced knowledge (Dewey, 1938). Richards (2012), Stevens (2015), June , Yaacob, and Kheng (2014), and Mobley and Fisher (2014) all found that college students understood complex material while incorporating movement in their studies.

Lister (2005) found that sixth-grade social studies students who struggled academically did not perform well on a unit focusing on Judaism and Christianity when teaching methods such as lecture, discussion and worksheets were the main instruments of teaching. Further, the analysis showed the same students were less motivated to learn. Educators need to carefully consider the implications of their instructional methods particularly when teaching students who not only struggle with academic achievement, but who also have a negative view or low self efficacy toward their academic career.

Stupiansky, (2009) found that there was a correlation between in-school movement and out of school movement and that an excessive sedentary lifestyle translates to a host of negative health issues, including those related to cognitive functions. Hamilton, Hamilton, & Zderic's (2007) study concluded that there are biochemical effects of sitting too much, and "any type of brief, yet frequent, movement throughout the day may be necessary to short circuit unhealthy molecular signals" (p. 2655). Fromel et al. (2015) studied how students were affected by physically active lessons versus longer recess times. The study found that the regular physically active lessons throughout the day versus a longer active recess time that had a stronger "effect on physically active lifestyle in boys and girls" (p. 149) and positively influenced children's mental health. In short, regular physical activity throughout the school day is irreplaceable for adolescents (2015).

Effects of Being Physically Active

Large studies have utilized extensive resources to research the effects of school based physical activity on, among other markers, cognition and academic performance. The Centers of Disease Control and Prevention (CDC) (2010) conducted a meta-analysis

of 43 studies that spanned 23 years of research, the majority were longitudinal, from 1985 to 2008, focusing on children from five to eighteen years old. Researchers found substantial evidence that physical activity can help improve academic achievement, including aptitude, memory, attention, attitudes, reading literacy and math fluency scores, grades and standardized test scores. Nine studies, in particular, explored in-class physical activity and the study reported eight of the nine studies found positive implications of physical activity and cognition and none found negative associations.

The CDC (2010) found that classroom teachers could incorporate activity breaks into the classroom setting to improve student performance. Interventions include walking around the perimeter of the room while learning vocabulary, using music or rhythmic movement to enhance memory. Teachers do not need intensive training and little or no special equipment or resources are needed. The researchers also stated that schools should provide a significant part of students' daily physical activity (2010). A limitation of the study was that all the studies were weighted the same regardless of individual strengths and weaknesses, research designs, and sample sizes. Although the present action research does not have the same resources as the CDC, the review offered a comprehensive review of relevant studies that will be useful to the present action research.

Gallagher and Lindgren (2015) reviewed recent empirical studies and concluded active learning helps people understand the world. The goals of the review article were to compare enactive cognition, particularly acting out metaphors, with sedentary teaching methods, and to describe how whole-body engagement improved learning in various disciplines. The article offered creative and useful ideas of incorporating kinesthetic

teaching strategies for the present dissertation in practice, although Gallagher and Lindgren's (2015) study focused on enacting metaphors in a literature class. The researchers credited Dewey as inspiring the enactivist movement. "It is the movement which is primary, and the sensation which is secondary, the movement of body, head, and eye muscles determining the quality of what is experienced" (as cited in Gallaher and Lingren, 2015, p. 393).

Richards (2012) conducted a retrospective statistical analysis at the University of Pittsburgh, using a kinesthetic learning activity (KLA) to help teach undergraduate students about Ptolemaic and Copernican retrograde motion. In other words, undergraduate students used task-relevant movement when learning about planetary motions. The study compared the academic achievement of students who were exposed to KLA with students who did not participate. Richards (2012) found those who did participate in KLA performed substantially better on their unit exams than the students in the control group who did not utilize kinesthetic learning. One explanation was that students in the experiment group were simultaneously learning the logistics and physically experiencing the phenomenon of planetary movements (2012). This is significant research because, as Richards noted, most KLA are designed for elementary and secondary students.

Stevens (2015), a college professor, studied the effects of role-playing. Role-playing will be incorporated with the kinesthetic intervention in the present action research. Such active learning helps students develop "deeper understanding of course content. . . . [and] encourages students to ask questions, identify subtexts and detect prejudices, which are central to thinking analytically" (pp.481-482). Relevant to the

present action research, the physical involvement of role-playing is certainly active, engaging, and encourages empathy and agency.

Lozado and Carro (2016) studied the effects of embodied action on the cognitive understanding of first-graders using Piagetian conservation tasks such as mass and liquid quantity. The achievement of the control group (47 children) was compared to a group (58 children) who simply observed an adult demonstrating the tasks. The researchers found positive effects of tactile learning on the cognitive understanding. The present action research is similar in that students will act on specific subject related concepts, although the student-participants will be older the discipline will be different and cooperative group kinesthetic movement will be utilized.

Kinesthetic Learning Models

Should children move within classrooms, the movement may be inconsequential. Teachers who incorporate cooperative group learning may allow movement by having students move to other desks, or simply shift their desks to sit close to one another. Educators may offer what is known as brain breaks where children periodically stretch or perform jumping jacks for a brief stint to get the "wiggles out" in order to return to sitting still and focus on the teacher or sedentary tasks. The present action research, however, will have students out of their seats and dramatize in order to physically engage with the content and engage with each other. The following studies describe different active teaching methods.

Braniff (2011) conducted an action research study with her fourth grade class. Her focus was to incorporate movement to, among other things, improve her students' attitudes and learning. A major part of her procedures was incorporating 3-5 minutes of

exercises, which included jumping jacks, jogging, jumping, which are part of an organized program called Energizers. The present action research will incorporate relevant whole body movement, not subject irrelevant movement within two sixth-grade social studies classes.

Stewart, Dennison, Kohl, and Doyle (2004) incorporated a classroom based activity program called TAKE 10! in order determine if class time activity translated to more outside of class activity. The TAKE 10! program provided teachers with grade specific, 10-minute physical activities linked to curriculum objectives. The sample size was 71 students from three elementary grade classes. The researchers found classroom teachers could incorporate movement activities with little or no preparation, special equipment, or resources. Interventions can be as simple as walking around the perimeter of the classroom while learning vocabulary or using music and rhythmic movement to enhance memory. The teachers, in general, found that integrating physical movement within academic curriculum easy to do (2004), thus benefitting all the active participants in the study. The TAKE 10! Program is closer to what will be incorporated, but the present research action study will focus on engagement and higher level thinking skills, not if physical activity inside the classroom causes physical activity outside the classroom.

Gallagher and Lindgren (2015) reviewed empirical evidence showing that movement was important for learning. The goals of the review article were to describe enactive cognition, or acting out metaphors in a literature class, compare it with sedentary teaching methods, and describe how whole-body engagement that was connected with enactive metaphors improved learning in various disciplines. The researchers described

enactive metaphors in educational settings and concluded how being active in ways such as role-playing and object-substitution helps people understand the world. The article was very relevant to the teacher-researcher because it offers creative ideas for incorporating kinesthetic intervention and inspires a deeper research into dramatic play.

Schulte (2005) explored a kinesthetic approach called Total Physical Response (TPR), an active learning strategy. Asher (1966) created the technique whereby verbal commands are acted out by participants. A teacher commands a task and the students act out the tasks. The particular intervention is mainly used in foreign language classes, but will be adapted for the present action research. In the article, *Social Studies in Motion: Learning with the Whole Person* (2005), Schulte offered adaptable TPR strategies for various disciplines including social studies.

Chandler and Tricot (2015), reviewed the contributions for the journal, *Educational Psychology Review*. The writers specifically defined and explored embodied cognition by reviewing a commentary, theoretical papers, and intervention studies conducted with young children up to the age of 11. The article supported the notion that part- and whole-body movement is positively associated with the development of cognition and learning (2015). This was another specific source detailing possible ideas to incorporate in the teacher-researcher's action research's foundation.

Embodied learning recognizes the intimate connection between the body and the mind. The studies that focus on embodiment help explain what was once reduced to a gut feeling. (Enriquez, Johnson, Kontovourki, & Mallozzi, 2016). When students are acting, their bodies and minds are active on different levels. The multimodal pedagogy has students interacting with themselves, peers, and the content. In role-playing, students

have the power to make meaning of the information, explore peers' emotions and their own emotions, and shift their identities. The physical dramas the students performed allowed for improvisations and heightened their "affective intensities" (p. 14). Furthermore, students acquire more space in the classroom, which is empowering for marginalized students or those who have become comfortable in a schooled body (p. 23), one that is disciplined and docile.

Engagement

Ryan and Deci (2000) explain human motivation through Self-Determination Theory, which highlights three basic needs that drive internal motivation: autonomy, competency, and relatedness. Humans have a desire to make choices, move forward in their learning, and give great effort in and commitment to learning. Despite the human propensity to embrace such characteristics, Ryan and Deci (2000) acknowledge that many students are devoid of such positive characteristics when forced to "stare blankly from the back of their classrooms" (p. 68). The authors state that people are motivated to act either because they value an action or they are coerced. Those who value an activity perform at a high level, have more tenacity, and are more creative (2000). Their research suggests that classroom social environments that offer students choice, differentiation, and belonging can increase "development, performance, and well-being" (2000). In the spirit of engaging critical thinking skills in a motivational way, the present action research offers students choices and differentiation.

According to Gee (2000) wealth and power arise from access to networks of people and experiences related to the particular networks. This is called affinity identity where one belongs to a large supportive group. How can educators ensure students have

the opportunities to succeed in what Gee describes as the new capitalism? In laymen's' terms, how can we teach children to network successfully? Students need to be socially engaged, to know how to navigate relationships, negotiate conflict, share success, and make their presence be known. There is a global influence on the vulnerable communities due to their lack of mobility. It is worrisome to Gee that institutions place identity markers on the marginalized. According to Gee, when the marginalized make their own spaces and identities and create new forms of discourse, they will not be left behind in society.

My action research hinged on student engagement. Engagement is viewed in multifaceted ways, including behavior, emotion, and cognition (Fredricks et al., 2004). Students who are behaviorally engaged are involved in social and academic activities and display high academic outcomes (2004). Students who are emotionally engaged show a higher willingness to do academic work due to positive reactions to peers and academics (2004). Those who are cognitively engaged are willing to expend energy to "comprehend complex ideas" (p. 60). Fredericks (2004) states that in-class engagement can transfer outside the classroom. The more engaged students are in class, the effect can be far reaching. "Routes to students engagement may be social or academic and may stem from opportunities in the school or classroom for participation, interpersonal relationships, and intellectual endeavors" (p. 61). Throughout the six-week intervention, I observed how cooperative dramatic play affects students' behavior and expressed emotions. The dramas and the pretest and posttests will help determine if critical thinking skills are engaged.

Marks' (2000) researched student engagement. Engagement is defined as the students having interests, attention and effort to do the work. In this way, engagement

includes “both affective and behavioral participation in the learning experience” (p. 155) Marks found that socialization helps students learn to concentrate on tasks and that “cognitively challenging tasks and verbal interactions around (social) activities promote . . . intellectual development” (p. 155).

Theoretical Framework

An important part of a literature review involves explaining frameworks that support the rationale of the study. The importance of finding research with similar conceptual frameworks helps with such justification.

A pragmatic theoretical base will help ground the present action research study. Pragmatism has its roots in ancient Greek philosophy and continues to influence educational theory (Ozmon, 2012). Pragmatists are concerned with means that work to achieve desired ends. Thinkers from the Scientific Revolution and Enlightenment not only popularized pragmatism into a formal philosophy (Ozmon, 2012), but also supported active learning (Willis, 2009).

The influential eighteenth century philosopher, Rousseau, believed students’ senses should not be restrained. His 1762 book, *Emile*, influenced pragmatism, and stressed the association between nature and experience (Willis, 2009). Within pragmatism, aesthetic development gained traction, which underscored the notion that education should help unify the acts of thinking and doing, bringing mind and body together (Ozmon, 2012).

Pragmatism influenced the Progressive movement, which became popular in America during the late nineteenth and late twentieth centuries. John Dewey (1938) believed that education “renews people so that they can face the problems encountered

through their interaction with the environment" (Ozmon, 2012, p. 131). Dewey established an experimental school at the University of Chicago where experiential education ensued. For progressives, students attain the best possible education when productive experiences are offered. The process of education has a psychological and sociological side and Dewey supported the idea of an active learning environment, claiming "that conscious states tend to project themselves in action" (Dewey, 1938, p.38). The involvement of role-playing, even in college classrooms, promotes autonomy, intellectual engagement, empathy, and agency (Lazado & Carro, 2016; Shapiro & Leopold, 2012; Stevens, 2015). Gallagher and Lindgren (2015) specifically credit Dewey as inspiring the enactivist movement and conclude active learning (enactive) such as role-playing helps people understand the world.

Like Dewey, Maria Montessori, an Italian physician-educator, formed her own model school in the early 20th century. The principles of the Montessori model school are based on a child-centered approach where students discover knowledge through their own interests and choices (Flinders & Thornton, 2013). Direct teacher instruction and desks are downplayed. Montessori gave a lengthy description of the evolution of desks and her opinions regarding them. She likened children in desks to "butterflies mounted on pins . . . fastened each to his place, the desk." (2013, p. 25). With this in mind, the present action research will take heed of Montessori's thought about desks and encourage more out of seat movement. In their article, *Ditching the Desks: Kinesthetic Learning in College Classrooms,* Mobley and Fisher (2014), describe many kinesthetic activities for college social science professors to incorporate in their lessons because they argue, students engage more fully with the material and with each other.

Maxine Greene (1978), an aesthetic and pragmatist, stated people are meant to give meaning to the world (Flinders & Thornton, 2013). By being actively engaged with educational material, pragmatists believe there is a deep understanding of the material that actually changes the person (1978). If curriculum is external to the learner, void of relevance, there is no meaning. Whole body engagement like acting out concepts improves learning in various disciplines (Gallagher & Lindren, 2015). According to Greene (1978), students only learn when they are committed to act upon their world. "If he is content to admire it or simply accept it as a given…he will remain alienated from himself and his own possibilities" (Flinders & Thornton, 2013, p. 136). Educators are to be humane and allow students freedom in their education (2013), which helps provide the rationale for the teacher-researcher to have students choose their own relative kinesthetic formative assessment.

Social Reconstructionism is another concept that will support the present study. This philosophy suggests knowledge is not passively received, rather, "[i]t comes into existence when someone actively impresses meaning on sensory data" (Schiro, 2013, p. 190). Students are both affected by their surroundings and are responsible for creating their surroundings. Recognizing and encouraging this reciprocal interaction is key for both Learner Centered and Social Reconstructionist ideologies. Students bring with them their own interpretations of and interactions with knowledge (Schrio, 2013). Gallagher and Lindgren (2015) reviewed empirical studies and concluded that enactive learning shapes the way they experience that world around them and how they interact with others. In their study, they specifically focused on enacting metaphors, but their aim was to underscore the importance of the enactivist approach, in general, within education.

Also relevant to Social Reconstructionists is how social justice is bolstered by what and how students learn. In other words, children will conceptualize what is taught in school and act accordingly outside of school. Jarrett and Waite-Stupiansky (2009) state that children who move during the school day are likely to move more after school. Thus, by encouraging students to be more active throughout the school day, Social Reconstructionists hope students would take the habit of movement outside of school and reap any correlated benefits for themselves and for the betterment of society, as its citizens would embrace a healthier lifestyle.

Constructivists assert students are not passive learners (Ozman, 2012). Piaget (1965) believed play and learning are linked, and students naturally learn by constructing and reconstructing knowledge, usually through physical activities (Dowling, 2012). Active learning within a supportive environment creates new awareness and encourages critical thinking (Piaget, 1965). Lozada and Carro (2016) conducted research that focused on embodied cognition, which is knowledge obtained through enaction or experiential processes. Children who were actively engaged recognized "quantity invariance" (p.1) better than those children who merely observed teachers demonstrate conservation tasks. This supports the notion that the act of doing enhances that act of knowing.

Piaget influenced Vygotsky (1978), who contributed to education by studying scaffolding. Vygotsky developed the Social Constructivist theory where children receive cognitive development from nature and through personal experience (Ozmon, 2012).

Historical Context

Knowing the history of challenges within the educational field is imperative. In *Experience and Education*, Dewey (1938) warned readers that social dysfunctions have a

long history. Should educators try to resolve them at a superficial level, those dysfunctions will only be exacerbated. Therefore, the literature review will help the teacher-researcher understand the complexities of problem of practice and what other researchers have studied and have concluded. Looking at research through a historical lens will offer a comprehensive knowledge of the problem.

The idea of "learning by doing" has its roots in ancient Greek philosophy. The Greek term *praxis* supports the merging of action and thought (Ozmon, 2012). Yet, a pervasive sedentary style of learning persists in American public schools.

Descartes, a seventeenth century philosopher put forth a doctrine of dualism, which proposed the mind and body were separate from each other, rejecting the idea that nature is a medium through which philosophical ideas could emerge (Dowling, 2012). In other words, Descartes believed that the mind and body did not work together, but as scientific knowledge advanced, the notion of dualism lost its popularity (2012).

The term *learning styles* indicates which type of instruction is most preferred and beneficial for individuals (Dunn & Dunn, 2005). The study of different learning styles can be traced to Locke, another seventeenth century philosopher, who believed the main vehicle of learning was through the five senses (Ozmon, 2012). Learning styles, sometimes referred as learning modalities, are categorized into visual, auditory, and kinesthetic realms. Visual learners prefer to see information; auditory learners like to hear information; and kinesthetic learners prefer to be physically engaged or active in their learning. Rousseau (1979) paid attention to psychomotor learning, and his view on learning eventually influenced educational philosophers like Dewey and Montessori (Ozmon, 2012).

As the American public school formed and evolved, however, teaching practices kept students sedentary in order to efficiently relay required information (Basch, 2010; Benes, Fin, Sullivan, & Yon, 2016; Jennings & Retner, 2006; SHAPE America, 2016; Spring, 2014; Stewart, Dennison, Kohl, & Doyle (2004).

American public education has a long history rooted in authoritative beliefs, curriculum, and practices (Spring, 2014). British colonists who settled in North America in the seventeenth century established public schools and total obedience was to be given to those in control and their agendas (2014). Freedom of thought was not offered to children. The Protestant Reformation stressed the importance of a Bible literate society and thus, school textbooks had authoritative context incorporating words such as honor, obey, fear, and submit (2014). "Students were not asked to analyze and give their opinions . . . they were taught to accept official interpretations as correct" (p.19). Individual critical thinking and expression were not important and as a result, critical thinking in terms of analyzing and creating new knowledge was not valued.

The notion of dominating students for their own good continues to persist as is witnessed in the popular sedentary teaching strategies used today where children are expected to sit still for long periods of time, with up to potentially 6 hours a day of sedentary behavior (Benes, Fin, Sullivan, & Yon, 2016). The end goal is to learn copious amounts of information that will appear on standardized tests. Bass, Brown, Laurson & Coleman's (2013) study's goal was to determine if there was a connection between physical fitness and academic achievement in middle school students. The researchers found two main factors that contribute to a decrease in physical activity within schools. The first is the lack of resources many schools have. The second factor is that if schools

do have funds, they are pressured to perform well on standardized tests, and therefore the focus and resources go to preparing for academic tests.

In the eighteenth century, new ideas about childhood and learning began to emerge (Spring, 2014). The protagonist of Rousseau's book, *Emile*, learned through experience and discovery, not direct instruction. The book's popularity quickly resonated in some social circles and resulted in progressive movements within the educational field, but the Learner Centered curriculum model would not gain as much traction as Essentialism and Social Efficiency curriculum theories (2014), where the students' inherent goals are dismissed (Schiro, 2013). The theories explained below intersect with historic educational and political agendas that have played part in the evolution of the problem of practice.

Essentialism is a theoretical orientation that is reflected in classrooms where instructors have great control over the students and where students sit passively. Academic scholars, large businesses that desire a ready working force, or governments, may outline essential knowledge (Schiro, 2013). Essentialist learning theorists believe a common core of knowledge should be imparted upon students and it must be done in a structured manner. The focus for Essentialists is the cognitive domain, where students are to be receptacles of knowledge (Ozman, 2012).

Social efficiency is an ideology that asserts teachers and students are not to interpret the required curriculum and a learner's actions and reactions are managed through the curriculum developer, the behavior engineer (Schiro, 2013). Outside economic and social factors are not relevant in shaping students' reactions. For Bobbitt (2013), educators and schools are to be contractors who follow specific orders from the

client, be it a business or government. Students who are sitting are expected to passively receive required information from their teachers rather than critically think for themselves. Davies (2003) states that individuals are not a social construction that results in some relatively fixed end product" (as cited in Enriquez, 2016, p. 90).

Students must follow the teacher's mind, "who, in turn, is urged on by a program drawn up at random, and which is certainly regardless of childish tendencies" (Montessori, 1965, pp. 269-270). Sedentary learning is an efficient model of teaching in order to impart standardized information. High stakes tests compel teachers "to use more lecture-based, teacher-centered pedagogies" (Au, 2013, p. 246).

In the early nineteenth century, Noah Webster, known as the "Schoolmaster of America", drafted uniform textbooks to help shape education (Spring, 2014). He was selling an educational goal where children were to "memorize questions and answers which perpetuated an authoritarian method of instruction." (p.51). Children were not to critically think for themselves. Rather, they were to adopt the ideals of others and learn the knowledge dictated by scientific curriculum experts.

During the turn of the nineteenth century, the Lancasterian factory-like system of education was gaining popularity (Spring, 2014). It focused on students' moral character, memorization and recitation of didactic readings (2014). Lancaster was so good at selling his ideas, "he had contracted with the New York Free School Society in which an experiment would be run to teach children how to read and spell accurately in four to six weeks" (p. 63).

In the early twentieth century, progressive education and the notion of child inquiry and freedom started to gain popularity. Dewey (1938), a progressive educator

whose work is still relevant today, focused his educational methods around democracy and a notion of learning by doing. He established a working school at the University of Chicago where freedom and creativity were cornerstones (Spring, 2014). Immobilizing students keeps teachers from truly knowing their students' knowledge and creativity (Dewey, 1938). "Physical quiescence puts a tremendous premium upon . . . passivity and receptivity" (p. 62). Dewey believed by allowing a child to dramatize, the student understands the abstract better and the teacher is able to witness the comprehension more effectively (Dewey & Dewey, 1962). Acting aids teaching and allows history to become more real for students (1962).

Montessori, a progressive educator, opened a school in Rome, Italy, and to her credit, her child-centered methods are still used today in Montessori schools worldwide (Schiro, 2013). She was very disturbed by the concept of desks, scientific contraptions meant to keep children fastened to their seats because movement was inextricably linked to intelligence. She believed movement helped develop children's intelligence.

Educators advance the field of education by drafting various learning taxonomies and models that include a kinesthetic domain. Bloom's (1956) taxonomy delineated the characteristics of the three complex domains including the cognitive, affective, and kinesthetic or psychomotor domain. Kolb (1984) defined active experimentation with learning styles. He described an active processor as one who prefers working in groups and experimenting with information rather than being passive, such as staying seated while listening to a lecture. Drake's (2012) 'know, do, be' model of integrated curriculum embraces inquiry and communication under the 'do' segment of her umbrella design. This part of the design implements various psychomotor elements into curricula.

In 1983, the National Commission on Excellence in Education published *A Nation at Risk* and the American public was again alerted to the abysmal state of its education (Schiro, 2013). There would be devastating implications for the country based how badly American students performed on standardized tests compared to students from other countries. The future of America was in a precarious situation through no fault of the government or industry, but because of "progressive education" (2013).

In 2002, The No Child Left Behind Act (NCLB) was enacted for two reasons: One, to raise student academic achievement and two, to make teachers accountable for the academic achievement of the students (Jennings & Rentner, 2006). Although NCLB has been dismantled, schools continue to feel the ongoing pressure of standardized tests. More resources are reallocated from physical education and activity programs toward standardized test preparation (Jennings & Retner, 2006; SHAPE America, 2016). In 2015, President Obama signed into law the Every Student Succeeds Act (ESSA). This law requires schools to administer high stakes tests in reading, math, and science, and publicly present their achievement on a state report card (Fennell, 2016; Jennings & Rentner, 2006). Because classes outside the core classes are not required to implement standards, the curriculum focus and pace centered on the core classes, leaving little attention on active engagement for children during the school day.

Although the topic of learning styles is popular, detractors claim there has been scant experimental methodology to test the "validity of learning styles applied to education" (Pashler, McDaniel, Rohrer, & Bjork, 2009, p. 105). The main argument asserts spending time and resources assessing and catering to students' learning styles is unjustifiable when there is no empirical proof that learning styles are a biologically brain-

based inclination (Cuevas, 2015). However, education is improved when it focuses on rich experiences and activities for learners (Pashler et al., 2009). The overall consensus is that quality teachers should vary their instructional methods and allow strategies to evolve through time, though educators should scrutinize those methods that have no empirical evidence. This action research will not support or refute allocating resources for learning style assessments. Rather, the study will build upon frameworks that support active, topic-relevant kinesthetic movement in the classroom to engage students in social studies better, and to investigate the impact between kinesthetic learning and critical thinking skills. However, it is important to understand the arguments for instruction that may be viewed as a waste of time. When the action research is presented to administrators, colleagues, parents and students, it will be necessary to understand concerns and be ready to discuss them.

Conclusion

After reviewing the literature, there is potential to promote critical thinking by incorporating kinesthetic applications via task-relevant part- or whole-body movement within the classroom. The general trend in the research findings is physical movement positively impacts student learning. A significant challenge was finding studies that were similar to the proposed study, but the focus is not to generalize. Instead, the focus is to help the teacher-researcher become a more informed, better educator. The bulk of research for this literature review is scientific in design, usually with very large samples, and substantial resources. Nevertheless, ideas were gleaned by empirical studies.

The teacher-researcher will ensure that students are aware of the expectations and the respect the class requires for the class to be a safe place. Furthermore, the teacher-

researcher will also create a Likert scale survey. The teacher-researcher developed unique age-appropriate and adaptable kinesthetic-cognitive activities for the six-week intervention. The student-participants will have freedom in choosing their own enactive portrayals.

A traditional teaching method widely practiced today is to expect students to sit still for long periods of time, with up to potentially 6 hours a day of sedentary behavior (Benes, Fin, Sullivan, & Yon, 2016). Such excessive sedentary behavior results in long-lasting adverse consequences for engagement, educational achievement, cognition, and overall health (Hamilton et al., 2007; Hancox, Milne, & Poulton, 2005; Mahar et al., 2006; Wigal et al., 2013).

The social studies discipline and curricula require higher-level critical thinking, which includes analysis and creativity. The National Council for the Social Studies (NCSS) (n.d.) claims the social sciences curricula advocate ideals such as freedom and social justice. In a social studies class, students should develop an appreciation of multiculturalism, interact with diversity and change, engage in interpersonal communication, recognize the effects of the various interpretations of historical events, and recognize the benefits of a common good through democratic freedoms and responsibilities (NCSS, n.d.). It is through the diverse and creative learning strategy of kinesthetic learning that the critical thinking skills required by the social sciences may have a better chance of being realized by student

CHAPTER 3

METHODOLOGY

Introduction

Chapter 3 will describe the collection, analyzing, and reflecting on the action research data. The data will center on the problem of practice. The purpose of this study is to determine the effects of kinesthetic learning activities have on a social studies curriculum and students' critical thinking skills. Both regular teaching and action research are interested in best teaching practices. Action research, however, differs from regular teaching in that action research is a formal, intentional, analytical, and systematic inquiry revolving around a research question (Mertler, 2014). Studying the data will assist in reflecting on the problem of practice and intervention, both of which are embedded in the research question: What ways do kinesthetic learning strategies engage critical thinking skills in a sixth-grade social studies class?

Purpose of Study

The purpose of this study is to determine if by including kinesthetic activities to a social studies curriculum, critical thinking skills are enhanced. The educational significance of critical thinking and active learning is that a democratic society expects its citizens to think critically; to be engaged, self-evaluative, logical, and creative.

Sixth grade is a special time of educational transition for children. In 1989, The

Carnegie Council on Adolescent Development outlined specific characteristics of middle school, two of which are the development of both the cognitive and affective domain and the focus on experiential approaches (Powell, 2015). Between the ages of 10 and 14, middle schoolers balance between thinking concretely and abstractly (2015). Piaget (1965) asserted that at the end of the concrete learning stage, students begin to develop the ability to engage in abstract thinking skills, which include critical thinking. Middle schoolers have "vivid imaginations that can be linked to concepts as abstract thinking develops" (Powell, 2015, p. 33). The sixth-grade students are at the cusp of this development stage and it is important for teachers to incorporate a multi-model approach to help develop students' abstract and critical thinking skills. Therefore, the action research will focus on the effect kinesthetic learning instruction has on critical thinking skills of sixth-graders in a social studies classroom.

Statement of Problem

The problem of practice of this action research is the lack of sixth-grade students' critical thinking skills. When faced with forming and defending opinions, and evaluating and analyzing primary and secondary sources, the students struggle. Despite studies showing movement and cognition being linked, a "sit and git" practice has become commonplace in schools to secure standardized test outcomes. Students are expected to remain sedentary in order to quickly and efficiently absorb information found on mandated assessments. A teaching career demands a faithful attempt to encourage students to embrace healthy social and academic lifestyles and a love of learning. Yet, students experience a stationary school lifestyle devoid of autonomy, agency, active social engagement, characteristics that are vital for lifelong critical and creative thinking.

Action Research Design

Action research is performed by anyone who is involved with a given school and interested in improving teaching and learning (Mertler, 2014). Such research does not try to generalize or prove anything the way that traditional research does. Action research allows educators to examine and improve their pedagogy while they are teaching. Constant reflection and refinement of the research takes place. The current project used Mertler's (2014) four-stage action research framework of planning, acting, developing, and reflecting. The specificity of the framework acted as protocols for data collection. The methods of action research are descriptive and therefore this study describes the local treatment, the impact of the treatment once the intervention occurred, and the collected results.

Research Site

The teacher-researcher is a social studies educator at a middle school in a suburb with a population of 40,370, and a median household income of $62,107 (U.S. Census Bureau, 2014). In the realm of education, 91.5% of those 25 and older has a high school diploma and 23% has a bachelor's degree (2014). The town includes 76.3% Caucasian, 15.4% African American, 3.7% Hispanic or Latino, and 3.6% Asian-American (2014). Ten percent of the city lives in poverty (2014).

Participants

This action research took place in a middle school in a suburb in the southeast United States. According to the school's report card (South Carolina State Report Card, 2015), the student population totals 843 students, of which 59% is White, 22% is Black, 9% is Hispanic, 2% is Asian, and 8% identified as Other. Forty-nine percent of students

receive free and reduced lunch (2015). The school's socioeconomic status reflects the nation's, where, according to the Annie E. Casey Foundation (2014), almost half the U.S. children grows up in low-income households. South Carolina fares worse with persistently high unemployment rates and lingering economic recession, which take their toll on children (Kids Count, 2015).

The sixth grade has three cooperative teams of four core teachers: English language arts, math, science and social studies. Each team shares approximately 100 students. The teacher-researcher teaches four, 65-minute block classes of sixth-grade social studies. Each class has approximately 25 students. The research sample reflected a variety of students: gifted, regular education, special education. My classes are not tracked; therefore there is a mix of cognitive ability students in each class and I decided not to incorporate data showing gifted and talented identified or standardized test levels. For the research project, I decided to cast a wider net by including two classes. My first block class consisted of 21 students of which there were nine boys and twelve girls. Three students were African American and three spoke English as their second language. My second block class consisted of 28 students of which 14 were boys and 14 were girls. Three students were African American and one student spoke English as a second language.

Planning

During the planning stage, I identified the problem of practice by first noticing how behaviorist and essentialist tendencies were reflected in teaching practices. At the beginning of the school year, faculty discussions reinforce the importance of standardized tests. Students who attain high grade point averages receive extrinsic rewards such as

special tokens like homework passes and extra credit. Extrinsic rewards and consequences are the foundation of the behaviorist philosophy. Behaviorist psychological theory explains how traits such as personality and integrity develop through conditioning (Ozman, 2012). *Conditioning* is a way behavior can be manipulated through a series of rewards and punishments. Students who do not perform at the expected level on mandated tests have relinquished enrichment classes such as band or physical education, a time for physical and social activity, from their school day to be drilled with sample test questions, focusing on factual information, which resemble essentialist training. Students have sacrificed the school wide 20-minute silent sustained reading (aka: drop everything and read) to receive focused test preparation known as Response to Intervention (RTI). The teaching strategies for the action research encouraged students to take a more active and independent learning role.

After recognizing a problem of practice and investigating related literature, the research question was refined: In what ways do kinesthetic learning strategies engage critical thinking skills in a sixth-grade social studies class?

The next portion of the planning stage was to develop a research plan that included crafting the design, and deciding the data type and method of data collection. The mixed methods study incorporated closed ended surveys, pretest posttests, as well as field notes and interviews. Action research lends itself well to a mixed methods approach (Mertler, 2014), while keeping the design of the "research study within [my] personal research skill level" (Mertler, 2014, p. 58). While the action research needed to balance the constraints of the graduate program with the real world responsibilities within the classroom (Dana & Yendol-Hoppey, 2014), I felt it was prudent to include field notes and

interviews to add to depth to the research and give more voice to my students. The pragmatic paradigm supports data collection that works. Pinar (2013) warned of intolerance and exclusivity of ideologies. Thus, the decision to use a mixed-methods methodology was justified.

Acting

Data collection. The acting stage of the action research includes collecting and studying the quantitative and qualitative data. Students answered a multiple choice survey question before the six-week intervention about their preferred learning styles. Multiple academic units were studied during the six-week time frame therefore, two pretests and two posttests were administered. The questions were the same on both tests. The assessment instrument was teacher-made, which is common for action research (Fraenkel et al., 2015) and required higher level thinking skills where students needed to interpret and draw conclusions. Questions required analyzing motives, determining relationships, making judgments, and understanding cause and effect scenarios. I collected field notes for both classes attempting to record and code what I saw and heard. A Likert-type scale survey was given after the project to gauge student perception to the intervention. After administering the pre-test, the teacher researcher developed and incorporated daily six-week intervention, which included subject-relevant kinesthetic learning such as gestures, charades, and role-playing. I used formative assessments by observing students working collaboratively to enact historical events, people, and concepts. Total Physical Response was adapted whereby the teacher-researcher supplied a scenario and students responded by creatively dramatizing the applicable concepts, events, and people. Pragmatics assert that students should have choices and decision-making opportunities in schools that

promote democratic ideals (Ozmon, 2012). Students were required to justify how their movements applied to the applicable subject. These formative assessments showed students' progress before more formal tests are taken (Chapman & King, 2012): "Assessments during learning provide opportunities to infuse monitoring and adjusting for intervention as a need emerges" (p. 83).

Each week for the six-week intervention, there was a particular type of activity. During the first week, students played charades. The teacher called out historical characters or concepts that made the activity simple and quick so the students would adjusts to the different pedagogy. For the second week, students worked collaboratively in teams as historical events and I called out concepts for them to dramatize. This allowed students to become more comfortable dramatizing with classmates. The third week, students focused on analyzing consequences and recreated the historical events. When the teacher-researcher gave a variable that changed historical events, students collaborated on the possible consequences and created the modified version of the skit. With one or two changing variables, skits were dynamic. The fourth week, students role-played while physically dramatizing what people in history might have felt about decisions and events in history. The notion of empathy was at the forefront. The fifth week had students engaging in brief debates where teams had a set time to gather advantages and disadvantages of historical decisions. The last week had a mix of all the prior weeks' activities.

After implementing kinesthetic learning, a posttest was administered to help determine if there was a relationship between kinesthetic learning and critical thinking skills. There is a misconception that multiple-choice formatted tests only focus on basic

facts and recall (Green & Johnson, 2010). Tests contained interpretative questions and students interpreted passages. A teacher-made survey also gleaned students' attitudes about kinesthetic learning (Mertler, 2014). Braniff (2011) studied her students' journals, which contained both closed and open-ended questions. There may be a threat to internal validity due to a testing threat (2015), however the addition of qualititative data brought more depth and breadth to the action research.

As stated, critical thinking was measured and compared on the assessments. Educators who have training in teaching and testing higher-order thinking skills use fewer recall questions on teacher-made assessments than teachers without such training (King et al., 1998). Research has shown that adding animation "can increase students' performance on a subsequent problem-solving transfer test" (Goldman & Pelligrino, 2015, p. 37). After the post-tests were administered, students participated in a Likert scale survey as well as a large group interview to share their perceptions about kinesthetic learning.

Ethical considerations. To conduct formal action research with students, a special code of ethics was followed. The intent in conducting this research was to become more knowledgeable about students and their learning in what Mertler (2014) described as the principle of beneficence. The dissertation in practice related to regular teaching pedagogy, so this action research was not considered out of the ordinary in the classroom. Brief bouts of simple physical activity were seamlessly incorporated within classroom time (Stewart, Dennison, Kohl, & Doyle, 2004). Formal permission to move forward with the action research was obtained in various ways. The school district gave its approval and required that all students' identities remained anonymous in the study. The

school principal gave permission for the research. The Institutional Review Board approved the dissertation proposal. Students were not required to participate in anything outside normal classroom processes. Confidentiality was protected whereby names and detailed descriptions of the children not related to the study were not reported.

Developing

The developing stage is where researchers reflect on the intervention and outcomes and determine what changes in teaching methods might take place (Mertler, 2014). In this stage, data results are compiled, analyzed, and interpreted. Next, actionable steps are thoughtfully considered and mapped out into what is called an *action plan*.

Data analysis. The majority of the data analysis was through inductive analysis. This involved recording observations and interviews and later finding and interpreting overarching or reoccurring themes. Field notes also helped develop a holistic view of the study and helped the researcher reflect on the study while it was being conducted. A teacher-made Likert scale survey helped identify and analyze students' perceptions of kinesthetic learning.

Should kinesthetic teaching practices have a positive effect on the student-participants' critical thinking skills, there will be recommendations made concerning the more intentional and frequent incorporation of kinesthetic teaching methods. One way teachers should engage in reflective practice during action planning is to reconcile findings of the action research with ongoing professional development (Mertler, 2014).

Another way teacher-researchers should engage in reflective practice during action planning is to develop ways to adapt future teaching methods. This stage is where action or change becomes focused in action research. If it is found that kinesthetic

learning has a positive impact on critical thinking skills for participants, the teacher-researcher will start orchestrating when and how to incorporate more kinesthetic learning into all classes for the full year. The reflecting stage of the action research is where an action plan will be established. Its purpose is to increase the utility and effectiveness of teaching to improve students' critical thinking skills. Questions will likely surface, identifying any issues with the implementation of the variable, the kinesthetic teaching practice, and data collection. The cyclical nature of action research is underscored in action planning, allowing new action research studies to develop. When an action plan is fine-tuned, "it makes your data stronger (i.e., more valid), thereby making your conclusions stronger and more meaningful" (Mertler, 2014, p. 215) and fundamentally legitimizes the decisions teachers make (Dana & Yendol-Hoppey, 2014).

Reflecting

Reflection occurs when researchers attempt to explore the rationale and effects of their actions (Mertler, 2014). Dewey (1938) placed great emphasis on reflective thinking, stating, "[i]t is the heart of intellectual organization and of the disciplined mind" (p. 87). The reflecting stage is where the teacher-researcher and student-participants make a connection between theory and practice to further the study (Mertler, 2014). An educator must contemplate the future at every step of the learning process (Dewey, 1938).

Plan of Action. A large part of reflecting is sharing the results of the action research. Results of the present action research will be offered at a local level with study participants. Next, the study's results will be shared with the teacher-researcher's middle school team and social studies department. Information will also be shared with building administrators and through department and faculty meetings in the particular school. A

wider audience will be reached at district level professional development meetings and professional conferences (Mertler, 2014).

Conclusion

After reflecting on the problem of practice, the teacher-researcher challenged the traditional inactive pedagogy that is driven by state-mandated standardized tests, which are rooted in essentialist and behaviorist philosophies. This study examined how kinesthetic learning affected sixth-grade students' critical thinking skills. Active learning provided an opportunity for students to enjoy what pragmatic philosophers such as Dewey, Montessori, and Greene believed to be a fundamental human freedom. Incorporating kinesthetic learning in the classroom may create higher constructs of knowledge for students.

The researcher worked with the student-participants to reflect on the data and devise an action plan where kinesthetic models of pedagogical practice are embedded in the social studies classes. By thoughtfully answering the research question, students' critical thinking skills may improve through active engagement with curricular content.

CHAPTER 4

FINDINGS AND INTERPRETATION OF RESULTS

Introduction

Teachers investigate best educative practices for the benefit of students. The mission statements and vision statements that adorn entrances of American schools claim that critical thinking skills are vital for a democratic society and that students must be prepared to compete in the 21st century global market. Critical thinking skills, according to Bloom's revised taxonomy (Anderson & Krathwhol, 2001), require application, evaluating, and analysis, all of which are productive processes rather than reproductive processes. Therefore, it is crucial for each student to produce new ideas while thinking critically. Critical thinking requires engagement. My observations from this action research however revealed that engagement does not look the same for all students.

The problem of practice was that my sixth-grade social studies students lacked critical thinking skills. When faced with concepts such as prediction, cause and effect, and character motivation, my students struggled. For instance, after discussing Hellenism, the following question fell flat: What do you suppose Alexander the Great's motivation was for his troops to marry outside the Greek culture? My students also struggled with why the decline of population due to the Crusades or the Black Death led to better opportunities for survivors. After investigating my teaching practice, I wondered if

the problem of practice was rooted in a sedentary pedagogy. It seemed counterproductive to teach students about the grand human drama within the social studies curriculum without having them actively engaged with their peers. In the past, students often worked independently, or with partners, or with small groups at their desks. However, it was far too common for some students to be passive when sitting at their desks regardless if they were in cooperative groups, how I guided, or how often I circulated throughout the class. Finally, I drafted the action research question: What effects, if any, would a physically active classroom have on my students' engagement and critical thinking? As the research progressed however, I observed and experienced a great transformation where I came to understand my students' learning and my teaching in a more profound way.

I entered the teaching profession wanting to help students employ higher level thinking and have wondered how best to motivate students to engage in such skills. There had to be a way to share my love of the discipline and higher order thinking without dictating a one-way delivery pedagogy. Thus, this research was to ascertain if students could be motivated to engage in higher-level thinking through kinesthetic learning.

Although I was tempted to solely rely on a one group-pretest posttest methodology, I wanted a broader scope. My students needed a chance to have a voice in this research. The research was as much 'for them' as 'about them.' It was necessary to explore the social dynamics of more than one class to cast a wider net. Therefore, the action research was conducted with two classes and utilized a mixed methods design with quantitative data such as a closed ended pre-project survey, pre and posttests, and a Likert scale survey. Qualitative data included field notes and a large group interview to reveal students' thoughts about their learning experiences and opinions.

Findings of the Study

Pre-project Survey

Before the action research, students took a survey using Plickers cards.

1st Block: What helps you really understand something?	
Reading about it	4
Listening to someone explain it	6
Physically doing it	3
Seeing it	8
TOTAL	21
1st Block: What is more memorable for you?	
Reading stories	4
Listening to someone explain it	9
Acting out stories	5
Seeing stories	4
TOTAL	22 (An early dismissal)

2nd Block: What helps you really understand something?	
Reading about it	4
Listening to someone explain it	6
Physically doing it	11
Seeing it	7
TOTAL	28
2nd Block: What is more memorable for you	
Reading stories	11
Hearing stories	3
Acting out stories	8
Seeing stories	6
TOTAL	28

Observed Stories

My first block students were enthusiastic when they learned about the action research project and expressed their excitement with smiles, widened eyes, nodding heads, and verbal affirmation. The first day we began kinesthetic learning, I asked for volunteers and naively assumed everyone would be willing to participate. Most of the children conveyed trepidation, standing still and staring at the ground or at each other. At the time, I was confused why more students did not want to participate and thus began my careful observations and reflections.

Unsurprisingly, Nicholas reacted differently. From the beginning of the year, Nicholas proved to be a kind student who struggled with the traditional class expectations, which included: Staying in his seat, remaining attentive during teacher led discussions, and methodically writing and completing his homework. Before the sixth grade, Nicholas attended a very small local school and was also homeschooled. A few weeks into the school year, his parents requested a parent teacher conference with his core teachers and expressed concerns with his academic success. The first day of our research, Nicholas catapulted from his desk as if finally unshackled, prepared to dramatize anything. He is a happy, confident boy who enjoys playing football, participating in chorus, and has many friends. He enjoyed communicating with classmates during class any time he could. As the study progressed, I realized Nicholas and other students whom I characterized as perfectly average were not only critical thinkers, they strove to show they were thinking on higher levels when my instruction encouraged active learning. The kinesthetic learning had effects that positively resonated with students like Nicholas. Later these effects were coded.

Motivation

If only all my students were as enthusiastic as Nicholas. It appeared that some students in my first block class were initially apprehensive to participate in kinesthetic learning. I circumnavigated this challenge by implementing a low risk warm up to get the students used to moving. It was crucial that students felt mentally and emotionally comfortable being out of their seats and active with their classmates within the four walls where a sedentary traditional pedagogy was common. In order to introduce a low risk kinesthetic exercise, a popular game quickly came to mind: Simon Says. The reaction was overwhelmingly positive. Students knew the rules of the game and after a couple of commands, I encouraged students to be Simon and call out commands. Most students raised their hands. It was a promising segue into more creative dramas and we participated in another Simon Says round the next day to ensure students felt confidence and trust. After a few commands, I asked them to do a simple content relevant physical response to verbal instruction relative to the topic we were studying: Ancient Japan.

I asked students to form groups and show the social hierarchy: emperor, shogun, nobles, samurai, and peasants. A few groups moved themselves into human triangles where one student stood in the back of the group, behind others who were sitting in chairs. In front of those sitting, more students were kneeling and in front of them, and the majority of each group sat on the floor. After the physical representation of hierarchy, I asked students to show me what people in their certain hierarchy would be doing. Those who were emperors had others pretend to fan them, the shogun were slowly pacing with heads up, nobles were pretending to dole out money, the samurai were pretending to battle, and the peasants were acting as if they were raking and digging. After reenacting

a day in the life of historical figures, I felt confident in increasing the level of thinking along with the dramatizations.

By asking a "what if" question, students were required to consider relationships between the hierarchies. I asked them to act out what would happen if peasants went on strike to help them understand how all people, regardless of hierarchy, were necessary in society. Most everyone collapsed to the ground as if they were perishing. I asked a student why she fell down. She responded there was no food being produced by the peasants. These actions showed me that the students understood the roles of people in Ancient Japan and how each person served a vital role in society regardless of political power or social clout. This seemingly simple exercise helped me notice that I could formatively assess my students' analytical thinking and active translations while releasing energy and having fun (Gray & Chanoff, 1984).

The students who did not regularly talk in class now had an active voice. During this research, I began asking less closed ended questions or leading questions. Rather, when students created a Total Physical Response, I always asked them to justify or defend their performances to help engage their critical thinking (Ennis, 1993). They were put in a position of creators explaining the creations. In a traditional classroom, many teacher led questions were met with, "I don't know." During this intervention, I never heard, "I don't know." When different students portrayed similar concepts in similar ways, such as nobles falling down, I noticed a camaraderie that I never saw in the past. Furthermore, students did not have to wait for me to call on them and I did not have a preconceived answer in mind when they acted out their answers. They merely had to defend their actions when I asked them to explain their own portrayals. Due to their

ownership, students experienced a confidence that helped develop their critical thinking skills.

However, I soon discovered all of my students would not actively engage the way I had originally envisioned. When the class reviewed what the feudal system looked like, Douglas and a few others opted out of kinesthetic learning. I wondered if it was peer pressure or boredom. Did the intervention feel too elementary to them? Was there a lack of trust? To counter this challenge, I decided to invite my second block students to participate in the action research. The way the sixth grade schedule worked, students first attended a core block class, then two exploratory classes, after which they reported to their second core block class. For the sake of my research, however, I did not focue on studying a possible correlation of the schedule and active participation. Nor did I plan to compare the two block classes. I wondered if by experiencing exploratory classes such as PE, band, art, strings, chorus, computers, or French, kinesthetic participation might be more robust in my second core block class. The dramatizations varied in length, some days producing quite short total physical responses, which I felt gave any apprehensive students a low risk exercise.

By the third week of the project, we began to study the European Middle Ages. Before putting students into groups, I conducted physical responses to questions such as, what happened in 476? Stephen fell to the ground with flair; Sally, a quiet student who usually did not participate, pointed down with a smile, showing me she knew of Western Rome's fall. I realized that I had not seen Sally smile in class before. I was relieved when Douglas, the boy who had previously balked at participating became very active again. One group represented nobles, another group represented knights, and another portrayed

peasants. I posed the following questions for students to dramatize: What do nobles have? Where do peasants go? Who would nobles hire for protection? They moved with agility and their interpretations were academically legitimate (Montessori, 1967).

A few days later, I said something that stopped me in my tracks. After a group finished its presentation, I transitioned to another group and said, "This one should be good." The way I said it sounded as if the group that just finished was not that good. I had to take care of the words I spoke to help ensure students would feel safe and enthusiastic about their own creative interpretations. I felt that a positive environment would not flourish if I compared their creative portrayals.

Engagement

During brainstorming sessions prior to theatrical presentations, I noticed that more children became more engaged with the material and were interacting with each other while having freedom to move, whether that was swaying, skipping, marching, swinging, or dancing in place. To a casual observer, this movement might have been insignificant and to one trained in traditional classroom management, this type of movement might have been viewed as indulgent and a distraction. Under careful observation, however, my students were listening and talking about the topics at hand while they were moving. Even Teresa, a student who never talked in class, easily moved and danced with Jennifer as they prepared their presentation. Clay leaped and pounced on an eraser at the board. Bill "dabbed" to signal the conclusion of his group's skit. Mike put his hand to his head pretending to faint. Ralph skipped in place while listening to classmates in his group. One of his group partners was Scott, an avid reader with few close school friends. When Scott informed Ralph, "I'm gonna walk this way!" Ralph

followed and practiced walking like Scott. “Affective energy might manifest in the sheer joy that exudes from our bodies through uncontrollable laughter or visible excitement that causes us to jump up and down or shake” (Enriquez et al, 2016, p. 94).

My classroom became more energetic and not only from students dancing and skipping and leaning in to each other. Students began feeling more confident moving chairs and desks around at will without asking me for permission, which added to the climate of trust that I have always tried to cultivate. I reflected that building a trusting environment was hard to accomplish when I created a classroom that was focused on producing an obedient workforce in rows of desks. The children started to improvise props. They took tissue to make money when reenacting the wealth of Venice, used the whiteboard to create backdrop drawings that displayed artistic perspective during the Renaissance, and used the workroom door as the entrance to Gutenberg’s workshop. There was more exuberance in the room.

It was intriguing how both boys and girls would regularly sway and dance while working with each other. Before this action research, the extent of student movement in my classroom consisted of getting tissue, hand sanitizer, sharpening pencils, raising hands, and sometimes pushing desks together for cooperative group learning activities. This intervention was in sharp contrast with a traditional school setting, in which students move in orderly fashion during passing periods, and they walk silently in straight lines when they to go to recess and lunch. In the past, I interpreted my role as a responsible teacher and dependable colleague who was to oversee students’ expected behavior.

As an action researcher, I was no longer a removed overseer or observer. When my class studied European Middle Ages, teams acted out the feudal system. I pretended

to be an investigative reporter, interviewing students while they were in character while using an invisible microphone. Students started to respond to this interview in a positive way, laughing at my character. Being in character reminded them that we were working together and that I was not solely an evaluator or removed researcher (Freire, 2013). Slowly, students began moving in relaxed ways when responding to me. No longer did my students have to suffer awkward moments standing at attention in front of the seated class while giving traditional oral presentations. Instead, children found comfort in their peer groups. They were in control of their personal spaces. Groups formed wherever they liked rather than me assigning them a corner to convene. I did not want to micromanage students' brainstorming sessions or dole out task cards. Instead I wanted students to create and present their own interpretations and attempt to manage conflict as it arose.

Oliver, a gifted and talented identified student with high functioning autism, was playing England's King John. In his group, he became argumentative, loud, and reckless in his behavior, which kept his classmates' attention. He improvised and snatched a fan that was on the table as if it were nobles' property. His teammates laughed, but it was clear their part in the drama was silenced. Cale and Oliver took the primary roles in this group. No one else moved; they played quiet, standing soldiers. I decided against assigning roles to dictate equitable engagement. This action research allowed students to engage with the content and their peers without being required to assume any definite tasks. As a result, students were required to cooperate with their classmates. One day, the topic was the effects of the bubonic plague on survivors. Oliver fell to his knees and exclaimed, "YES! It's all mine!!" Again, his peers stopped what they were doing to watch him perform his solo act. As Oliver showed his creative engagement with the

topic, his classmates seemed to focus on the one who commanded the most attention. Situations like these had me carefully consider the times I should intervene and the times it was necessary to allow students to navigate and implement a fair system for their work and social spaces.

There were other awkward moments for groups, but classmates helped to relieve tension. For example, in the past, I would regularly guide students back on the "right" track. When it was time for Julia's group to present, the girls stood as if in front of a firing squad. Theirs was not the movement for which I hoped: nervously balancing and rocking on the outer edges of the feet, hands clutched, nervously smiling. It was clear that they were not familiar enough with the academic material. Christopher, who was in a different group realized the awkward silence, stopped his swaying, stepped closer to the group and freely offered the information to the group. He nonchalantly, but confidently shared with them the significance of their assigned topic of the Magna Carta. They carefully listened to him and the students moved forward. This encounter taught me that students needed more opportunity to study the topics. Situations like the one between Christopher and Julie's group taught me that I want to change a traditional pedagogy, it would require me to cultivate a trusting classroom by investing time for student led conversations.

When the class began to study the Renaissance, I increased the amount and detail of information students needed to know in order to dramatize with relevance. Each group was assigned applicable readings and EdPuzzle, a video platform with embedded questions to help students focus on significant information. This was the longest independent research the students were required to do prior to their kinesthetic activities.

Most everyone was engaged with each other, except Irene who was dutifully taking her own notes. When it was time to act their creations, Hannah and Joseph turned red and did not engage with their group despite prompting from their peers. I wondered if there were contentious relationships within any groups. I reminded the students that they could create something fun. I jokingly asked if taking notes at their desks was more fun than producing brief skits with classmates. Kaitlin responded that it was more relaxing to sit and take notes. I was surprised. Perhaps passive learning was relaxing since there was little engaging critical thought involved. Passive learning was something that may have been relaxing because in the past, it was what my students had been taught to do and they had grown accustomed to it. Birdie shook her head and raised her hand impatiently to respond to Kaitlin's comment. She stated confidently that dramatizing in front of the WHOLE class was not fun for some people. She said, "You don't get along with people or don't know people, or they are more popular and you don't know what they'll think of you. They're not the people you hang out with at recess or lunch. That's when you get all rowdy and loud." I thanked her for being so honest and asked the class, "How many agree with what Birdie said?" Most every hand went up. It was clear that they did not yet trust each other. Birdie not only broached a submerged topic. She raised an emotional point that resonated throughout the class; thus the students discovered a commonality that unified them. I was grateful for my students' honesty and I wondered if they would have been that truthful and open with me if we had not been involved in this project. After Birdie voiced her opinion and revealed an uncomfortable truth that her classmates shared, it seemed there was an upswing in participation. During this action research, I noticed that sometimes it took only one student's bravery to set a different direction for the class.

In the fifth week of the study, we continued to study the Renaissance, and the students read about the great artists and inventors of the time. Douglas, acting as Michelangelo, incorporated humor in his acting, He pretended to be a flamboyant artist carving his statue of David. Douglas' humor seemed to make the class at ease, conveying that it is ok to have fun while personally embellishing the acting (Gray & Chanoff, 1984).

When I offered students to choose their own groups after weeks of assigned placements, there was even more excitement in the classroom. Tim and Irene were happy to work together. Tim leaped over desks and arranged them to prepare the Medici kitchen table for a family conversation. When he sat down, he cupped his chin in his hand, smiled widely at Irene and exhaled theatrically, "So!" Irene was planning for their props and exclaimed to Tim, "I have flashcards!" and bolted to her book bag across the room, bumping into desks. I noticed how often Montessori (2013) came to my mind during this action research where my 28 desks and computer table that once acted as butterflies' pincushions were now the hurdles over which my students leapt and props with which to play.

Finding Space

The notion of space refers to the interaction of people and places. It is a dynamic and emerging place where people define themselves (Talburt, 2000). During this research, my focus shifted into a dynamic practice where students could freely move and thus could more comfortably express themselves and their analyses of the social studies content. Critical thinking needed to go beyond answering questions on constructed pretests and posttests, assessments that, early in this action research project, began to seem flat (Montessori, 1967). In the past when I practiced a stationary pedagogy, my

students did not have the freedom to create their own space. Rather, they were forced to work in a place that I defined: Students in their seats at their desks, dutifully taking notes, reading, and answering short questions with short answers. It was a one-dimensional verbal or written right answer-wrong answer existence. As I observed my students during the action research, I realized the importance of nuanced action based productivity and freedom. I became acutely aware of how students made their own space while preparing for their dramatic plays, and how they interacted with the material and each other in conjunction with their movements.

Students were moving and acting in ways that are not normally accepted within traditional classrooms and from my observations, students were enjoying themselves. "Embodied performances are not always welcome in classrooms and can often be interpreted as class disturbances" (Enriquez et al., p. 44). At the very beginning of the action research, students dramatized a concept called kami, a Shinto belief that every living and nonliving thing has spirits. They could choose any living or nonliving being. Students were interviewed what they represented. Oliver, quickly dropped to the ground and slithered like a snake. He appeared to enjoy it by the speed at which he assumed the role of a snake, the energy with which he dramatized, and the length of time he spent being a snake. Tabitha, a student with special needs who rarely smiled, flashed a large smile when asked what living or nonliving thing she assumed. Seeing her smile made me reflect how little I knew some of my students, particularly quiet and seemingly shy students. This action research allowed me to become more acquainted with my class.

The group brainstorming sessions gave me the opportunity to talk with George, a very shy boy who smiled all the time. I was embarrassed to realize that half the school

year passed and I knew nothing about George except that he was quiet and did not demand any attention from both his peers and me. With calm confidence, George shared his knowledge and analysis of the Bubonic Plague, explaining why his character, a peasant living after the bubonic plague swept through Europe, was content working the land. He told me how working the land was different than before the plague because people earned better wages for their work due to labor shortages. In the past, George would not participate in class. He made his space in individual conversations. Prior to this action research, I was busy lecturing, surveying, and evaluating, and therefore did not know many of my students, what they knew, and what they wanted to share. Students now had more opportunities to make their own space in my class and thus, be more comfortable with themselves and the material.

Like George, there were other students who, when placed in a traditional classroom setting, would assume a passive existence. However, when given the opportunity to express themselves in a way that was more motivational for them, they showed me critical thinking skills with confidence. Maria, a Brazilian immigrant, had been in the United States for just over a year. Her English was fluent, but she periodically struggled with vocabulary. She did not talk in class so I was pleasantly surprised when she proved to be an engaging actress. She had terrific volume, inflection, body language, facial expressions, and cadence and the class took notice of her. Ana showed how she was making her space through creative movement and dramatization. She walked into Gutenberg's printing press shop and declared, "We are poor, we cannot afford books. They are so expensive, you see. If only we could afford them, we might be able to read too!" Maria showed great independence while enjoying camaraderie with peers.

Students struggle to find space if there is a lack of friendship within a class. Toward the end of the action research project, I allowed students to choose their own groups and noticed that Peggy invited students into her circle. This was noteworthy because in the past, she rejected classmates who were not in her small circle of friends. When asked to turn her desk to join others, Peggy was known to literally turn her back on them. This day, however, she invited shy students to join her group. Peggy found her space by simultaneously reflecting on others' actions while also being introspective (Rohrer, 2006-2007). It appeared the physical and social autonomy given to her from the kinesthetic activities ignited her compassion that, from my observation, invigorated her to welcome others into a larger circle of friends. Likewise, Sienna, a soft-spoken shy girl, found herself in a leadership position when she invited a classmate, Destiny, who was even more shy than Sienna. Identities shifted as the spaces were changed and students were given opportunities to make their own space (Moje, 2004). As children became accustomed to kinesthetic learning, peer relations became more inclusive and the more socially engaged my students became, their learning became more motivated and exuberant (Ryan & Deci, 2000).

When people create their space, they feel safe. People can construct space for others and for themselves (Leander & Sheehy, 2004). I observed Irene in both situations. In the midst of a brainstorming session, a significant interplay transpired between two students: Irene and Peter. Irene happily leaped across the room, over anything that was in her way. Unbeknownst to Irene, one of her group members, Peter, usually a judgmental student broke a tender smile to himself at Irene's enthusiasm. I was afraid he would make eye contact with another student to show disapproval of Irene's energy, but I was relieved

that he did not. Irene did not realize that Peter allowed her that social safe zone to be energetic without being constricted. When it came time to present her drama, Irene was well aware of how she dictated her space by improvisational skills. As a result it also affected her peer relationships.

Irene acted as a servant in the Medici household and accidentally dropped her food tray that improvised from stacked schoolbooks. Instead of nervously laughing, getting upset or embarrassed, she improvised and acted as the overly apologetic servant. I found it extraordinary and laudable that she found and conveyed humor in her impromptu performance. Leander and Boldt (2013) argue that we are always improvising, and therefore it should not be seen as something peculiar. This seemingly small act affected Irene's peer relationships.

Throughout the school year, students would respond to Irene's enthusiasm and anecdotes with rolling eyes. Since the Medici performance, however, students began to accept her more. They engaged and listened to her not only in class, but during morning and afternoon homeroom, as well. Educators and teacher educators need to craft "embodied pedagogies that widen the field of what is learnable, visible, and experienced for body-texts in and out of . . . classrooms" (Enriquez et al., 2016, p. 69).

During kinesthetic activities, my students determined their personal space. Space was once determined by seating charts using desks. With kinesthetic learning, students could bypass or rethink the use of the desks and move anywhere in the classroom. Oliver was more comfortable engaging in conversations using close personal space. The intervention benefitted his preferred personal space. During brainstorming sessions, Oliver stood very close to peers when talking to them. His classmates were engaged in

sharing information and ideas and did not seem to mind his proximity. Perhaps dictating their own personal space showed trust, self-confidence, and independence.

Not all students, however, quickly and comfortably broke from the conceived space (Legebvre as cited in Leander & Sheehy, 2004) that I established in my classroom before the six-week intervention. My field notes helped me to recognize how students, like Deborah, claimed their own space. Marginality offers perspectives "to imagine alternatives, new worlds" (hooks, 1990, p. 341). Deborah did not have close friends. In the hallway, recess, and lunch, she was not seen with a particular peer one might identify as a best friend, although she never appeared sullen. She was involved in school activities such as the Quest competition and said she enjoyed the experience. She also adopted the special education class hamster during the weekends. While Deborah was not anti-social, she embraced her individuality in socially recognizable ways. She started cutting her hair every few days so that it eventually went from past her shoulders to chin length. Ink pen tattoos appeared from her fingertips to her elbows, she started wearing ripped jeans, and colored her hair purple. It appeared she embraced individuality. If an outsider observed her group's presentation, "A Day in the Life of Gutenberg's Workshop," one might assume she was unengaged and did not contribute to the group. On the contrary, I observed her playing a significant part of the planning stage. When it was time to act in her group's drama, she chose to be the printing press apparatus, lying on the ground with arms and legs contorted to show that she was a machine. I asked her what she represented and she confidently answered, "I'm the machine, the printing press!"

Leander and Sheehey (2004) explain that the notion of space is not stagnant, but a "product and process of socially dynamic relations" (p. 1). Space is something that can be

constructed by people and also construct people's identities (2004). My classroom transformed from a conceived space, where dominant ideology was set in place (Legebvre as cited in Leander & Sheehy, 2004) into a space where students were able to enact different identities (Moje, 2004). In the past, students experienced contrived lesson plans, desk arrangements, dictated topic transitions, and an orderly one-way flow of information. Working within the dominant conceived space of my classroom, my students developed identities that conflicted with identities they experienced in social settings (Moje, 2004). The kinesthetic learning process reconstructed the classroom space and as a result empowered my students. They were required to deal with this power. Some students embraced this newfound agency, while others expressed discomfort. The traditional classroom setting was a familiar space where habit and power were established. Flattening this power hierarchy silenced some students perhaps because they were not accustomed to being given power to carefully consider information, their peers, and themselves.

Gaining capital

Having capital means owning something that can be leveraged to the owner's advantage. In this discussion, capital translates as leadership qualities, connections, and social nuances that enable one to have a socially significant identity (Gee, 2000). Gee called this Discourse with a capital D. Such Discourse allows people to understand language and social constructs in order to be in an advantageous position in society. Through kinesthetic learning opportunities, some students unexpectedly gained social capital by unexpectedly emerging as leaders. Mary, a first generation Guatemalan-American, had always requested teachers and peers to call her by a common American

name instead of her family given name because she claimed that no one could ever pronounce it correctly. Identified as gifted and talented, Mary was one of my brightest and friendliest students. She attended classes with girls who were socially dramatic. I have observed vocal and dramatic girls who regularly command attention from teachers and peers, yet Mary never drew attention to herself. For the kinesthetic activities, however, students like Mary who had a solid understanding of the content and had quick, creative ideas emerged as leaders. Conversely, those who regularly relished the social spotlight knew they would be in an embarrassing situation if they could not justify their dramatic play. Consequently, Mary had the opportunity to gain social capital. Jennifer, a loud and social student embraced a different identity. She found herself intently listening to Mary, who used large hand gestures, and whose feet were planted firmly on the ground. She exuded confidence. "Performativity gives rise to one's perceived identity" (Enriquez et al., 2016, p. 43).

Not all students were like Mary who readily and quickly embraced an emerging identity through the kinesthetic learning activities. Jennifer capitalized on her charisma to gain attention from peers and thus power within her social space. However, she found herself in uncomfortable situations in class when she was unable to perform in the dramas due to her lack academic acumen. She did not grasp the concepts as quickly as her group partners, many being within her social circle. For the first few dramas, Jennifer wanted to be a main character, but when I asked her to justify her dramatic interpretation of the concepts, she could not. This desire to be heard and seen drove her to command the academic material in order to have the attention she desired. During the fifth week of the intervention, when it was time for her to portray "A Day in the Life in Gutenberg's

Workshop," she was rightfully confident in her scholarship. She took the academic preparation seriously instead of focusing solely on the acting. When it was time to explain the relevance of her group's production, the class gave her attention as she expertly explained her group's rationale of how it conveyed the historical material. Jennifer gleaned capital, not for relying on her charisma. Rather, she acquired the respect of her entire class for her command of academic intellect and how it related to a theatrical analysis instead of relying on her charisma.

Throughout the action research, Oliver had boisterous moments where the class was held captive. He experienced a transformation when his group portrayed humanism. Oliver gained social capital when he attracted attention from his peers within and outside his group, for his calm narration rather than from his boisterous antics. The class gave him attention he desired and he appeared to relish the information he conveyed. He delivered the message clearly and steadily projected his voice, using pitch and cadence. I wished that my colleagues who regularly viewed him as a disruption could have witnessed this acquisition of leadership.

Other students comfortably assumed the role as leader within their cooperative groups. Lauren loved chorus class, which incorporated dance performance. Her group was given the following statement to embody: "I would like to add depth to this figure." Lauren smiled widely as if she had a vision how to portray this concept. She assumed a leadership position in the group. Peggy gave Lauren agency by asking, "What do you think I should do?" It became clear that Lauren's panache for creative acting was a newly recognized value in the transformed space. With feet planted shoulder width apart and hands on her hips, Lauren gave her ideas and used a lot of hand gestures while explaining

her thoughts. When it was time to perform, Lauren walked "on stage" first, turned and gestured for others to hurry, again comfortably assuming a leadership role that her group members readily gave her. The group added humor to their skit by signing their paintings with surnames such as Peggy "Lisa" and Lauren "Vinci". Lauren gestured a ta-da movement to indicate their skit's conclusion. Due to this research, my social studies classroom transformed into a space where students' latent talents were brought to bear and as a result, critical thinking was enhanced.

Critical thinking

The original focus of this project was to determine if kinesthetic activities helped motivate critical thinking. One way I assessed this was formatively assessing students' through teacher observation. There was no set rubric or scale to measure creativity, a component of critical thinking (Anderson& Krathwhol, 2001). However, individuals had to defend their active dramas to prove they could explain their actions. The sixth week of the intervention had the class researching Magna Carta through readings, videos, and notes. Students were placed in groups to dramatize particular concepts: Rule of Law, Shared Power, Individual Rights, and Limited Government. One group of boys seemed uncomfortable and "forgot their lines." Students were required to relay the applicable concepts in order for the audience to recognize how the group analyzed the concepts. The students needed to evaluate the information and create a way to relay the information in a physically active way. The brainstorming sessions were only one part of the kinesthetic activity and their purpose was for the groups to discuss the issue and plan a creative dramatization. Instead, this group of boys used the brainstorming session to socialize without regards for the content and I allowed them to go on with the play. It is

important to note that I was always available to help guide students should all group members were struggling with the academic material. The consequence of not preparing, delivering, and defending their creative drama was a social discomfort. After the group's activity, Oliver shouted, "Did you guys even plan this out?" He highlighted the issue. With more freedom comes more responsibility. Many students used their freedom to portray more than the obvious.

In the sixth week of the intervention, I gave a total physical response to determine if students could convey a way in which the Crusades and the Black Death ignited the Renaissance. Kelly acted as a trader. Others simply pretended to die. When students dramatized historical figures, Peter was freely walking around the room, writing notes backwards as if were daVinci. He explained that daVinci had such an eccentricity to ensure his important notes could not be interpreted and stolen. More than that, Peter briefly came out of character and asked me as he continued to walk if I thought daVinci had an idea if his inventions would come to fruition. Affective energy is embedded within our bodies as part of the ways we "come to know" and "come to be" in the world (Enriquez et al., 2016; Gallagher & Lindgren, 2015, Stevens, 2015).

Just as Peter became daVinci, others found themselves becoming inanimate objects such as planets and stars. Richards (2012) found that kinesthetic learning helped college students understand sophisticated scientific concepts. Nicholas' group was showing the difference between geocentrism and heliocentrism. Douglas was teaching another boy in the drama while Nicholas and Gabe, a student who was learning English as a second language, acted as the sun and the earth. They were holding index cards above their heads to indicate who was the sun and who was the earth. As Douglas explained the concepts,

Nicholas guided Gabe. Nicholas, himself, had a lot of tutoring to help him with social studies concepts, so seeing him tutor another student was edifying. I paused the activity and asked Gabe, "What have you modeled, Gabe?" He answered the correct concept. Nicholas started getting very comfortable with the modeling heliocentrism and started to dance until I called out, "Nicholas, model geocentrism." He paused with an "um" and then acted it out with Gabe. I saw his expression of confidence and gratification. When there is a state of mind connected with learning something, the learning is "so embedded – embodied – that it's nearly impossible" to forget the concept is reintroduced (Enriquez, 2016, p. 76).

This action research helped assess critical thinking in various ways. During a six-week intervention, I conducted formative assessments by observing students, recording field notes, and administering two pre and posttests. I also conducted pre-intervention and post intervention surveys to gather rich data that focused on students' learning modality preferences. The pre intervention survey was simple and brief. The post intervention Likert scale survey was more detailed. Below, pre project survey answers help compare any change in preferences after six weeks of kinesthetic learning.

After my class finished the six-week course of kinesthetic learning intervention, I asked for student volunteers to stay for a few minutes after class to help me finish my research. Many students happily volunteered. I first asked what the disadvantages were to our kinesthetic learning activities and then asked what the advantages were of the dramatic activities.

Post Intervention Likert Scale Survey – First Block

1st Block	Very Much	Much	Little	Very Little
I feel social studies is useful	7	7	3	2
SS Relevancy	7	7	3	2
A - I enjoy listening about what we are learning	7	8	4	0
Listening (presurvey: 15 preferred)	7	8	4	0
K - I feel happy when I move around	4	7	6	2
K - I like acting out what we are learning in social studies	10	4	3	2
K - It is easy for me to concentrate on social studies when I am in a social studies skit	5	8	4	2
K - When I move around, I think about what might happen next	4	6	4	5
K-Total (presurvey: 8 preferred)	23	25	17	11
S - I prefer to work by myself	4	3	5	7
Like solo	4	3	5	7
S - I think my classmates can help me understand social studies when I don't understand	5	10	4	0
Students teach each other	5	10	4	0
V - I feel that reading about social studies is easy	3	7	7	2
V - I learn more when I watch videos about what we study	6	10	2	1
Visual: Reading/videos (presurvey: 20 preferred)	9	17	9	3

Post Intervention Likert Scale Survey – Second Block

2nd Block	Very Much	Much	Little	Very Little
I feel social studies is useful	6	15	4	1
SS Relevancy	6	15	4	1
A - I enjoy listening about what we are learning	7	12	6	1
Listening (presurvey: 12 preferred)	7	12	6	1
K - I feel happy when I move around	11	8	4	3
K - I like acting out what we are learning in social studies	12	6	5	3
K - It is easy for me to concentrate on social studies when I am in a social studies skit	7	11	5	3
K - When I move around, I think about what might happen next	5	8	10	3
K-Total (presurvey: 13 preferred)	35	33	24	12
S - I prefer to work by myself	4	4	10	8
Like solo	4	4	10	8
S - I think my classmates can help me understand social studies when I don't understand	5	17	1	3
Students teach each other	5	17	1	3
V - I feel that reading about social studies is easy	6	7	7	6
V - I learn more when I watch videos about what we study	7	7	10	2
Visual: Reading/videos (presurvey: 25 preferred)	13	14	17	8

Post Intervention Group Interviews

The following were comments from my first block class about the disadvantages of kinesthetic learning.

"If you're absent, it is difficult to catch up;

You may not have all the materials you want to improvise, I had to substitute books as a tray;

Stage fright;

Peer pressure;

There could be disagreements within the group;

You know the concept, but don't know the content;

I was afraid of getting it wrong."

The following were comments from my second block class about the disadvantages of kinesthetic learning.

"Everyone wanted to do the same role;

You learn more when you're doing a skit, not when you're watching one;

Some people didn't want to do the work;

Some people wanted to do everything, and others didn't want to do anything;

People boss around others;

Sometimes you don't get a chance to talk;

Some people were too focused on acting instead of teaching others who needed help with the concept;

You may not get a long with the group."

Advantages

The following were comments from my first block class about the advantages of kinesthetic learning.

"I liked how Simon Says got us loose;

I remember the peasants;

Everyone's opinion helps if you can't think of a certain thing to act out;

For teachers, it probably helps them know that you know stuff;

Acting out is more fun;

You get everyone's perspective, it's more fun, more better;

You get a chance to laugh, it boosts morale."

The following were comments from my first block class about the advantages of kinesthetic learning.

"People became less shy;

It's easier to understand with people in the group;

When you learn a bunch of information, you have to go back to the notes. When you act it out you learn a lot but it doesn't seem that way;

It's a nice change rather than taking notes;

You experience the information, not just take notes;

This way you feel the information better. If we were on Spring Break, we remember what we acted because it's part of our memories;

You can write down key points and names. Acting helps put other points in my head that might be on the test and acting it out goes more in depth, you're kinda there in the place and time."

Interpretation of Results

After studying the presurveys, I was surprised that not many students believed active learning helped them understand academic material more than other modalities. Only 14 percent claimed that physically doing something helped them understand something. Twenty three percent of students stated that acting out stories was most memorable. Forty percent claimed that listening was the mode with which best to understand and remember. Perhaps the auditory sense is engaged the most in their lives due to computer and television usage. Students have become accustomed to hearing instructions and one-way information flow in school, they may have become comfortable with auditory learning. Students in second block appeared to prefer physically learning and dramatic play. About 40 percent thought that reading was most memorable. The post intervention Likert scale survey offered results that overwhelmingly favored kinesthetic learning. Over 50 percent of my first block class and 46 percent of second block reported a preference for physically dramatizing what we learned in social studies.

The field notes revealed themes of motivation, engagement, finding space for those who are invisible in the traditional school setting, gaining social capital in the world, and critical thinking. After a semester in school where my class was mostly sedentary, it should not have surprised me that more than one round of Simon Says was required to help build trust with and between the students. Many of them experienced discomfort from transferring from a stationary classroom to an active classroom. Despite initial active participation, my first block class experienced unmotivated and disengaged days. Class conversations and field notes revealed the culprits were fear of judgment and peer pressure. From the post intervention interviews, some students would have been

more engaged if the brainstorming sessions guaranteed equitable time to talk, share ideas, and secure positions in the dramas. Group cooperation helps engage the life skills of navigating relationships, social negotiation, and securing space.

Those who did not have a voice in the traditional halls of academia found they could be creative in the different spaces provided in my class. Children who had an English language barrier or who were shy found they moved more with people instead of around them. Students may not express their marginalities, but I observed how students who spoke limited English found a voice, how shy students emerged as leaders, how an autistic student expressed the need to be affirmed and experienced independence. In all, the students had a chance to play and I witnessed exuberant children swaying, dancing, and leaping instead of walking, and students who gained personal, social, and academic stability. Individuals who create spaces find the world an easier place to negotiate. The more opportunities humans interact, the more they are engaged socially, emotionally, cognitively. Humans are social creatures and therefore, schools should nurture relationships within the classroom to offer students the social capital they need as they traverse their middle school years and beyond.

The voluntary interviews revealed that peer pressure was an issue as was negotiating fair participation within groups. Interestingly, many positive opinions about kinesthetic learning included how physically dramatizing something helped in grasping and experiencing the content.

Students did make considerable gains from the two pretests and posttests (APPENDICES I-J). I realized that such gains were likely due to maturation and pretest-posttest practice. As the study progressed, I focused less on gains from predetermined

questions and more on the critical thinking skills as they related to movement, social engagement, and active dramatization.

Conclusion

Our bodies are wired to be energetic. They assist us in understanding and being understood precisely because we learn in multimodal ways. Yet, children who show understanding through their bodies many times are deemed silly or immature. As teachers, we set up our classrooms for student success or failure. Our education system enforces acceptable ways of showing understanding (Enriquez, 2016).

There are pedagogies, such as active drama, that invite students to have a space. For marginalized students, this is vital. The more humans see their own bodies as worthy of taking in and producing knowledge and emotion, the more they respect their own bodies and others. Students need a chance to see themselves and others as creative agents otherwise, the normal activities such as movement and expression become foreign. I needed to have my sixth grade students play Simon Says to help them experience movement and fun within a classroom. My desk-centered pedagogy relayed a message that an immobile body is ready to learn and will be successful. The kinesthetic intervention offered students intangible assets such as social capital that will help them become more independent citizens in the world. The qualitative research gave a holistic view of my students, my teaching, and it revealed how the design of a classroom place can offer freedom to my students to create spaces. The physical, emotional, mental, and social aspects of learning were captured through observations, discussions, and open-ended questions. In terms of cognition, we are constantly connected with our community and with individuals. Thus, we are constantly making meaning.

CHAPTER 5: SUMMARY AND DISCUSSION

Introduction

The purpose of this action research study was to ascertain the effects of kinesthetic teaching in two sixth grade social studies classes in a southeast United States suburban school. A mixed methods research was conducted to gather adequate information to create an action plan to help counter sedentary learning and therefore advance students' engagement in social studies and therefore, their critical thinking skills.

Focus of Study

Educators strive to help students grow into critical thinking citizens who create viable solutions for significant social, political, and economic challenges within society. To that end, educators must allow students active opportunities to regularly put themselves within historical events while engaging with peers. The research question for this project was, "What are the effects of kinesthetic learning on sixth grade social studies students' engagement?" It became clear that my past pedagogy reflected an essentialist style for the good of standardized test scores. Although my students' test scores were laudable, I found their conversations and written exercises lacked higher-level thinking. I hoped to change my pedagogy into something more physically dynamic in order to improve engagement and critical thinking skills such as analyzing and evaluating (Anderson & Krathwhol, 2001), both of which imply active engagement. The intervention for this action research was subject relevant physical activity.

This action research utilized a mixed methods design for data collection and included students from two sixth-grade classes. Students completed a teacher-made presurvey to help me gauge their initial thoughts of different learning modalities. Next, I introduced brief kinesthetic interventions to help students become acclimated with the different learning style. Before new units were introduced, students took pretests with higher level thinking questions to help me determine a baseline of knowledge. After acquiring information about particular subjects, students were given assigned topics to actively role-play. As formative assessments, I observed adapted Total Physical Responses and asked students to defend their dramatic activities. According to Ennis (1993), critical thinking involves developing and defending positions. Field notes were collected and later coded to help recognize recurring themes. Posttests helped me determine what relationship there might be between kinesthetic learning and critical thinking. After the six-week intervention, children completed a Likert scale survey to record their perceptions about kinesthetic learning. Lastly, I conducted voluntary, informal, large group interviews to collect students' thoughts on the advantages and disadvantages of kinesthetic learning.

An overarching theme emerged as data were collected, organized, and analyzed: Engagement. By using a more active and engaging learning style, students were required to create cooperative dramatizations of historical figures and concepts and their critical thinking was assessed when they justified their role-playing with their group, with me, and with the rest of the class after their active dramas. Their rationale was important for me to assess their higher-level thinking. However, it was during group brainstorming observations that I witnessed transformations as students moved their bodies.

During the planning stage of the action research, I did not focus on kinesthetic learning while students were brainstorming with their groups. However, much of their social interactions while planning were accompanied with seemingly insignificant movement such as swaying, dancing, skipping, leaping, marching, jumping, and large hand gestures. As the six-week intervention progressed, I observed their interactions during these brainstorming sessions as much as their final productions. The more active students were, the more engaged they were (Friere, 2013), and the more movement they enjoyed, the more relaxed they were in producing original, yet relevant dramatizations and defending positions (Montessori, 1967). The large group interviews revealed that the kinesthetic activities required deep knowledge to benefit from the fun, engaging, collaborative student productions.

Overview of Study

Prior to the beginning of the six-week intervention, students answered presurvey questions revealing their preferences regarding different learning modalities. The intention was to determine how willing students would be when they were asked to perform creative kinesthetic activities. I made several observations and recorded field notes to document my student observations during their brainstorming sessions and productions. The schedule was the same for both classes and kinesthetic learning happened almost every day for six-weeks. There were two pretests and posttests showing gains. However, the focus of the tests diminished in lieu of better information. I observed critical thinking by listening and seeing student planning and producing activities, but students' motivation, engagement social dynamics, and transformations while moving fascinated me more. After the six-weeks of kinesthetic learning, students answered a

Likert scale survey revealing their opinions about different learning styles as well as their opinions about the relevancy of social studies. Many students were very willing to answer open-ended interview questions with their peers to share their opinions about the advantages and disadvantages of kinesthetic learning. After recording the data, themes coincided with my field notes. The most predominant theme was active engagement and how it is related to deeper thinking due to more active interaction with the social studies discipline, their peers, and with me.

Action Research

Teachers use action research to examine and improve their pedagogy while they are teaching. During this project, I was both the teacher and researcher and not a removed observer. Action research allows for constant reflection and refinement of craft. For instance, after introducing the research to my first block class, I realized that it would be beneficial to have a larger sample group, and therefore introduced my second block class to the research. Furthermore, after studying surveys, field notes and interviews, I found although the pretest-posttest data showed growth in higher level thinking, the formative assessments I conducted during the intervention were as valuable in determining critical thinking skills for the purpose of this action research. I witnessed conversations, reactions, and heard justifications in the midst of the intervention. Furthermore, the surveys, field notes, and interviews provided an opportunity for me to reflect and were integral in determining engagement. Hearing students' opinions about their experience with the dramatic role-playing shed light on the importance of individual responsibilities for successful group cooperation. It was heartening to hear the advantages of kinesthetic learning from the students because it allowed students' voices to be heard by many. If I

collected their individual written thoughts, I would be the only hearing their opinions and they would not be able to engage in a candid conversation with me in an open forum among their peers.

Summary of the Study

Both sixth grade social studies blocks consisted of heterogeneous ability grouped classes. My first block class consisted of 21 students with nine boys and twelve girls. Three students were African American and three spoke English as their second language. My second period class consisted of twenty-eight students with 14 boys and 13 girls. Three students were African American and one student spoke English as a second language. Both classes followed the same curriculum.

For each unit there were assigned subtopics that students researched and then actively dramatized. Sometimes students independently played charades to act out a person or concept. Students acted historical events or concepts in groups. For the majority of the time, I assigned groups of students. However, students did have opportunities to choose their groups, keeping within a group size that I determined. Children were offered information about the topics on a teacher led time frame and through traditional means: a variety of readings, videos, and notes. For the sake of time, I usually gave students the required information. However, there were other times where students researched independently and with their groups using sources I uploaded on our Google Classrooms. Each group had different resources assigned to them. A set time frame was given for students to prepare or brainstorm their creative dramas to present to the class. During this time, I circulated through the room to ask open-ended questions to gauge each group's progress, to ask for rationale when I heard group discussions about

presentations, or to quietly observe students. This was the best time for me as a teacher. I was initially apprehensive to relinquish the traditional classroom management of which I had grown accustomed, but after a few activities, I looked forward to seeing the children work together, move around and as one student expressed in the interview, laugh. The quietest children found that they were not only allowed, but were encouraged to move without fear of peer pressure or being disciplined for being "off task."

After students brainstormed in their groups, I selected groups to present. Most of the time, I would select the groups to present and other times, groups determined the order in which they presented. I regularly posed questions to the groups after they finished their presentation. However, sometimes I interacted with students as if I was a reporter inquiring about their actions, thoughts, and asked 'what if' questions. The more I acted outside of my teacher role and into their dramas, the more relaxed and confident the students' responses were. This might have been because they saw me outside a traditional authoritative role and more inside their drama, playing by more progressive rules, rather than a strict right or wrong path to valid information.

Discussion of Major Points

This action research aimed to change a sedentary teaching practice into one that gave students more opportunities to be engaged, active, analytical, and collaborative. The intention of the study was to investigate how kinesthetic learning may affect critical thinking skills among six-grade social studies students. After further reflection, I began to observe children engaging more with the topics and with peers. Formative assessments determined that there was a correlation between active physical engagement, motivation, confidence, peer relations, and critical thinking skills. The observation field notes, Likert

survey, and the interviews revealed that students felt an obligation to deeply understand the topics before producing and acting in a drama.

In the past, visitors to these classes would regularly witness a predominantly traditional pedagogy where students were expected to sit. By incorporating kinesthetic activities, it is important that there are expectations, parameters for the activities to help keep students focused, and enough freedom of movement and choice where students want to learn and create for themselves and to also help teach their peers. I began to experience what a child centered classroom was like. Students had parameters before breaking into their groups and working, but it was satisfying as a teacher to witness them moving freely, working for themselves, creating original representations of material they learned, and confidently defending their creations. There was minimal planning involved in creating kinesthetic activities because I assigned a concept or person to act out. It was the students who created an original and active skit that conveyed the concept.

Action Plan: Implications of the Findings

Action research involves constant reflection in order to improve teaching acumen and pedagogy. After reviewing the action research project, I noticed that the original question about cognition was too narrow and did not include engagement. By widening the scope of intended focus, I came to realize the importance of engaging students when trying to focus on higher thinking skills, which from what I observed were intertwined with motivation and social engagement. Therefore, in my next cycle of research, I would include how kinesthetic learning affects motivation, peer relations and self-confidence. These topics arose organically during the research. Could having or not having friends and confidence affect academic performance? Student interactions might lead to more

trusting relationships and as a result, student self-confidence, a marker of capital in one's life journey (Gee, 2000), may grow. Did my intervention build capital for my students? I believe it did after observing how students who normally stayed cloistered from collaborative conversation started speaking more with classmates and to me. A mixed methods research design was appropriate because it allowed me to gather more information in different ways. In my next cycle of research, I will focus on a qualitative design, which would allow for a better understanding of how students are engaged and their perceptions.

Action research is participatory for the teacher, and this project helped me realize that my students became more a part of the research rather than mere subjects. For future research, it would be beneficial to collect interviews during the intervention in addition to the end of the action research. I would include the question, what advice would you tell teachers who wanted to implement kinesthetic teaching in their classrooms? By making these changes to future cycles, the data and therefore conclusions will likely be more valid and more meaningful (Mertler, 2014).

My original action research question was driven by my desire to chart my students' cognitive growth on pretests and posttests due to kinesthetic activities. To my surprise, this research revealed much more. Through more active teaching methods like kinesthetic learning, my students seemed to respect their physical selves, spaces, and personalities. Students encountered and expressed social complexities and conflicts in their teams and worked through these conflicts in various ways. It was prudent to conduct interviews to confirm what I observed and to also have students shed light on what I did not observe.

Before the action research project began, I did not give much importance to observing students having fun. However, throughout the six-week intervention, children who were interacting with others developed in social ways as well as academic ways, leading them to engage more deeply and confidently in their brainstorming sessions and kinesthetic dramas. When my students interacted with each other while physically moving, their brains were occupied in multiple ways: expressing freedom of movement by swaying, leaping, dancing, engaging in social ways while moving, which is rarely done in academic classes, and in academic ways as they would use their bodies to symbolize concepts or role play historical figures. In the next cycle of research I will focus more on play and its significance for adolescents (Gray & Chanoff, 1984).

Confidence appeared to have increased, particularly for students who were marginalized. I observed how a quite sixth grader who spoke English as a second language became comfortable in her dramatic deliveries. Another student morphed from a shy student to a leader due to her command of the content. This power allowed her to help her group create innovative, yet logical dramas. I witnessed quite teacher-pleasers experience tension with progressive teaching. Students showed exuberance of finding their creative outlets, while seriously reporting, "You have to know what you're doing." Teachers care for students when we not only teach academic subjects well, but when we care for students by teaching them real life skills like the value of freedom, mobility, making good choices, creativity, and social skills. We write ourselves in this world, as Friere (1987) states, in different ways and this action research allowed my students to physically move and collaborate with each other, and by expressing themselves independently, they made themselves seen and heard. People are meant to give meaning

to the world and to realize a deep understanding of information changes a person (Greene, 1978). Students who were once silent exuded confidence as they actively planned their dramas, acted their parts, and defended their creative choices. The desks and chairs that once held prominent places in the classroom soon fell away. The classroom transformed to an open space where students were able to transform into more mobile, independent, social, critical thinking citizens. They were motivated to experience the material in their own spaces and to experience their own possibilities (Flinders & Thornton, 2013).

Everyone makes ripples in the drama of life through choices, circumstances, and opportunities. Through action research, educators allow all of this to unfold. By allowing students freedom, teachers allow students to respect themselves and others, share struggles in more positive ways, and give assistance to others they may have never noticed before.

Suggestions for Future Research

Future research should be conducted at the researcher's middle school to determine how many faculty members already incorporate kinesthetic learning and if so, what type and how often. It would be beneficial to survey how many staff members would be willing to include kinesthetic learning in their repertoire. If teachers have concerns about kinesthetic learning, it would be useful to record and discuss those concerns. More research should be conducted to determine if there is a difference in peer relations and student-teacher relations as well as critical thinking skills when kinesthetic learning is included in the classrooms. Fredericks (2004) explains that in-class engagement and interpersonal relationships can transfer outside the classroom. This may

be an incentive for teachers and administrators to build a positive culture within a school community.

During teacher observation and interviews, students in both classes were conversing and producing in ways that a traditional pedagogy does not readily employ. One cannot expect critical thinkers to be devoid of social skills. If educators are sincere about helping children grow into lifelong learners who contribute to society, their students should be given the opportunity to be actively engaged with choices and to be socially engaged with peers. As Gee cites (2000), humans need the ability to navigate relationships, negotiate conflict, share successes, and find space. As educators, we should allow children to have these experiences so that they have a better chance to grow into creative, social, and analytical thinkers. Gee also describes different Discourses that people use to acclimate to different social settings in life to gain a cultural identity. The first Discourse is typically within a family unit where people acquire a way to talk, act, think and believe. A second Discourse is learned in groups, such as schools, in which people want to belong. Through their elementary years, my students' had become fluent in a traditional, sedentary Discourse of School. This Discourse helped them develop identities that may not have helped them critically think. In the future, I will need to anticipate effective ways to transition students from the traditional Discourse to which they are accustomed to a Discourse that is more effective. The pretests and posttests showed improvement in critical thinking skills, but the recorded field notes revealed how my students grew in their critical thinking as well as their social agency.

By allowing my students to be their own artists, this action research allowed them to have more agency and autonomy in class (Lilly, 2011). With that power and freedom,

they created a space where they were allowed to critically think (2011). The action research allowed me to see my students as humans, children who depend on a humane education that allows them to move and think in an open space.

The teacher-researcher can gauge interest from administrators and teachers in incorporating regular kinesthetic learning within the classrooms. Professional development strategists should offer seminars that help teachers craft lesson plans that include various activities and methods for classroom management should classroom management be a concern for teachers. Perhaps a teaching coach's scope should include teaching educators strategies, such as kinesthetic methods, that drive more critical thinking and social engagement.

Conclusion

The purpose of this action research was to determine if by including kinesthetic activities to a sixth-grade social studies curriculum, critical thinking skills were enhanced. Moreau (2015) states that promoting critical thinking skills through active learning may foster more creative, innovative, and engaged citizens. The research question that led to this action research was, How do kinesthetic learning strategies affect critical thinking skills in a sixth-grade social studies class? This project revealed students' social and academic engagement when they were introduced to kinesthetic learning in the form of creative dramatic role-playing. After analyzing data, many ideas were generated to ensure a more active and engaging pedagogy. As described in Chapter Four, the results of the study indicate that children had fun (Gray & Chanoff, 1984), were more engaged with each other and the academic subjects on a deeper level (Montessori, 1967), learned from and taught peers, were required to understand material in order to fully participate in the

kinesthetic learning activities, generated and could justify their creative ideas, found confidence, and learned the importance of collaboration.

After the action research project ended, the action plan was shared with the sixth grade teams, administrator, counselors, and school's teaching coach. This was done in informal conversations because the action research ended just prior to the end of the school year. A more formal presentation will be given during the next school year at faculty meetings and professional developments where teachers are encouraged to participate. Despite the small sample size of this action research study, the school faculty and student body can benefit from the findings from the data results. Additionally, I hope to add to the body of educational knowledge.

REFERENCES

AAP Council on Communications and Media. (2016). Media use in school-aged children and adolescents. *Pediatrics,* 138(5). doi:10.1542/peds.2016-2592

Adams, M. (2013). Classism: Introduction. In M. Adams, W. J. Blumenfeld, C. Castaneda, H. W. Hackman, M. L. Peters, & X. Zuniga (Eds.), *Readings for diversity and social justice* (3rd ed., pp. 141–149). New York, NY: Routledge.

Altun, S. (2015). The effect of cooperative learning on students' achievement and views on the science and technology course. *International Electronic Journal of Elementary Education, 7*(3), 451–467.

American School Health Association. (2016). *ASHA position statement: The Every Student Succeeds Act: Implications for K–12 health education and physical education.* Retrieved from http://www.ashaweb.org/wp-content/uploads/2016/02/ASHA-Position-Paper-ESSA-FINAL.pdf

Anderson, L. W. (1996). If you don't know who wrote it, you won't understand it: lessons learned from Benjamin S. Bloom. *Peabody Journal of Education*, (1). 77.

Anderson, L. W., & Krathwohl, D. R. (Eds.). (2001). A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives. Boston, MA: Allyn & Bacon. The Annie E. Casey Foundation. (n.d.). "Newsroom." Retrieved from http://www.aecf .org/blog/nearly-half-of-americas-families-with-young-children-struggle-to-make -ends/

Asher, J. J. (1966). The learning strategy of the Total Physical Response: a review. *Modern Language Journal, 50*(2), 79.

Au, W. (2013). High-stakes testing and curriculum control: A qualitative metasynthesis. In D. Flinders & S. Thornton (Eds.), *The curriculum studies reader* (4th ed., pp. 235–251). New York, NY: Routledge.

Basch, C. E. (2010). Healthier students are better learners: A missing link in efforts to close the achievement gap. *Equity Matters: Research Review, 6.*

Bass, R. W., Brown, D. D., Laurson, K. R., & Coleman, M. M. (2013). Physical fitness and academic performance in middle school students. *Acta Paediatrica, 102*, 832–837. doi:10.1111/apa.12278

Benes, S., Finn, K. E., Sullivan, E. C., & Yon, Z. (2016). Teachers' perceptions of using movement in the classroom. *Physical Educator, 73*, 110–135. doi:10.18666/TPW-2016-V73-Il-5316

Berkeley County School District, Westview Middle School. (2015). South Carolina state report card. Retrieved from http://ed.sc.gov/assets/reportCards/2015/middle/c/m0801022.pdf

Bloom, B. S., Krathwohl, D. R., & Masia, B. B. (1956). *Taxonomy of educational objectives: The classification of educational goals.* New York, NY: D. McKay.

Bobbitt, F. (2013). Scientific method in curriculum-making. In D. J. Flinders & S. J. Thornton (Eds.), *The curriculum studies reader* (4th ed., pp. 11–18). New York, NY: Routledge.

Braniff, C. (2011). Perceptions of an active classroom: Exploration of movement and collaboration with fourth grade students. *Networks, 13*(1), 1–6.

Bruner, J. S. (2013). Man: A course of study. In D. J. Flinders & S. J. Thornton (Eds.), *The curriculum studies reader* (4th ed., pp. 79–93). New York, NY: Routledge.

Buber, M. (1970 [1923]). *I and thou.* New York, NY: Charles Scribner's Sons.

Centers for Disease Control and Prevention. (2010). *The association between school based physical activity, including physical education, and academic performance.* Atlanta, GA: U.S. Department of Health and Human Services.

Chandler, P., & Tricot, A. (2015). Mind your body: The essential role of body movements in children's learning. *Educational Psychology Review, 3*, 365–370. doi:10.1007/s10648-015-9333-3

Chapman, C., & King, R. (2012). *Differentiated assessment strategies: One tool doesn't fit all* (2nd ed.). Thousand Oaks, CA: Corwin.

Corso, M. J., Bundick, M. J., Quaglia, R. J., & Haywood, D. E. (2013). Where student, teacher, and content meet: Student engagement in the secondary school classroom. *American Secondary Education, 41*(3), 50–61.

Counts, G. S. (1978). *Dare the school build a new social order?* (Vol. 143). Champagne, IL: SIU Press.

Counts, G. S. (2013). Dare the school build a new social order? In D. J. Flinders, & S. J. Thornton (Eds.), *The curriculum studies reader* (4th ed., pp. 45–51). New York, NY: Routledge.

Cuevas, J. (2015). Is learning styles-based instruction effective? A comprehensive analysis of recent research on learning styles. *Theory & Research in Education, 13*, 308–333.

Dana, N. F., & Yendol-Hoppey, D. (2014). *The reflective educator's guide to classroom research: Learning to teach and teaching to learn through practitioner inquiry* (3rd ed.). Thousand Oaks, CA: Corwin.

Daniels, H., Cole, M., & Wertsch, J. V. (2007). *The Cambridge companion to Vygotsky*. Cambridge: Cambridge University Press.

Davis, A., Rimm, S., & Siegle, D. (2011). *Education of the gifted and talented* (6th ed.). Upper Saddle River, NJ: Pearson.

Dewey, J. (1910). *How we think*. Boston: D.C.: Heath & Co.

Dewey, J. (1938). *Experience and education.* New York, NY: Macmillan.

Dewey, J., & Dewey, E. (1962). *Schools of tomorrow.* New York: Dutton.

Doll, W. E. J. (2013). The four R's: An alternative to the Tyler rationale. In D. Flinders & S. Thornton (Eds.), *The curriculum studies reader* (4th ed., pp. 215–222). New York, NY: Routledge.

Dowling, C. (2012). The hand: Kinesthetic creation and the contemporary classroom. *International Journal of Learning, 18*(8), 51–66.

Drake, S. (2012). *Creating standards-based integrated curriculum: The Common Core Standards edition* (3rd ed.). Thousand Oaks, CA: Corwin Press.

Dunn, R., & Dunn, K. (2005). Thirty-five years of research on perceptual strengths: Essential strategies to promote learning. *Clearing House, 78*, 273–276.

Eisner, E. W. (2013). Educational objectives: Help or hindrance? In D. J. Flinders & S. J. Thornton (Eds.), *The curriculum studies reader* (4th ed., pp. 109–115). New York, NY: Routledge.

Ellsworth, E. (2005). *Places of learning: Media architecture pedagogy.* New york: RoutledgeFalmer.

Ennis, R. (1993). Critical thinking assessment. *Theory Into Practice, 32*(3), 179-186).

Enriquez, G., Johnson, E., Kontovourki, S., & Mallozzi, C.A. (Eds.), 20160. Literacies, learning, and the body: Putting theory and research into pedagogical practice. New York: Routledge.

Farley, J. (1981). Perceiving the student: Enriching the social studies through the affective domain. *Theory Into Practice, 20*(3), 179–186.

Fennell, M. (2016). What educators need to know about ESSA. *Educational Leadership, 73*(9), 62–65.

Fraenkel, J. R., Hyun, H. H., & Wallen, N. E. (2015). *How to design and evaluate research in education* (9th ed.). New York, NY: McGraw-Hill.

Fredericks, J.A., Blumenfeld, P.C, Paris, A.H. (2004). School engagement: Potential of the concept, state of the evidence. *Review of Educational Research, (1)*, 59.

Freire, P. (2013). Pedagogy of the oppressed. In D. J. Flinders & S. J. Thornton (Eds.), *The curriculum studies reader* (4th ed., pp. 157–165). New York, NY: Routledge.

Fromel, K., Svozil, Z., Chmelik, F., Jakubec, L., & Grofflik, D. (2016). The role of physical education lessons and recesses in school lifestyle of adolescents. *Journal of School Health, 86*, 143–151.

Gallagher, S., & Lindgren, R. (2015). Enactive metaphors: Learning through full-body engagement. *Educational Psychology Review, 27*, 391–404.

Gee, J.P. (2000). Identity as an analytical lens for research in education. *Review of Research in Education, 25*, 99-125.

Gee, J.P. (2018). *Introducing discourse analysis from grammar to society.* Abingdon, Oxon: Routledge.

Goldman, S., & Pellegrino, J. (2015). Research on learning and instruction: Implications for curriculum, instruction, and assessment. *Policy Insights for the Behavioral & Brain Sciences, 2*(1) 33–41. doi:10.1177/2372732215601866

Gray, P. (2016, December 20). Why our coercive system of schooling should topple [Blog post]. Retrieved from https://www.psychologytoday.com/us/blog/freedom-learn/201612/why-our-coercive-system-schooling-should-topple

Gray, P., & Feldman, J. (2004). Playing in the zone of proximal development: qualities of self-directed age mixing between adolescents and young children at a democratic school. *American Journal of Education, 110*(2), 108-146. Doi:10.1086/380572

Gray, P. & Chanoff. (1984). When play is learning: a school designed for self-directed education. *The Phi Delta Kappan,* (9), 608.

Greene, M. (1978). *Landscapes of learning.* New York, NY: Teachers College Press.

Greene, M. (2011). Releasing the imagination. *Drama Australia Journal, 34*(1), 1–9.

Green, S., & Johnson, R. (2010). *Assessment is essential*. Boston, MA: MGraw Hill.

Hamilton, M., Hamilton, D., & Zderic, T. (2007). Role of low energy expenditure and sitting in obesity, metabolic syndrome, type 2 diabetes, and cardiovascular disease. *Diabetes, 56*, 2655–2667.

Hancox, R. J., Milne, B. J., & Poulton, R. (2005). Association of television viewing during childhood with poor educational achievement. *Archives of Pediatrics & Adolescent Medicine, 159*, 614–618.

Have, M., Nielsen, J. H., Gej, A. K., Ernest, M. T., Fredens, K., Stockel, J. T., . . . Thomsen, E. M. (2016). Rationale and design of a randomized controlled trial examining the effect of classroom-based physical activity on math achievement. *BMC Public Health, 16*, 1–11. doi:10.1186/s12889-016-2971-7

hooks, b. (1994). Teaching to transgress: Education as the practice of freedom. New York: Routledge.

Jackson, P. W. (2013). The daily grind. In D. J. Flinders & S. J. Thornton (Eds.), *The curriculum studies reader* (4th ed., pp. 117–126). New York, NY: Routledge.

Jarrett, O., & Waite-Stupiansky, S. (2009). Recess—It's indispensable! *Young Children, 64*(5), 66–69.

Jennings, J., & Rentner, D. S. (2006). Ten big effects of the No Child Left Behind Act on public schools. *Phi Delta Kappan, 88*(2), 110–113.

June, S., Yaacob, A., & Kheng, Y. K. (2014). Assessing the use of YouTube videos and interactive activities as a critical thinking stimulator for tertiary students: An action research. *International Studies, 7*(8), 56–67

Karnes, F. A., & Bean, S. M. (2009). *Methods and materials for teaching the gifted* (3rd ed.). Waco, TX: Prufrock Press.

Kids Count. (2015). 2015 Kids Count data book. Retrieved from http://www.scchildren.org/advocacy_and_media/kids_count_south_carolina/2015_kids_count_data_book/

King, F. J., Goodson, L., & Rohani, F. (1998) Higher order thinking skills: Definitions, strategies, assessment. Retrieved from http://www.cala.fsu.edu/files/higher_order_thinking_skills.pdf

Kliebard, H. M. (2013). The rise of scientific curriculum-making and its aftermath. In D. J. Flinders & S. J. Thornton (Eds.), *The curriculum studies reader* (4th ed., pp. 69–78). New York, NY: Routledge.

Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development*. Englewood Cliffs, NJ: Prentice-Hall.

Lancaster, E. A., Rikard, G. Linda (2002). Across the curriculum learning through movement. *Middle School Journal*, 33:3, 28-28.

Leander, K., & Boldt, G. (2013). Rereading "A pedagogy of multiliteracies": Bodies, texts, and emergences. *Journal of Literacy Research, 45*(1), 133-154.

Leander, K. M. & Sheehy, M. (2004). Spatializing literacy research and practice. New York: Peter Lang.

Let's move! Active schools. Retrieved from http://www.letsmoveschools.org/

Levin, I., Siegler, R. S., & Druyan, S. (1990). Misconceptions about motion: Development and training effect. Child Development, 61(5), 1544-57.

Levin J., & Nolan, J. (2010). *Principles of classroom management: A professional decision-making model* (6th ed.). Boston, MA: Pearson.

Lillard, A. (2005). *Montessori: the science behind the genius*. New York:NY, Oxford University Press.

Lilly, T. K. (2011). Wrestling with the angels: Relocating the literacy practices of adolescent poets (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3471475)

Lister, D. O. (2005). Effects of traditional versus tactual and kinesthetic learning-style responsive instructional strategies on Bermudian learning-support sixth-grade students' social studies achievement and attitude-test scores. *Research for Educational Reform, 10*(2), 24–40.

Lozada, M., & Carro, N. (2016). Embodied action improves cognition in children: Evidence from a study based on Piagetian conservation tasks. *Frontiers in Psychology, 6*, 1–7. doi:10.3389/fpsyg.2016.00393

Mackenzie, N., & Knipe, S. (2006). Research dilemmas: Paradigms, methods and methodology. Issu*es in Educational Research, 16*, 193–205.

Mahar, M., Murphy, S., Rowe, D., Golden, J., Sheilds, A. T., & Raedeke, T. (2006). Effects of a classroom-based program on physical activity and on-task behavior. *Medicine & Science in Sports & Exercise, 38*, 2086–2094.

Marks, H.M. (2000). Student engagement in instructional activity: Patterns in the elementary, middle, and high school years. *American Educational Research Journal*, *37*(1). 153.

McNeil, L. (2000). Contradictions of school reform: Educational costs of standardized testing. New York: Routledge/Farmer.

Mertler, C. A. (2014). *Action research: Improving schools and empowering educators* (4th ed.). Thousand Oaks, CA: Sage.

Mobley, K., & Fisher, S. (2014). Ditching the desks: Kinesthetic learning in college classrooms. *Social Studies, 105*, 301–309.

Moje, E.B. (2004) Powerful spaces: *Tracing the out-of-school literacy spaces of Latino/a youth.* In K. Leander and M. Sheehy (Eds.), Spatializing Literacy Research and Practice (pp. 15-38). New York, Peter Lang.

Montessori, M. (1965) *Spontaneous activity education*. New York, NY: Schocken Books Inc.

Montessori, M. (1967). *The absorbent mind* (C.A Claremont, Trans.). New York, NY: Henry Holt.

Montessori, M. (2013). A critical consideration of the new pedagogy in its relation to modern science. In D. J. Flinders & S. J. Thornton (Eds.), *The curriculum studies reader* (4th ed., pp. 19–31). New York, NY: Routledge.

Moreau, D. (2015). Brains and brawn: Complex motor activities to maximize cognitive enhancement. *Educational Psychology Review, 27*, 475–482.

Morgan, D. (n.d.). Paradigms lost and pragmatism regained methodological implications of combining qualitative and quantitative methods. *Journal of Mixed Methods Research, 1*(1), 48–76.

Moss, M.C., Scholey, A.B., & Wesnes, K. (1998). Oxygen administration selectively enhances cognitive performance in healthy young adults: a placebo-controlled double-blind crossover study. *Psychopharmacology, 138*(1), 27.

Mullender-Wijnsma, M. J., Hartman, W., de Greef, J. W., Bosker, R. J., Doolaard, S., & Visscher, C. (2015). Improving academic performance of school-age children by physical activity in the classroom: One-year program evaluation. *Journal of School Health, 85*, 365–371. doi:10.1111/josh.12259

National Association of Early Childhood Specialists in State Departments of Education. (2001). *Recess and the importance of play: A position statement on young children and recess*.

National curriculum standards for social studies: Introduction. (n.d.). Retrieved from http://www.socialstudies.org/standards/introduction

Ozmon, H. (2012). *Philosophical foundations of education* (9th ed.). Upper Saddle River, NJ: Pearson.

Pashler, H., McDaniel, M., Rohrer, D., & Bjork, R. (2009). Learning styles: Concepts and evidence. *Psychological Science in the Public Interest, 9*(3), 105–119. doi:10.1111/j.1539-6053.2009.01038x

Paul, R. W., Elder, L., & Bartell, T. (1997). California teacher preparation for instruction in critical thinking: research findings and policy recommendations. *California Commission on Teacher Credentialing.* Sacramento, CA.

Piaget, J. (1952). The origins of intelligence in children, 8(5), 18. New York: International Universities Press

Perry, M., & Medina, C. (Eds.) (2015) *Methodologies of embodiment: Inscribing bodies in qualitative research.* New York: Routledge.

Piaget, J., & Gabain, M. (1965). *Judgment and reasoning in the child.* London: Routledge.

Posner, G., & Rudnitsky, A. (2006). *Course design: A guide to curriculum development for teachers* (7th ed.). Boston, MA: Pearson.

Powell, S. D. (2015). *Introduction to middle level education* (3rd ed.). Boston, MA: Pearson.

Ramstetter, C., Murray, R., & Garner, A. (2010). The crucial role of recess in schools. *Journal of School Health, 80*, 517–526. doi:10.1111/j.1746-1561.2010.00537.x

Randolph, J. (2009). A guide to writing a dissertation literature review. *Practical Assessment, Research, & Evaluation,* 14, 1–13.

Rasberry, C. N., Lee, S. M., Robin, L., Laris, B. A., Russell, L. A., Coyle, K. K., & Nihiser, A. J. (2011). The association between school-based physical activity, including physical education, and academic performance: A systematic review of the literature. *Preventive Medicine*, *52*, S10–S20.

Richards, T. (2012). Using kinesthetic activities to teach Ptolemaic and Copernican retrograde motion. *Science & Education, 21*, 899–910

Robert Wood Johnson, F., & National Association of Elementary School, P. (2010). *The state of play: Gallup survey of principals on school recess.* Robert Wood Johnson Foundation.

Rohrer, Tim. "The Body in Space: Embodiment, Experientialism and Linguistic Conceptualization." In Body, Language and Mind, vol. 2. Zlatev, Jordan; Ziemke, Tom; Frank, Roz; Dirven, René (eds.). Berlin: Mouton de Gruyter, forthcoming 2007.

Rousseau, J-J. (1979). *Emile or, on education.* New York, NY: Basic Books.

Ryan, R.M. & Deci, E.L. (2000). Self-Determination Theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55*(1), 68-78.

Schiro, M. S. (2013). *Curriculum theory: Conflicting visions and enduring concerns* (2nd ed.). Thousand Oaks, CA: Sage.

Schulte, P. L.. (2005). Social studies in motion: learning with the whole person. *Social Studies and the Young Learner, 17*(4), 13-16.

Sisson, S. B., Church, T. S., Martin, C. K., Tudor-Locke, C., Smith, S. R., Bouchard, C., . . . Katzmarzyk, P. T. (2009). Profiles of sedentary behavior in children and adolescents: The U.S. national examination survey, 2001–2006. *International Journal of Pediatric Obesity, 4*(4), 353–359. doi:10.3109/17477160902934777

Society of Health and Physical Educators & American Heart Association. *2016 shape of the nation report: Status of physical education in the USA*. Retrieved from http://www.shapeamerica.org/advocacy/son/2016/upload/Shape-of-the-Nation-2016_web.pdf

Soffe, S. M., Marquardt, M. J., & Hale, E. (2011). Action learning and critical thinking: A synthesis of two models. *Action Learning: Research & Practice, 8*, 211–230. doi:10.1080/14767333.2011.614927

Spring, J. (2014). *The American school, a global context: From the Puritans to the Obama administration* (9th ed.). New York, NY: McGraw-Hill Education.

South Carolina Department of Education. (2011). *Support Documents for Social Studies: Grade 6, Early Cultures to 1600.* Columbia, SC. Retrieved from http://ed.sc.gov/scdoe/assets/file/agency/ccr/Standards-Learning/documents/FINALAPPROVEDSSStandardsAugust182011.pdf

Stevens, R. (2015). Role-play and student engagement: Reflections from the classroom. *Teaching in Higher Education, 20*(5), 481–492.

Stewart, J. A., Dennison, D. A., Kohl, H. W., & Doyle, J. A. (2004). Exercise level and energy expenditure in the Take 10! in-class physical activity program. *Journal of School Health, 74*, 397–400.

Talburt, S. (2000). Subject to identity: Knowledge, sexuality, and academic practices in higher education. Albany, NY: State University of New York Press.

U.S. Census Bureau. (2014). *Quick facts.* Retrieved from http://www.census.gov /quickfacts/table/PST045215/4529815

Vygotsky, L. S. (1978). *Mind in society: The development of higher mental process*

Weber, L. (2010). *Understanding race, class, gender, and sexuality* (2nd ed.). New York, NY: Oxford University Press.

Wiersma, W., & Jurs, S. G. (2009). *Research methods in education: An introduction* (9th ed.). Boston, MA: Pearson Education.

Wigal, S. B., Emmerson, N., Gehricke, J., & Galassetti, P. (2013). Exercise: Applications to childhood ADHD. *Journal of Attention Disorders, 17*, 279–290. doi:10.117 /1087054712454192

Willis, R. (2009). Playful learning: Concerns about the British primary school curriculum made their way onto the political agenda last year with the publication of the interim Rose report. *History Today, 2*, 20.

Younger, A. A., Pettitt, R. W., Sexton, P. J., Maass, W. J., & Pettott, C. D. (2016). Acute moderate exercise does not attenuate cardiometabolic function associated with a bout of prolonged sitting. *Journal of Sports Sciences, 34*(7), 658–663.

Zeichner, K. (1993). Action research: personal and social reconstruction. *Educational Action Research*, (*1)*2, 199-219.

APPENDIX A – SAMPLE WORKSHEET

Ancient India Web: *quatr.us/india*

Click on Indian History

1. When did the first people reach India?
2. Where did the first people to reach India come from?
3. Near what river did the first Indians settle?

Go to the menu on the left side of page, under Daily Life in India, click Indian Environment

4. What was the weather like most of the year in India?
5. What were the monsoons?

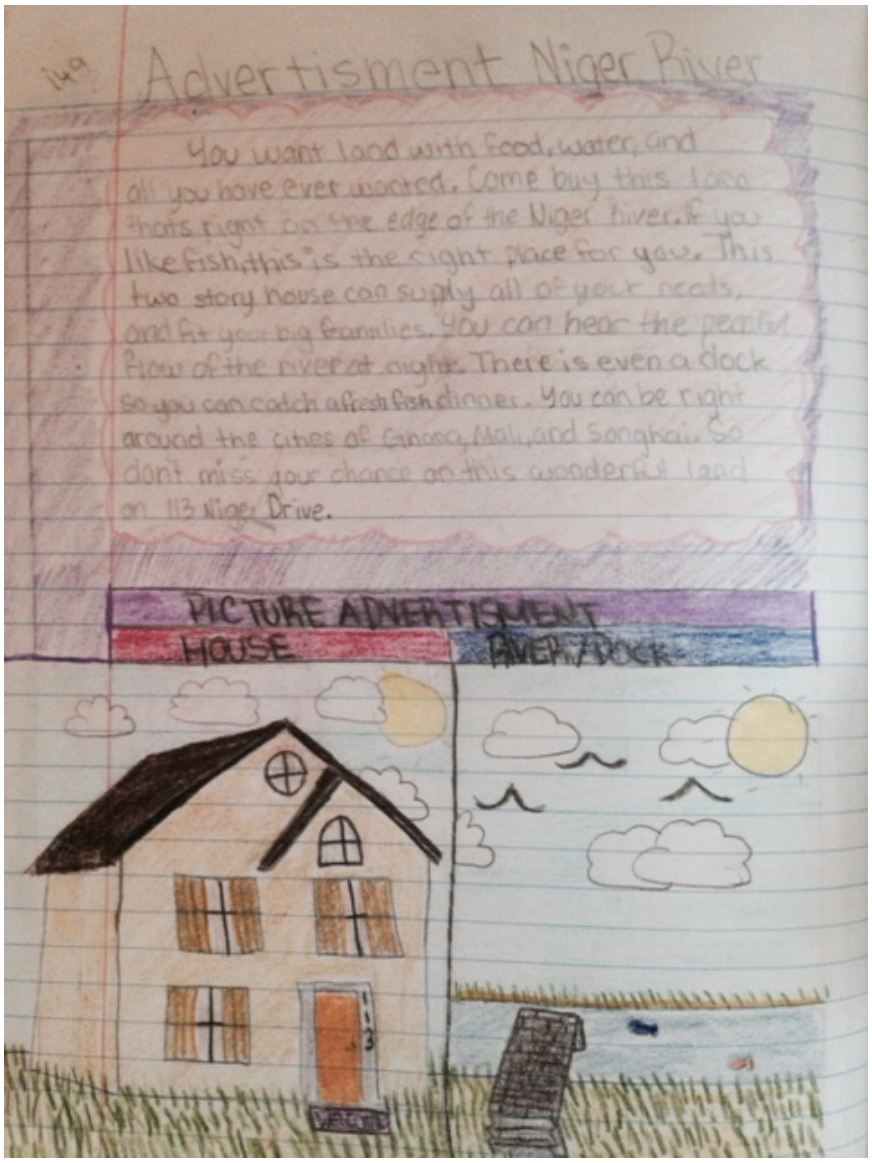
Go to the menu on left side of page, under More About, click on Indian Religion

6. What three religions have been important in India?
7. True or False: The first Indian people, the Harappan, were polytheistic.
8. What is reincarnation?

Go to the menu on left side of page, click on Daily Life in India

9. What were castes?
10. True or False:Castes gave some people rights and privileges other people did not get.
11. What kinds of jobs did untouchables have?

APPENDIX B – SAMPLE JOURNAL WRITING



APPENDIX C – PRE-PROJECT SURVEY

What helps you really understand something?

A. Reading about it
B. Listening to someone explain it
C. Physically doing it
D. Seeing it

What is more memorable for you?

A. Reading stories
B. Listening to someone explain it
C. Acting out stories
D. Seeing stories

APPENDIX D – PRETEST-POSTTEST MIDDLE AGES

Match the medieval person on the left with what they might save thought:

1. ___A knight — a. I work, pray, and write in a monastery
2. ___Charlemagne — b. I follow a code of chivalry and owe allegiance to my lord
3. ___A vassal — c. I work and pray in a convent
4. ___A monk — d. I promise to fight when needed in exchange for land
5. ___A nun — e. I united most of Western Europe & ensured it was Christian.

6. Which of the following might be that of a serf?
   A. Dear Diary, I am thrilled to go to Jerusalem and fight to reclaim the Holy Land for Christians.
   B. Dear Diary, I am not so thrilled to till the land again, but if that's what I have to do to be safe in this land, so be it.
   C. Dear Diary, Idle hands is the work of the devil.
   D. Dear Diary, the emperor from Constantinople just wrote that he needs help reclaiming land in the east.

7. How might this conversation end?

Tim, *"If I'm going to be a specialist in woodwork, I need to become an apprentice first."*
Bill, *"Being an apprentice sounds great! You work under the experts in the field. What happens next?"*
Tim,"_____."

8. Find the inaccuracy in the following statement.
   " King John worked with nobles in order to restrict unlimited government."

9. What's the significance of the pope's actions? "You will receive an indulgence if you take a pilgrimage to Jerusalem.

10. What is the eventual solution during the Middle Ages to the following problem?
    Problem: A person in a village comes down with the bubonic plague.
    Solution:_____

APPENDIX E – PRETEST-POSTTEST RENAISSANCE

Match the medieval person on the left with what they might save thought:

1. ___ Leonardo da Vinci — a. I can read the Bible in my own language!
2. ___Michelangelo — b. I have a lot of interests and am good at a lot of things!
3. ___Johannes Gutenberg — c. I sparked many Christian denominations!
4. ___Martin Luther — d. My larger than life work is valued in the Catholic Church.

5. Which statement would come from the perspective of a Calvinist?

   a. God has already determined who is saved when people are born.
   b. One is saved through faith alone.
   c. I follow the Church of England.

6. How might this conversation end?
   Galileo: *"The sun does not revolve around the earth."*
   The Church: *"Yes, it does."*
   Galileo: "*No, it does not. Look here through my telescope."*
   The Church: "_____"

7. What is the significance of the following action?

I will add perspective and shading to this painting.

8. Find the inaccuracy in the following statement:

Renaissance thinkers thought there was little use in studying ancient philosophers like Plato.

9. What is the eventual solution to the following Medieval problem?

Problem: Books are so expensive since it takes so long for them to be copied.
Solution: _____

APPENDIX F – KINESTHETIC COGNITIVE ACTIVITIES

(Adaptable to grade level and subject area at the time of study approval)
Goal: to increase critical thinking skills by implementing kinesthetic activities.

Creatively Recreating History

Five student teams of 4-6 students will be formed either by teacher or by student choice.

Teams will create a scene from history and present it in a three to five-minute skit.

1. Teams will present the skit according to historical facts from class materials.

2. Teams will recreate the skit according to a "what if" change that the teacher proposes.

An example may be: What would happen if rivers ran dry?

3. Teams will discuss the possibilities for new outcomes resulting from the "change".

APPENDIX G – POST-PROJECT LIKERT SCALE SURVEY

Directions: Circle the answer that best describes how you feel. Participation is voluntary and will not affect your grade. These surveys are anonymous, so please feel free to be truthful. This survey will help me to learn more about how you feel about social studies. Use the scale below.

Comment	Very Much	much	little	Very Little
I feel social studies is useful.	Very Much	much	little	Very Little
I learn more when I watch videos about what we study.	Very Much	much	little	Very Little
I feel that reading about social studies is easy.	Very Much	much	little	Very Little
It's easy for me to concentrate on SS when I am in a SS skit	Very Much	much	little	Very Little
I like acting out what we are learning in social studies.	Very Much	much	little	Very Little
I prefer to work by myself.	Very Much	much	little	Very Little
I feel happy when I move around.	Very Much	much	little	Very Little
I think my classmates can help me understand social studies when I don't understand.	Very Much	much	little	Very Little
I enjoy listening about what we are learning.	Very Much	much	little	Very Little
When I move around, I think about what might happen next.	Very Much	much	little	Very Little

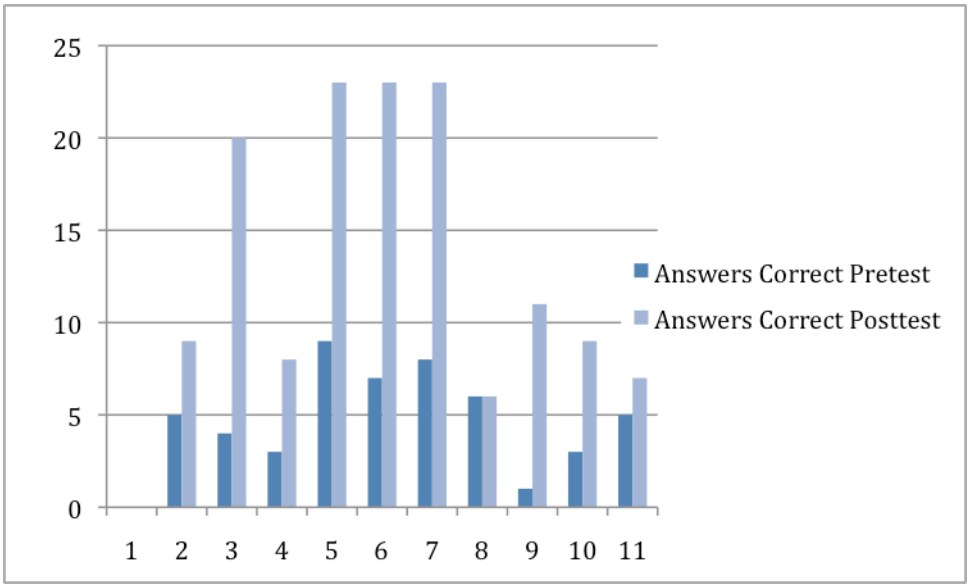
APPENDIX H – POST-PROJECT INTERVIEW

1. What are disadvantages of kinesthetic learning, or physically acting out history?

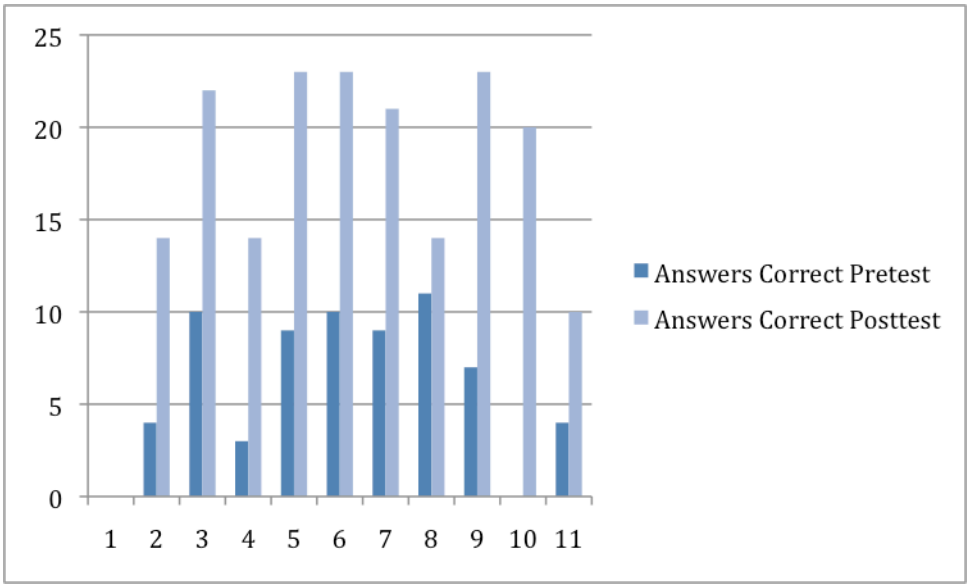
2. What are the advantages of kinesthetic learning or physically acting out history?

APPENDIX I – PRETEST-POSTTEST MIDDLE AGES RESULTS

1st Block Middle Ages Pretest-Posttest

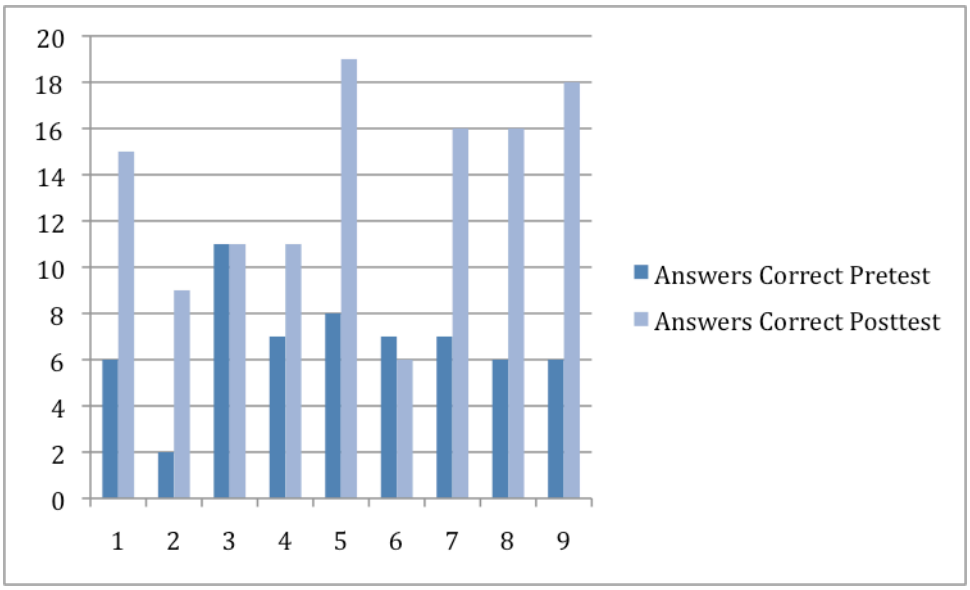


2nd Block Middle Ages Pretest-Posttest



APPENDIX J – PRETEST-POSTTEST RENAISSANCE RESULTS

1st Block Renaissance Pretest-Posttest



2nd Block Renaissance Pretest-Posttest