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## The Impact Of A Peer-Teaching Instructional Approach On A Student's Self-Confidence

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THE IMPACT OF A PEER-TEACHING INSTRUCTIONAL APPROACH ON A  
STUDENT'S SELF-CONFIDENCE

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## DEDICATION

I dedicate this work to my loving wife, who allowed me to complete a life-long goal of earning a Doctorate degree in Education. There were many days and nights without you, and I could not have done this without your love and support. I also dedicate this to my parents who encouraged me with love and support. Dad, thank you for pushing me to realize my dreams by and sticking with me when times were tough. Your encouragement was a continuous flow of positive love. I also want to thank Dr. Diane Harwell, who gave me guidance and confidence to pursue my dreams in education.

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## ABSTRACT

This study examines a problem of practice stemming from students not given the same opportunities to use and develop self-confidence and take on higher levels of responsibility in the classroom as they prepare for the 21<sup>st</sup> century workforce in our society. Recognizing a problem of practice evident in our high school with low-self-esteem in students, this paper studies the effects of implementing a peer-teaching instructional approach to help develop students' self-confidence and emerging leadership skills (Lockie & Van Lanen, 2008). The central research question addressed in this study is: what is the impact of implementing a peer-teaching instructional approach on a student's self-confidence? This is a mixed method case study. The action research methodology used in this study was Mertler's (2017) four stages of action research cycle. The planning phase resulted in the problem of practice, a review of literature, a targeted research question, and a research plan. The acting phase included collecting and analyzing data through a student survey, interviews, student questionnaire, observations, and student artifacts by a teacher-researcher. The developing phase involved the creation of an action plan based on the analysis of data. Finally, the reflecting phase involved the results and reflection of the study.

Keywords: peer-teaching, JROTC, leadership, action research, self-confidence

## TABLE OF CONTENTS

DEDICATION .....	iii
ACKNOWLEDGEMENTS .....	iv
ABSTRACT .....	v
LIST OF TABLES .....	ix
CHAPTER 1: INTRODUCTION.....	1
STATEMENT OF THE PROBLEM.....	3
STUDY RATIONALE .....	6
A SOCIAL JUSTICE PERSPECTIVE TO PEER-TEACHING.....	9
PURPOSE STATEMENT .....	11
RESEARCH QUESTION.....	13
THEORETICAL FRAMEWORK.....	13
PEER-TEACHING IN THE JROTC CLASSROOM .....	15
ACTION RESEARCH METHODOLOGY .....	18
CONCLUSION.....	21
KEY WORDS.....	22
CHAPTER 2: REVIEW OF RELATED LITERATURE .....	25

THEORETICAL FRAMEWORK .....	27
THEORIES OF CURRICULUM AND PEER-LEARNING .....	30
COGNITIVE AND SOCIAL PEER SUPPORT .....	33
A SOCIAL JUSTICE PERSPECTIVE TO PEER-LEARNING.....	38
PEER-LEARNING PROGRAMS .....	41
PEER-TEACHING IN MIDDLE AND HIGH SCHOOLS .....	49
A COUNTER-ARGUMENT TO PEER-TEACHING.....	53
CONCLUSION.....	56
CHAPTER 3: METHODOLOGY .....	59
SCHOLARLY LITERATURE.....	60
ACTION RESEARCH DESIGN .....	61
ACTION RESEARCH METHODOLOGY .....	62
PARTICIPANTS AND SETTING.....	62
PLAN FOR DATA COLLECTION .....	64
PLAN FOR DATA ANALYSIS .....	67
TEACHER-RESEARCHER ROLE .....	71
POTENTIAL WEAKNESSES .....	72
ETHICAL CONSIDERATIONS IN ACTION RESEARCH .....	73
ACTION RESEARCH VALIDITY .....	73



CONCLUSION.....	75
CHAPTER 4: FINDINGS .....	76
INTERVENTION.....	76
ANALYSIS OF DATA.....	94
CONCLUSION.....	96
CHAPTER 5: DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS .....	98
RESULTS RELATED TO EXISTING LITERATURE.....	101
PRACTICE RECOMMENDATION.....	105
ACTION PLAN FOR FUTURE CYCLES OF ACTION RESEARCH .....	107
LIMITATIONS OF THE STUDY.....	108
CONCLUSION.....	110
REFERENCES .....	113
APPENDIX A—INTERVIEW QUESTIONS.....	127
APPENDIX B—PEER-TEACHING QUESTIONNAIRE .....	128
APPENDIX C—PEER-TEACHING STUDENT SURVEY .....	129

## LIST OF TABLES

Table 4.1 Coding scheme: Peer-teaching data.....	78
Table 4.2 Student survey responses .....	80
Table 4.3 Student survey description.....	82
Table 4.4 Student responses to questionnaire .....	84
Table 4.5 Responses to interview questions .....	86
Table 4.6 Emerging trends and patterns .....	96

## CHAPTER 1

### INTRODUCTION

Over the last several years, high stakes testing has influenced schools throughout the United States. Data driven learning strategies have been implemented to raise test scores primarily in the core subjects of Math, Science, English and Social Studies. Teachers are under pressure to teach what is covered by standards-based curriculum. Additionally, the impact of a school's effort on student learning is continually changing based on increased diversity in schools and the explosion of technology. As we continue to foster Professional Learning Communities (PLC) with teachers, school leaders, parents and all other stakeholders, "data driven" instruction is putting pressure on students with increased testing and the need to improve scores (The Center for Public Education, 2018). Test-based curriculum plans and strategies to address the "normal curve" of student achievement is dehumanizing. It diminishes learning in the classroom and fails to address social and emotional needs of the students who are failing to learn in the classroom (Reyes & Villarreal, 2016). Children must experience the excitement and success in quality teaching and learning. Curriculum cannot be designed, nor can student learning be evaluated, that guarantee that some students must fail (Dudling-Marling, & Gurn, 2010,). Test driven curriculum diminishes students the fair and equal opportunity to learn effectively in the classroom.

As professionals in education, teachers have the knowledge and expertise to utilize the best practices available to improve student's academic deficiencies and at the same time establish an equitable and fair learning environment for all learners. An effective peer-teaching instructional approach, under the umbrella of a Project Based Learning (PBL) environment, allows diverse students of different race, color, gender, and social class opportunities to not only learn content, but also develop 21<sup>st</sup> Century work skills in our democratic society ("K12 Thoughtful learning," 2017). Peer-learning is a natural part of what we do daily. We seek information and advice from many resources; friends, classmates, colleagues, information technology, tips from newspapers, social media, and television programs. In this setting, peer-learning may not be a formal learning [strategy], but it meets the needs of most people in a timely manner (Boud, 2001). In this study, peer-teaching as an instructional strategy in a classroom can be defined as students, who are not school teachers, helping other students to learn content.

Topping (2005) views peer-teaching as an instructional approach that builds self-confidence and provides a pathway to reconnecting with our students by bringing rigor, expectations and relationships into the classroom resulting in student growth. A benefit of peer-teaching is reciprocal peer-learning; students simultaneously learning and sharing other students' learning and making equal contributions (Boud, 2001). There is mutual and cooperative collaboration and a "higher" sense of responsibility in this setting (Lockie & Van Lanen, 2008). Having implemented a peer-teaching in the Junior Reserve Officer Training Corps (JROTC) program for several years, I observed growth and development in student self-regulation, metacognition/self-reflection and autonomy.

Peers working together can bring their social skills into the classroom and connect their experiences or knowledge to new subject content (Nieto, 2013). Boud (2001) explained:

The advantage of learning from people you know is that they are or have been in a similar position to oneself. They have faced the same challenges as ourselves in the same context, they talk to us in our own language and we can ask them what may appear in other situations to be silly questions (p. 1).

Using a peer-teaching instructional approach in a Junior Officer Training Corps (JROTC) classroom, students are given the necessary resources, and emotional support to help them understand subject content, and to prepare and teach their peers. When students use these same resources to teach others, they come to understand that they are unique individuals with special talents. As you will read in Chapter 2 of this study, there is ample research to support the positive impact, peer-teaching has on a student 'self-confidence, and other leadership attributes (Morrison, 2004; Johnson, 2015; Lockie, & Van Lanen, 2008); and improvement in their academic subjects (Korner & Hopf, 2015; Bruno, et al., 2016). As a retired Army officer teaching JROTC in public schools for 20 years, I have witnessed the benefits of peer-teaching by students and the effect it has on developing self-confidence and improving student growth in the classroom. Utilizing an action research framework as a teacher-researcher at Great Falls Middle-High School (GFMHS), I will examine a peer-teaching instructional approach on student's self-confidence and the effects it has on student growth.

### **Statement of the Problem**

The problem of practice for this study stems from students attending a Title 1 rural high school not being given the opportunity to develop self-confidence and take on

higher levels of responsibility in the classroom as they prepare for the 21<sup>st</sup> century workforce in our society (“K12 Thoughtful Learning,” 2017). In traditional educational settings, students are not afforded a chance to develop self-confidence and other personal attributes such as metacognition/self-reflection, self-regulation, autonomy, and oral fluency. Many students are unable to learn in traditional settings but gain self-confidence and develop creativity in a peer-teaching environment (Zhbanova, Rule, & Stichter, 2013). Traditional practices in the classroom usually include lecture teaching method, giving instructions, asking questions, handing out worksheets, and monitoring seatwork (Nieto, 2013). Traditional teaching is concerned with the teacher being the controller of the learning environment. The teacher has power and responsibility and they play the role of the instructor (in the form of lectures) and decision maker (as it applies to curriculum content and specific outcomes). They view students as having ‘knowledge holes’ that need to be filled with information. In short, it is the teacher that causes the learning to occur (Novak, 1998). A classroom that is teacher-directed and based on obedience and constraint is not going to benefit from peer-teaching. A student working in groups will more than likely please the teacher and less likely to share ideas in an opened-ended fashion (De Lisi, 2002). Peer-teaching as an instructional approach is much like Problem Based Learning (PBL) that empowers the students to take charge of their learning and focuses on the student not the curriculum. Peer-teaching as an instructional approach in the classroom empowers the students to take charge of their learning. The teacher creates the learning environment for the students to learn subject content. However, it is the students that choose to learn in a project-based learning environment (Markham, 2012).

Developing self-confidence through a leadership experience is one of our core competencies in the JROTC program. Cadets/students are taught leadership content along with “hands on” experience and given a chance to use and develop their leadership skills with their peers. They develop these skills by constructing and presenting Power Point presentations, leading other cadets in marching drill and physical fitness training or participating in after school activities such as parades and community projects. Under these leadership experiences, some students assume leadership positions above and beyond their classroom requirements and develop “higher” levels of responsibility. These additional responsibilities become especially evident in students who are extroverts and less evident with students who are introverts or shy (Wielkiewicz, Fisher, Stelzner, Overland, & Sinner, 2012).

Another problem in our school is that some students fail to develop self-confidence even when given opportunities to lead their peers. They allow the stronger and more confident students to take the lead in daily activities in the classroom. Working in public schools for many years, I have observed struggling students demonstrating a lack of confidence in their ability to communicate with their peers and take on projects that require planning, preparation and delivering a finished assignment or project. Peer-teaching as an instructional approach can benefit students because they are socially interacting with their peers and working as a team (Johnson et al., 2015). This approach allows the teacher-researcher to use differentiated instruction by taking on the role of a mentor, coach and facilitator in a peer-learning classroom. The teacher creates an environment, in which a students’ uniqueness are important as the traits they share, assesses their presentations through formative assessments, and plans the peer-learning

experience, held together by common goals (Doubet, & Hockett, 2015). This involves all students who are working together on a “level playing field” in a cooperative spirit to accomplish a common goal of planning, preparing, and teaching content to their peers.

### **Study Rationale**

Today, teachers are under pressure to raise test scores. A “data driven” mindset has become far too common in this school. With the pressures of teaching the “test”, and intensely monitoring test scores of students, school practitioners are neglecting to teach critical 21<sup>st</sup> century work skills required to prepare students for their future success (“K12 Thoughtful Learning,” 2017). Unlike other research conducted on peer-teaching, this study specifically targets a diverse classroom of JROTC cadets and examines the impact it has on each student’s self-confidence. This study is unique in that the teacher is also the researcher. Peer-teaching as an instructional approach moves away from a traditional lecture type teaching method to Project Based Learning (PBL) which allows students to learn by doing and applying ideas to a given task or project. PBL involves students applying what they are learning in the classroom to solve real problems and produce results that matter. PBL gives teachers an opportunity to teach, observe and evaluate real-world skills, and focuses on the education of students, not on the curriculum (Markham, 2012). “Students engage in real, meaningful problems that are important to them and that are similar to the activities that adult professionals engage in” (Krajcik, & Blumenfeld, 2006, pp 317-318). It has been my experience that students become motivated to learn when they are engaged in what they perceive is meaningful and beneficial to their lives.

Divergent thinking also plays a major role in how the students plan and deliver content to their peers. This also includes the non-traditional students that are



nonconformists, willing to take risks and learn from a “hands on” approach to learning and benefit from the use of non-traditional teaching methods such as: discussions, demonstration, practical exercises (creating Venn diagrams, Mapping, Bubble maps, Fishbone diagrams), brainstorming, case study, and gaming (U. S. Army JROTC, 2005). Many students in my class are divergent learners and like to engage and interact with their peers during this peer-teaching experience. They have a strong desire to socialize and develop interpersonal relationships. Peer-teaching is a collaborative environment where dialogue, friendly debate, deliberation, and reflection are applied by students (Hawks, 2007). Students feel less intimidated by the teacher because they are working with their peers. Thus, the teacher becomes a facilitator, working with small groups of students, interacting with them and helping them plan and prepare their lessons. A peer-learning environment is a holistic approach that “fits” a classroom of diverse students. One of my students with a troubled life, excelled in my classroom and enjoyed her peer-teaching experience.

Janet is one of several non-traditional JROTC students that excelled in a peer-teaching instructional approach in the classroom. She was an African-American raised by a single mother and a step-father. Her relationship with her mother was good, but not with her step-father. She claimed that he was manipulative and a “jerk.” She met her biological father a few times over the years but does not have a close relationship with him. He is in prison for drug possession. Janet is an angry student that has no structure in her family. She does what she wants to do in and out of her home. Smoking marijuana is common in her life. Her parents also smoke and drink. Life in school as she puts it, “is a joke.” She sees school as a social calling to flirt with her peers and have a fun time. She

gets along with most teachers when she wants to. Janet is a smart student according to her teachers, popular and friendly with her peers, but has been suspended numerous times over this past three years for drug use, skipping class, arguing with teachers, coming to class excessively late and leaving classrooms for no reason.

Aware of Janet's past, I needed to find a way to keep her focused and motivated with her studies, keep her in class, and help complete her student work on time. Working in a PBL environment and using a peer-teaching instructional approach was a "right" fit for Janet. She quickly realized that my classroom was not a traditional classroom like other classroom that consisted of lecture, individual work, question and answer activity at the end of class, and monitoring seatwork. Using her well-developed social skills, she quickly embraced peer-teaching and conformed to my classroom procedures. This was her chance to show her peers that she was a leader and could motivate her peers. Her teaching style was "high energy" filled with fun activities which motivated her peers. She seemed to enjoy teaching and leading others. Although she was considered a "problem child" by other teachers and school administrators, Janet came to my class on time and completed her work on time. She was a good student and excelled in JROTC.

Over the course of a semester, I had several conversations with Janet about her behavior and troubles at home. Using a peer-teaching instructional approach in the classroom was a challenge for her. She liked the structure of the class and enjoyed working with her classmates learning content and turning around and sharing what she learned with her peers. She felt this experience was relevant in her chaotic life. She "bought into" the idea that she needed to work on her leadership and presentation skills that she would need after graduation. Janet's story is a reminder that traditional teaching

methods are not allowing some students to learn content and value what they are learning.

Having implemented a peer-teaching instructional strategy in the last several years, I have seen an amazing transformation take place with my students. They work together, solving problems, reflecting on their lessons and at the same time developing self-confidence and leadership skills (Zaritsky, & Toce, 2006). Peer-teaching encourages students to work with each other, develops critical self-reflection, and communication skills, allowing students to articulate their gained knowledge. Peer-teaching manages learning, and how to learn (Boud, 2001). A peer-teaching instructional approach can be an effective strategy and can bring about major change in the school setting in an economically depressed community. School-wide peer-teaching can about improvements in student discipline, self-confidence, and motivation. In this study, conducting an action research study allows teachers to study their own classrooms, gather information, study how their students learn, and help improve the quality of learning in their classrooms (Mertler, 2017).

### **A Social Justice Perspective to Peer-Teaching**

When you examine a social justice perspective in this study, a peer-teaching approach provides opportunities for diverse students to have equal access to learning and develop 21<sup>st</sup> Century leadership transferable skills they will use in the workforce outside of a school setting (Thoughtful Learning, 2017). A social justice approach to peer-teaching focuses primarily on the student along with subject content and their contributions to classmates, school, and community. Peer-teaching allows teachers to develop relationships with their students. Nieto (2013) explains:

It's about knowing how to create an environment to foster humanity, to foster human relationships; when you do that, the content will be so much easier to transmit because you're in a conversation with people and with that conversation you are telling a story (p. 35).

Working in Title 1 schools for 18 years mentoring, coaching, and teaching poor and disadvantaged students from broken homes and dysfunctional families, I have observed students with lower self-esteem, lacking self-confidence in their ability to learn in the classroom. A peer-teaching instructional approach allows students to develop relationships with their peers and collaborate with students of different racial backgrounds on a level "playing field." Students can share their knowledge without fear of intimidation or ridicule from their peers. Students feel a sense of accomplishment knowing that they are sharing their gained knowledge with their peers which can raise their self-confidence and motivation to improve learning content (Bruno, et al., 2016). This collaboration through group socialization is a path in which students, over time, can develop their identities and self-concepts and shape their future interactions (Nieto, 2013). According to Harris and Meltzer (2015), peer-teaching and tutoring affects a student's motivation, self-confidence, behavior, and attitude about learning and academic achievement. "Students often develop a stronger understanding of their own strengths and weaknesses as a result of the feelings of competence and autonomy prompted by their mentoring and coaching roles" (p. 4). This is important because it develops their self-confidence and strengthens their ability to problem-solve (meta-cognition).

John Franklin Bobbitt, a progressivist in 1918, believed "scientific experts should design curricula based upon their expert knowledge of what qualities are desirable in

adult members of society” (Bobbitt, 2017; Schramm-Pate, 2016). Bobbitt reasoned that curriculum must conform to the needs of an individual and to the workforce of our society. Students should not be taught what they would never use. Education to Bobbitt was preparing young people for adulthood. A peer-teaching instructional approach used in the classroom promotes the skills and personal attributes necessary to become a productive and competitive citizen in the United States. John Dewey (1938), also involved in the progressive movement, believed that American education at the turn of the twentieth century was too focused on discipline, order, hierarchal control and the “three R’s” (reading, writing and arithmetic). Schramm-Pate believed that Dewey promoted individual growth and development as well as group interaction, cooperative learning, and team building.

Peer-teaching is much like Project Based Learning, applying integrated curriculum along with subject content (Markham, 2012). Curriculum can be virtually any combination of subjects (Math, Science, Language Arts, Social Studies) incorporated in a common idea or themes. (Drake, 2012). Peer-teaching cuts across disciplines. Students are critical thinkers, problem solvers, active learners, independent learners, and researchers (Schramm-Pate, 2016). They study, prepare and plan to teach content that is relevant to real world experiences outside the school setting.

### **Purpose Statement**

The purpose of this action research is to examine a student’s self-confidence based on the implementation of a peer-teaching instructional approach in the classroom by the teacher-researcher. Students not only teach the JROTC curriculum but teach younger students at the elementary school on the topic of the global economy and money

management in a partnership with Junior Achievement. Based on my experience and observation using a peer-teaching instructional approach in the classroom, students displayed an emerging self-confidence along with other attributes such as: self-regulation, oral fluency, metacognition/self-reflection, autonomy, and a higher sense of responsibility (Lockie, & Van Lanen, 2008).

The impetus for this study came from watching my students over the last several years, develop self-confidence teaching others JROTC curriculum. I found that teaching leadership subject content in my classroom was helpful in building a successful portfolio for students who were shy, at-risk, had low academic expectations, lived in poverty, and lacked confidence in their own social and academic capabilities. These diverse students wanted success and sought ways to break out of generational poverty. I have found that giving them a chance to feel successful in the classroom helped them find a path to success after high school. Peer-teaching was a good approach to make high school a more positive experience for them. Price (2008) explained the relationship between student and teacher in a peer-teaching environment:

Students are given the opportunity to belong to a positive peer group; a strong focus on motivation and self-discipline; an emphasis on academic preparedness and improvement; conscientious mentoring; close monitoring of how and what students are doing; accountability and consequences; teamwork; valuing the students and believing they can succeed; structure and routine; periodic recognition and rewards and a safe and secure environment (p. 30).

The relationship that the teacher has with students is important to the success of a peer-teaching experience. Through trial and error, I found over the last several years, students

were more likely to be motivated when interacting with their peers and coaching them on an individual basis.

Peer-teaching has been used for many years in education. It is prevalent in diverse schools where students from different academic levels work together to share their prior knowledge and help each other through difficult assignments, class work, and projects. It has also proven beneficial for students who struggle to learn content such as concepts, ideas, terms, and problem-solving in the classroom (Topping, 2005). The results of this study will assist teachers and school leaders develop school-wide learning strategies unique to this school and prepare students for the 21<sup>st</sup> century workforce (K12 Thoughtful Learning, 2017). Implementing a school wide initiative to incorporate peer-teaching in all classrooms can improve academic performance in the classroom and have a positive effect on the current “data driven” initiative in our school that struggles to “close the achievement gap.”

### **Research Question**

The teacher-researcher poses the following question to guide a mixed method case study to examine self-confidence of students enrolled in Junior Officer Training Corps at Great Falls Middle-High School: What is the impact of implementing a peer-teaching instructional approach on student’s self-confidence?

### **Theoretical Framework**

The theoretical framework for this study is based on the works of Piaget’s Theory of Cognitive Development and Vygotsky’s Sociocultural Theory; the process of peer influence and how we think and learn in our environment. Also, pertinent to this study are the basic models or theories of curriculum/discourses, which align to the peer-

teaching instructional approach which will be discussed in depth in Chapter 2. Piaget developed a model or theory of how humans go about making sense of their world by collecting and organizing information from infancy to adulthood. He identified four factors that interact to influence changes in thinking: biological maturation, activity, social experiences, and equilibration. According to Piaget, cognitive development in the learning cycle is influenced by social transmission, or learning from others (Woolfolk, 2008). In the absence of social transmission, we would need to relearn all the knowledge already offered by our culture. Activity is another influence. Piaget believed that learning was an interaction between peers because peers are on an equal basis and can challenge each other's thinking. "We act on our surroundings around us by exploring, testing, observing, organizing information and changing our thinking processes at the same time" (Woolfolk, 2008 p. 36). When peers get together as a group, ideas, and thoughts are expressed with mutual respect.

Vygotsky's Sociocultural Theory emphasized the role in the development of cooperative dialogues between children and more knowledgeable members of society. Children learn ways of thinking and behaving through these interactions. He believed that human activities take place in cultural settings and cannot be understood apart from these settings. He believed that higher cognitive development is co-constructed, defined as "a social process in which people interact and negotiate (usually verbally) to create an understanding or to solve a problem. The final product is shaped by all participants" (Woolfolk, 2008 pp. 50-51). These theories are the foundation of this study. Peer interactions and the influence they have on each other when they are teaching subject



content provides a positive opportunity to examine the emerging development of self-confidence.

### **Peer-Teaching in the JROTC Classroom**

A common practice in JROTC to give students the best opportunities to learn leadership skills is teaching JROTC content to their peers and teaching elementary aged student content on the economy and money management through a partnership agreement with the Junior Achievement (JA) Program. To prepare students to teach their peers JROTC content, students are taught by the teacher-researcher lessons on “teaching skills” outlined in the JROTC curriculum that are similar to the essential elements of instruction. The resources available for the student participants to prepare their JROTC and Junior Achievement lessons include an interactive curriculum software, which provides lesson plans, interactive presentation slides, and resources to deliver a successful lesson to their peers. Using these resources, the students work in pairs. They prepare to teach a lesson, prepare learning activities stated in the lesson plan, prepare an item-response quiz, gather the resources needed to deliver the lesson and rehearse their lessons before presenting a class to their peers. This process requires a good deal of responsibility and organizational skills, including cooperation, collaboration with each other and in some instance’s discussion with other student groups as they prepare their presentations.

Cooperative learning is a major benefit in the peer-teaching instructional approach that can have a positive effect on a student’s self-confidence. Students work with and depend on each other to accomplish a common goal and help each other achieve individual and group goals. Students work as a cohesive element (U. S. Army JROTC, 2002). Over the last 20 years cooperative learning in small groups has improved the

feasibility and quality of instruction and has allowed teachers to determine the needs of diverse learners. Small group strategies have proven to benefit students in the areas of academic achievement, motivation, self-efficiency, social development, and social acceptance. Peer-teaching in small group ensures individual accountability because the students do not want to disappoint their peers (Wilkerson, & Lequia, 2015).

In a cooperative spirit of peer-teaching, students begin to develop self-confidence, and personal attributes such as: leadership skills, metacognition/self-reflection, oral fluency, autonomy, and a strong desire or motivation to learn. During this process of planning, preparing, and teaching a lesson, the teacher-researcher acts as a facilitator, who coaches and guides students through the peer-teaching regimen. Student-participants also prepare mini-lessons and teach elementary aged students (K-4) five consecutive sessions at the elementary school in a partnership with Junior Achievement (JA). Like the JROTC lesson plans, (JA) provides a lesson plan booklet, and resources needed to prepare and teach about the economy and money management.

Whether they are peer-teaching JROTC students or younger students, they work in pairs, and depend on each other as they prepare their lessons taking responsibility for their actions and watching the fruits of labor pay off. The classroom is student-oriented, predictable and flexible. They have a voice in the classroom. They claim possession for their labors and work closely with their peers. Their voice counts. They confer with each other as they plan their classes. Motivation in the classroom is usually positive. Students demonstrate an openness with their classmates and exchange ideas that result in an increased level of understanding content and respect the other students' opinions and individuality (De Lisi, 2002). They embrace responsibility most of the time because they

do not want to disappoint their peers and especially their young students at the elementary school. Velez, Cano, Whittington & Wolf, (2011) studied peer-teaching activities and adds to the dynamics of this experience.

When learners engage in an activity with a person with whom they were obligated to obey, the learner feels a sense of constraint which can alter or discourage the learning process. On the other hand, when learners communicate with a truly equal peer, a feeling of cooperation emerges, forming a foundation for significant retained learning. (p. 41)

The power of peer interaction and what students can accomplish without being told what to do by the teacher was evident in the success of peer-teaching that I witnessed in the classroom. Students enjoyed the ownership of putting together their lessons and delivering the knowledge they gained with their fellow students.

In summation, the literature review of peer-teaching discussed in Chapter 2 provides evidence for peer-teaching as an effective instructional approach that promotes a student's self-confidence. This approach can be an effective learning strategy for teachers to use in the classroom, to promote student growth in academics and develop leadership skills. Peer-teaching in a PBL environment could be implemented in a variety of classroom settings and subject content. Peer-teaching as an instructional strategy builds student success in academics and growth in self-confidence (Topping, 2005; Morrison, 2004; Johnson, et al., 2015; Sporer & Brunstein, 2009). What also emerges from research studies are common personal behavioral or leadership characteristics that are observable and exhibited in the classroom: self-regulation, autonomy, and higher sense of responsibility, motivation, ownership, career goal-setting, and metacognition/self-

reflection. While most peer-teaching research focuses on academic achievement, learning retention, learning approaches, improved test scores, and academic achievement, there is limited research on how a peer-teaching instructional approach impacts a student's self-confidence.

### **Action Research Methodology**

Conducting action research on peer-teaching allows teachers to study their own classrooms and study how their students learn and improve the quality of learning in the classroom. Action research identifies an area of focus, collects data, analyses the data gathered and develops a plan of action (Mertler, 2017). It also can effect positive change in a school setting and improve the lives of students (Mills, 2014).

### **Research Site**

Great Falls Middle-High School (GFMHS) is a Title 1 school located in a rural area of Chester County in South Carolina. Great Falls is located in a blue collar, lower-middle class mill town. GFMHS is a combined complex composed of grades 6-12. The Middle-High school employs 47 teachers. The student-teacher ratio is about 12:1. Enrollment for the high school is 200 students, grades 9-12<sup>th</sup> (McKibben Demographic Research, 2018). There are 76 African-Americans, 120 Caucasians, two Asian- and two in the "other" category. Currently, 49 percent are males and 51 percent are female students. Approximately 67 percent are economically disadvantaged (U. S. News and World Report, 2018). Over 62 percent of all students are on free or reduced breakfast and lunch plans. Historically, in State Assessments, Great Falls High School has struggled to achieve above average proficiency in the core subject areas of Math, English, Science, and Social Studies. The trend over the last four years has been below average ACT

composite scores. In 2016 the average ACT scores were 16 to 17 in the core subjects of Math, Science Reading, and English. The graduation rate was 78 percent in 2017, above the State average ("South Carolina Department of Education", 2017).

Within the community of Great Falls, age groups are primarily composed of children and teenagers (under 20) and retirees (over 65). About 27.4 percent of households are managed by single parents (McKibben Demographic Research, 2018). Once a thriving mill town, Great Falls now suffers from high unemployment because of the closing of the mills over the past 20 years. Poverty is widespread in this community, especially with African-American families. With the loss of employment in this community, families have moved away and enrollment in the high school dropped significantly over the last 10 years.

### **Teacher-Researcher**

I am the primary teacher for the JROTC student-participants in this study. I have taught in public secondary schools for 20 years as a JROTC teacher. I have been at Great Falls Middle High School since 2001. My passion for teaching students grew out of the academic difficulties I encountered as a child moving around with my family as an "Army Brat." I attended numerous schools throughout the U. S. and Germany, developing new friends several times over the course of my childhood and teenage years. I became insecure over the changes occurring in my life. I also experienced low self-esteem, unmotivated in school academics and was afraid to take risks early in my life. However, watching my dad's progress as an Army Officer ultimately attain the rank Colonel and a mother who pushed academics in school, I found personal success over the years in the scouting program and getting "tough" love from my parents. They raised me

with high expectations and preached to me that, “to make it in this world you have to work hard and be responsible for your actions.” What I felt and experienced early in my life and to see the success I accomplished over the years motivated me to reach out and help my students experience success in the classroom. Today, I see myself in my students, who are unmotivated, afraid to take chances, uncertain about the future, lack self-confidence in the ability to excel in school academics, and struggle with oral and written communication skills. My experiences during my childhood and teenage years motivated me to mentor and coach them and help them get a jump start in life after high school.

### **Student-Participants**

The student-participants are JROTC high school students in nine through 12<sup>th</sup> graders. The research was conducted in the JROTC classroom located at the high school and at the elementary school classrooms located within a few miles of the high school.

### **Action Research Method**

This study is a naturalistic mixed method case study of JROTC students conducted over a semester. It utilizes a mixed method design of qualitative and quantitative data to answer the research question. Triangulation, a process of using multiple methods, data collection strategies, and data sources to ensure trustworthiness of data, were utilized in this study. Using multiple methods of both qualitative and quantitative measures can improve the validity and trustworthiness of those findings which can lead to accuracy and believability of the data (Mertler, 2017). I used a summative analysis of data to find common themes and trends to answer the research

question. This study employed a convenient sample of JROTC students rather than a random sampling method.

### **Sources of Data Collection**

The primary measures used to analyze data include student survey, student questionnaire, and interviews with student-participants. Student artifacts such as essays (reflection on peer-teaching), observations and focus group sessions were collected.

### **Conclusion**

The focus of this study is to investigate the impact of a peer-teaching instructional approach on a student's self-confidence. The scholarly literature referenced in this study provides credence to the positive impact of using peer-teaching as a learning strategy to enhance self-confidence, student growth and prepare students for the skills required as adults in our society. This research is a mixed method case study conducted by the teacher-researcher. Using a convenience sampling approach, student-participants are JROTC high school students, composed of a diverse classroom of African-Americans and White students. The primary measures in this study include: student interview, student questionnaire and student survey. Student essay, observation, focus group session, and student work are additional measures that will add to the trustworthiness of this study. Qualitative and quantitative data will be collected and analyzed to capture a deeper understanding of peer-teaching as it pertains to the research question. Consideration of both types of data provides a better understanding of the research problem than putting weight on one type of data over another (Mertler, 2017). A small sample and a targeted group of JROTC student-participants are the delimitations of this study. The outcome of this study provides classroom teachers with information about a research-based strategy

that is implemented in a classroom composed of diverse students in an attempt to bring about change in the classroom and school setting.

### **Key Words**

**JROTC:** The Army Junior Reserve Officer Training Corps (JROTC) is a program offered to high schools that teaches students character education, student achievement, wellness, leadership, and diversity (U.S. Army JROTC, 2016).

**Peer-teaching:** “An acquisition of knowledge and skill through active helping and supporting among status equals or matched companions; Students teaching other students of the same grade or younger students” (Topping, 2005, p. 631).

**Leadership Attributes:** “Leaders must have a thorough understanding of how to apply the BE, KNOW, DO, attributes to real life situations. Leaders must concentrate on what they are (their beliefs and character), what they know (human nature and their job), and what they do (provide purpose, direction, and motivation)” (U. S. Army JROTC, 2002, p. 231-234).

**Metacognition/self-reflection:** Refers to each student’s understanding and beliefs about how he or she thinks and learns as well as the strategies that can be used to accomplish specific tasks. Metacognition awareness also increases student’s motivation to make the effort to complete daily classwork and homework, which results in improved academic performance (Harris, & Meltzer, 2015).

**Self-regulation:** Is the ability to monitor and control our own behavior, emotions, or thoughts, and making adjustments based on the situation. It includes the abilities to inhibit first responses, to resist interference from irrelevant stimulation, and to persist on relevant tasks even when we don't enjoy them (Education.com, 2006).



Fluency- Motivate students and help them build oral fluency, accuracy, and expression with engaging passages and scripts to read aloud (Reading A-Z, 2017).

Action Research: is an organized inquiry conducted by teachers, administrators, counselors or others with an interest in the teaching and learning process for the purpose of collecting information about how their schools operate, how they teach, and how their students learn (Mills, 2014).

Divergent Learners: Divergent learners are individuals who have been grossly misunderstood and mislabeled, sometimes labeled as special needs, and because of this, many fail to thrive in traditional education settings. Divergent learners are quite capable of academic success but have such strong innate personalities that they find it difficult to bend their cognitive perceptions, value structure, and social adeptness far enough to succeed in the traditional classroom (Layton & Lee, 2014).

Self-confidence: is a feeling of trust in one's own abilities. To be self-confident is to have confidence in yourself. Self-confident people don't doubt themselves (Dictionary. Com, 2017).

Social Justice (SJ): "A theoretical perspective that recognizes that society is divided and unequal in significant and far reaching ways along social group lines that include race, class, gender, sexuality, and ability. SJ recognized inequality as deeply embedded in the fabric of society, and actively seeks to change this societal illness" (Sensoy & Diangelo, 2012, p. xviii).

21<sup>st</sup> Century skills: Critical thinking development. Problem-solving, and collaboration, communication, organization, planning with other learners by digital mediums to solve complex problems (Bell, 2010; K12 Thoughtful learning, 2017).

Semi Structured Interview: The researcher asks several questions, but also has the option of following up a given response with other questions that may or may not be used by the researcher, depending on the situation (Mertler, 2017).

Semi Structured observation: This type of observation gives the practitioner-researcher the flexibility to attend to other activities occurring simultaneously in the classroom or to engage in brief but intense periods of observation and note taking (Mertler, 2017).

Triangulation mixed method design: A research design that uses both quantitative and qualitative data collected at the same time and are given equal emphasis. They are compared and analyzed together to understand the research problem (Mertler, 2017).

Coding: Coding is a procedure that separates the data, breaks it down into manageable parts and identifies or names those segments. Coding requires continuous comparing and contrasting different successive segments of the data and subsequently categorizing them (Dana, & Yendol-Hoppey, 2014).

Differentiation: A philosophy that allows teachers to plan to reach the needs of diverse learners in the classroom to achieve specific standards (Gregory, & Chapman, 2007).

## CHAPTER 2

### REVIEW OF RELATED LITERATURE

Teachers throughout the United States have a plethora of scholarly research on instructional strategies to enhance learning in their classrooms, schools, and community. The end game is to satisfy stakeholders and most importantly, give our students the best learning experience as they face the 21<sup>st</sup> century workforce (“K12 Thoughtful Learning,” 2017). The challenge for our schools is to find effective and efficient classroom instructional strategies that will bring about academic success and student growth to all students in the classroom regardless of their social class, race, ethnicity, gender, and academic ability (Nieto, 2013). Peer-teaching has been with us in and outside of classrooms for centuries. Peer-teaching is a daily way of life in our society. In fact, we engage in a peer-learning environment, with our friends, and in casual conversation in the local grocery store with people we do not even know (Boud, 2001). Topping, (2005) noted that, “Peer-learning is the acquisition of knowledge and skill through active helping and supporting among status equals or matched companions” (p. 631). The concept of peer-teaching appeared in educational research in the early 1960s and reappeared in a Psychological Association document entitled, “The Learner-Centered Psychological Principles: A Framework for School Reform and Redesign” in 1993, and again in 1998 from the Boyer Commission’s “Reinventing Undergraduate Education: A Blueprint for American Research Universities,” with a powerful argument for the utilization of peer-teaching in education (Velez, et al., 2011).

The purpose of this literature review is to examine the relevant literature on peer-teaching as an instructional approach in the classroom and determine if this approach affects a student's self-confidence through this study. Sources of the evidence-based review includes peer-reviewed journals, books, dissertations, websites, and referenced works from the University of South Carolina. The search engines used to collect literature included EBSCO, ERIC, and EDUCATION SOURCE (Machi, & McEvoy, 2016). The strategy of the review was to find relevant data on peer-teaching in elementary, middle, high schools, and higher education using the common themes listed below. This review of literature presents a theoretical framework behind a peer-teaching instructional approach, research related to the strategy's implementation, and reinforcement for the claim that peer-teaching improves a student's self-confidence. The themes that encapsulate the implementation of the peer-learning experience for this study include: theoretical framework, curriculum ideologies, cognitive and social peer support, social justice perspective, peer-learning programs, the counterargument to peer-learning, and an argument that peer-teaching as an effective classroom practice positively impacts a student's self-confidence. The themes provide a holistic view of the peer-teaching experience and the emerging belief that this strategy leads to improved student self-confidence as a result of: higher test scores, passing college courses, the development of communication skills, problems solving skills, collaborative skills and reflective self-assessment. The benefit for students learning in a peer-teaching environment is the development of these personal attributes that promotes self-confidence and unquestionably provides a positive experience for students.

## **Theoretical Framework**

The work of Jean Piaget and Lev Vygotsky provides the foundation of peer-learning for this study. Piaget (1926) felt that cognitive development depends on activity with individuals as they form their perceptions, concepts, or ideas and process contradictions. This occurs between the student and his or her peers. When peers contradict their thoughts and ideas, a move to a more balanced, knowing relationship can happen. From that experience and activity, cognitive gains can result from peer interactions. Cooperation gives the child a different view of his or her perception causing a cognitive agreement and increased understanding. This cooperation between a student and his or her peers provides a common language, a system of designs, ideas, and use of reciprocity and adjustment of opinions. Peer interactions encourage children to coordinate or restructure their own views. This activity becomes necessary to complete cognitive thought (Hartup, 2009).

Cognitive development is enhanced by social interactions. The way we think will change over the years as we mature because we are attempting to make sense of the world. Piaget (1970) identified four factors that interact to influence changes in thinking: biological maturation, activity, social experiences, and equilibration (as cited in Woolfolk, 2008). Peer-teaching is a social experience, an activity affecting cognitive development by the way we interact and learn from each other. In a relationship, there are constraints that work in a social interaction. One person has the right to dominate by telling the subordinate what to do and the individual is obligated to obey without question, much like a child-adult relationship. In a relationship that is based on cooperation, neither person has the obligation to obey each other. When two persons are

on equal footing, they are free to agree or disagree. In a cooperative environment, children can move beyond constraint by working with their partners and gaining mutual respect with each other. Peer members will feel relaxed and open to exchange new ideas that could lead to a higher level of cognition (Piaget, 1932). The cognitive system of a student is more likely to function at an optimal level when students' efforts gain respect and appreciation by teachers and classmates, have positive feelings about the learning situation, and curriculum tasks are developmentally appropriate (De Lisi, 2002). Schwarz, Neiman, and Biezuner (2000) found that two students in a peer-learning situation with low levels of competence can make learning gains. When peers interact and engage in dialogues and discussions that are relevant to their tasks, cognitive gains will result from those interactions.

Unlike Piaget, who believed that cognitive development is influenced by learning from others, Vygotsky (1978) believed that cognitive advances stem from social interactions. Internally, a child develops the thinking and social rules that lead to cognitive development through conversation and modeling others. This social interaction that leads to cognitive development is called a "zone of proximal development." This is defined as what a person can accomplish on their own or what they can achieve with assistance from others and must involve problem-solving challenges to a level just beyond one's ability (Woolfolk, 2008). Social interaction is the main vehicle that drives cognitive development. Knowledge is socially constructed, and learning is developed from a conversation between teachers and students. Learning shifts from a more traditional teaching methodology to student-centered learning where students are teaching one another (Jacobs, et al., 2008).

An underlying theme in Vygotsky's theory is the collaboration that occurs through social interaction. This is a natural social act during which students talk to one another. In the context of social interaction, learning is an active, constructive process in which students acquire new information with prior knowledge to create understanding and meaning. Peer-learning is dependent on students collaborating with each other to solve problems and engage in higher order thinking skills. The peer-learning experience follows the theory of constructivism: people construct their own understanding and knowledge of the world through experiencing things and reflecting on those experiences. Dwyer (2010) studied how students learn from concrete to abstract by examining Edgar Dale's 'Cone of Experience,' similar to Piaget's and Vygotsky's constructivist theory of learning. According to Dale (1946), we retain information by reading, listening, observing a demonstration, participating in a discussion, and engaging in conversation.

Piaget, Vygotsky, and Dwyer believe cognitive development and learning occurs through peer and social interaction and experiences surrounding the learning environment. There are many moving parts in cognitive development. The peer-teaching instructional approach provides a contrast between traditional learning groups and collaborative groups. Vorster (1999) (as cited in Jacobs, et al., 2008) explains:

In collaborative learning groups there is positive interdependence, individual accountability, heterogeneous membership, shared responsibility, responsibility for each other, tasks and maintenance, social skills directly taught, the teacher observes and intervenes. In traditional learning groups there is no interdependence, no individual accountability, homogeneous membership, one appointed leader, social skills assumed or ignored, teacher ignores groups, and no

group processing. Collaborative learning increases student motivation and shares ownership with others (p. 9).

What emerges in a review of the theoretical framework of peer-learning is the power of social interaction with peers and the significant gains students can achieve by working together and taking charge of their learning. Peer-learning is positive and rewarding for all students when given the opportunity to bring their experiences and knowledge to their classroom and share their ideas with their peers. Social interaction in a peer-learning environment provides equal access to all students.

### **Theories of Curriculum and Peer-Learning**

Classroom instructional strategies and practices today were born out of major theories of education in the 19<sup>th</sup> and 20<sup>th</sup> centuries: reconstructionism, progressivism, essentialism and perennialism. Oliva (2009) believed that essentialism and progressivism have been widely accepted and practiced by educators and have widespread approval in the schools, holding a commanding allegiance of our American society. Essentialism has been prevalent throughout the history of our country. Essentialism is primarily cognitive and intellectual. Reading, writing, math, science and social studies are the core subjects of an essentialist curriculum. As a more traditional approach to teaching, the techniques of “assign-study-recite-test” are the driving force in our classrooms as stated by Oliva, (p. 160). Subject matter dominates school curriculum. What is learned is valued and assumed will prepare students for some future endeavor. Rewards and promotions are based on mastery of subject matter.

Oliva (2009) believes Progressivism “subordinates’ subject matter to the learner” and the personal needs of the student must be considered. Education is not a product to be



learned (such as facts and technical skills) but a process that continues as long as one lives” (pp. 162-163). Students learn when they actively experience their environment as opposed to sitting quietly in class and absorbing content. Learning is all encompassing in and out of school. Progressivists care about students, their community, subject matter, and put the student center of the learning process. In the classroom, teachers who think like progressivists view themselves as counselors, facilitators, and mentors. Essentialists see students as empty vessels (Halves, & Mitya, 2014) that need authoritative direction in the classroom- a teacher-student orientation. The teacher is the expert, and the students expect the teacher to fill the empty vessel.

John Dewey (1902) a leading advocate of progressivism stated, “One school fixes its attention upon the importance of the subject matter of curriculum as compared with the contents of the child’s own experience.... Hence the moral: ignore and minimize the child’s individual peculiarities, whims, and experiences” (Dewey, 1902, pp. 7-14).

Education is a social process. School is a form of community where the child uses his resources to learn through social ends. The center of a child’s education is not school subjects, but the child’s own social interactions (Dewey, 2017). Progressivism has had a significant effect on educational programs, classroom strategies, and practices. Peer-teaching as an instructional strategy aligns with the progressivists’ view of “why” and “how” students are taught subject content. Students are not perceived as empty vessels (Halves, & Mitya, 2014), but bring their prior knowledge and experience to the classroom. They take responsibility for learning content by sharing their ideas with their peers. A teacher becomes a part of the learning experience with the students.

Schiro (2017) presented a different perspective of curriculum ideologies that fit a peer-teaching strategy in the classroom: social efficiency and learner centered curriculums. In a social efficiency (SE) “curriculum objectives must be stated in behavioral terms: an observable skill, has capabilities for action, as activities people can perform, as demonstrable things people can do. The essence of man is expressed in the specific behaviors he can perform” (p. 58). Social interaction or learning experience happens between the learner and the external reaction or responses made in his or her environment. The SE curriculum looks at specifically the behavior that is learned, not content that is gained by the student. Learning can grow out of students participating in the living experiences from the environment. Learning is not mere memorization of written and verbal statements of facts; it is a connection between others and actual life situations (Bobbitt, 2017). Peer-teaching as an instructional strategy is a social event that involves activity between the teacher, as the facilitator, and students working with each other to complete a task that requires behavioral activity along with learning content. “The only true education comes through the stimulation of the child’s powers by the demands of the social situations in which he finds himself” (Dewey, 2017 p. 34).

The learner centered (LC) curriculum focuses on the student’s interest not around academic subjects. The learner centered ideology is an activity and developmental school that is a dramatic departure from the traditional school where adults and school leaders dictate student curriculum and what will be taught in the classroom. Routines in a classroom are different. Lesson assignment, planning of field trips, and activity in and outside the classroom is managed by the students (Schiro, 2017). LC centers on the individual growth of the student. Based on my experience with peer-teaching JROTC

students, the LC classroom experience and social interactions are aligned in many ways to a peer-learning classroom. Schiro added that students are engaged in social activity sharing their own ideas and gaining knowledge by collaborating with their peers, with their surrounding experiences and demonstrating behavior that is required to complete a learning outcome.

In this study, students learn how to present a JROTC lesson initially by their teacher-researcher. The teacher is a facilitator and provides the resources for the students. Students prepare their lesson with their peer partner, share their ideas with other members of the class, and present a lesson to their peers. Students also provide feedback to their peers. Additionally, they cross-age peer-teach elementary aged children outside the JROTC classroom. Like the experiences of an LC school, peer-learning has an affective component as an instructional strategy on a student's self-confidence: feelings. This behavior provides the positive motivation and the desire to learn in a non-traditional classroom (De Lisi, 2002).

### **Cognitive and Social Peer Support**

Peer-teaching in a JROTC classroom provides many benefits in the learning experience when they are interacting and engaging in major concepts and event details. Meltzer, Greschler, Kurkul, and Stacy (2015) suggested there are specific cognitive processes involved with students working collectively that are goal-directed responses used in problem-solving situations. "These functions include goal setting, cognitive flexibility/shifting, organizing, prioritizing, accessing working memory, and self-monitoring" (p. 1). When these functions are supplemented with peer mentoring and peer coaching, students are more effective in learning and sustaining effort and motivation in

their classroom. The success of peer-learning is largely dependent on how the instructional strategy promotes metacognitive awareness (a student's understanding of how they think and a path to accomplish tasks).

Equally important in strengthening peer-teaching as an effective instructional strategy in a student-oriented classroom is cognitive flexibility; "shifting approaches when synthesizing information such as reading text, writing, math problem solving, note taking, studying, and test taking" (Meltzer, et al., 2015, p. 13). Students shift between concrete and abstract and between major themes and relevant details. Peer-teaching and social interaction open opportunities for students to examine different perspectives in different content areas. Students can coach each other as they finish their academic tasks. This interaction with others encourages them to look at different approaches to learning content ultimately helping them reflect upon their own learning strategies, commonly referred to as meta-cognition. Hyun (2005) studied 5-to-6-year-old children's peer dynamics and dialectical learning in a computer based, technology rich classroom environment. They were pretested before the intervention and paired for several weeks. The posttest showed an average gain of 38.5 percent in their computer proficiency. Students displayed cognitive learning, imitative behavior, and self-confidence in learning technical skills. Students also demonstrated positive, collaborative skills, and reflective self-assessment.

Wang, Hou, and Wu, (2017) studied a four-week collaborative learning activity using four widely used instructional strategies: problem-solving, peer assessment, role playing, and peer tutoring. They were examining what strategy exhibits the highest levels of cognitive processes in each of the four strategies. They wanted to see potential

differences in student interactions, in a single research setting. The findings revealed students exhibited the cognitive process of ‘understand’ under peer assessment and peer tutoring strategies and showed the cognitive process of ‘create’ under problem solving and role play strategies. This study reveals how instructional strategies can influence, peer tutoring. The teacher can positively influence the effects on peer-teaching. The instructional strategies will vary depending on what the teacher wants to accomplish and the expectations from students.

Kamerade (2011) studied role-playing as a possible teaching method, as well as how it affects peer to peer interactions, with groups of students. Fifty college students participated in a study aimed at determining how learning is advanced through peer to peer interaction. The results showed sessions were intense and students were engaged with a high level of motivation. Role-playing helped their learning. The benefits gave students a better understanding of content, encouraged communication with each other, and assisted in their understanding in relating theory into practice. Topping and Bryce (2004) studied cross-age peer tutoring in reading and thinking. The researchers wanted to see the effects of peer-tutored thinking by controlling for time on task and amount of peer interactivity. There was an experimental and comparison group. The participants were seven-year-old and 11-year-old students. The pair-thinking tutees showed a significant difference on the posttest compared to tutees who followed a teacher directed Peer Reading Program. Tutees seem more positive about pair thinking and enjoy the social aspect of the project.

Cooperative learning is a major benefit in the peer-teaching instructional strategy. Students work with and depend on each other to accomplish a common goal and help

each other achieve individual and group goals. Students work as a cohesive element (U. S. Army JROTC, 2002). Over the last 20 years cooperative learning with small peer groups has improved the feasibility and quality of instruction and has allowed teachers to determine the needs of learners of diverse levels. Small group strategies have proven to benefit students in the areas of academic achievement, motivation, self-efficiency, social development, and social acceptance. Peer-teaching in small group ensures individual accountability because the students do not want to disappoint their peers (Wilkerson & Lequia, 2015). Mattatall (2017) studied at-risk first graders in a peer-assisted learning strategies (PAL) program to determine if reading scores would improve with Aboriginal students. The finding revealed greater gains in reading scores and enhanced efficacy of first grade PAL programs and student achievement.

Similar research by Korner and Hopf (2015) on cross-age peer tutoring in Physics found peer tutoring is a crucial strategy for achievement. This study examined cross age peer tutoring as a method to teach science and evaluate outcomes based on empirical analyses of student achievement in electricity. Robb, Sinatra, and Eschenauer (2013) found peer-teaching was more effective in vocabulary development compared to teacher directed instruction (learning by receiving a list of words and learning definitions from dictionary usage). Students emphasized exploration, hands-on experience, and inquiry, along with peer-teaching. Students collaborated with each other and felt motivated to increase their vocabulary. They were more highly engaged in digging deeply into numerous meaning of words. These studies examine cognitive processes that are evident in peer-teaching as an instructional strategy. They display elements of metacognition,

self-reflection, active engagement by students, and freedom from the constraints associated with teacher and learner interaction (Velez, et al., 2011).

When you dig deeper into the behavioral and cognitive actions in peer-teaching, language plays an important part in social interaction with students. Spoken language between peers can ease the anxiety of understanding subject content. Baiduri (2017) studied elementary school students' spoken activities and their responses in joining math learning process by the peer tutoring method. Spoken language is a powerful activity that had a profound effect on student learning. Baiduri noted that "spoken activities signify the combination of two crucial activities in the learning process through scientific approach (observing, questioning, experimenting), and communicating" (p, 146). In a normal classroom a teacher controls how, the learning experience flows. Children are empty vessels (Halves & Mitya, 2014) and the teacher's job is to fill the vessel based on the established classroom methods and strategies best suited for his or her students. Teachers find learning methods that can develop student motivation and questioning skills. However, in some cases, students are unwilling to question the teacher's methods due to fear and shyness. Peer tutoring brings a group of students who have accomplished the learning resources to assist their friends who have problems in comprehending what to learn.

An advantage in peer-tutoring is the common language formulated by the peers (Halves & Mitya, 2014). "Learning activities are calm, not stressful and if they are afraid of teachers, they can easily question their peer tutor" (Baiduri, 2017, p. 147). In this study, data were collected from observations, field notes, interviews, and questionnaires administered to 24 fifth graders in East Java Indonesia. Researchers analyzed all

activities that occurred in the peer-tutoring sessions. Four students were selected as tutors who were highly competent in math and were trained in a peer tutoring instructional strategy and equipped with the understanding of their roles in peer tutoring. Students were divided into four groups. The study lasted one school year. The findings revealed that tutors' spoken activities covering questioning, answering, explaining, discussing and presenting improved during three meetings and sharply developed in general. Students showed open-mindedness and feeling a sense of belonging amongst their peers. Peer tutoring guaranteed efficient communication, cooperation, developed teamwork, and positive social interaction.

### **A Social Justice Perspective to Peer-Learning**

Peer-teaching as an instructional strategy in the classroom is a social justice (SJ) approach that allows all students of race, gender, and social class equal opportunities to learn content with their peers through social interaction. (Nieto, 2013). Peer-teaching provides a pathway to reconnecting with their peers by bringing experience from their environment, expectations, and relationships into the classroom. SJ is about giving meaning to what they are learning and helping them connect their experiences or knowledge to content. Peer-teaching gives all students the material and emotional resources they need to reach their full potential. Through active social interaction, students can believe in their ability and worth and build relationships with others. Students are respected and can draw on their own talents and make contributions to their peer group. The students learn content by teaching content. Nieto explains, "This requires a critical perspective while also rejecting deficit theories about children's particular



backgrounds and understanding that all children have strengths that can enhance their education” (p. 21).

Morrison (2004) studied social-emotional behavior with cross-age peer-teaching with disruptive elementary school students to determine if peer-teaching could change two nine-year-old students' behaviors in a more positive way in school. The nine-year-old girls were popular but disengaged from academic learning. They exhibited disrespectful and disruptive behavior and fought with other girls. They acted bossy in class, showed passive aggressive behaviors and had chronic non-attendance. However, they enjoyed drama class. These two pupils were given the responsibility to teach drama lessons to six-year-old peers. The results demonstrated that the two popular nine-years-old girls' shifted attitudes that led to positive behavior and improved their self-confidence and self-esteem. After the project, their behavior improved in class and they were more engaged in learning. Teachers were happy to see a change in their behavior. Knowing their background and bad behavior, teachers gave them a higher sense of responsibility and gave them freedom to work with their younger peers. Their interaction with peers helped the girls develop appropriate communication skills, social acceptance with younger peers and a sense of accomplishment. In another similar study, Gumpel & Frank (1999) examined the effects of a cross-age peer-teaching program on the social skills of 2 sixth-graders and 2 kindergarten socially rejected and isolated boys. Peer-teaching consisted of older boys conducting social skills training with younger students. The frequency of positive social interactions increased for all four boys. The tutors noted behavioral improvements. The frequency of social interaction clearly stabilized positive behavior by the boys.

Lazerson, Foster, Brown, and Hummel (1988) also studied cross age tutoring with truant, junior high students with learning disabilities and found learning disabled (LD) tutors gained in “locus of control.” Truant and tardy behavior decreased. This study highlights peer-teaching in a classroom that penetrates classism and stereotypical behavior between students. Everyone is working on the task of lesson planning and teaching content. There is no social class in the classroom. Everyone is involved in their tasks regardless of their race, gender, and social class. All students have equal access and opportunities to learn, gain social acceptance, and develop relationships with their peers. Students are a united group with the same academic and behavioral goals.

Rawlinson and Willimott (2016) studied the mentoring component of a First Year Experience Program (FYE) at the University of Auckland. FYE was established for new undergraduate college students using college juniors and seniors as tutors as well as faculty members. FYE tracked student progress and identified at risk students and worked closely with school faculty of education and support staff of social work. FYE is a support system aimed to set students on course for academic success in the future. Much like a school intervention program, FYE used a “philosophical lens combining a social justice and learning centered pedagogy” (p. 41). The focus of this study was to change the structure of the program from a direct model (tutor to peer) to a reciprocal model incorporating principles of social justice. High achieving students were initially trained to assume the role of mentor. These students completed courses in content relating to equity, different learning strategies, self-efficacy, and subject content before assuming their leadership role. The social strategies used in FYE included, students’ rights, self-determination, access, equity, and participation (social interaction).

Researchers found that including principles of social justice using strategies of learning centeredness was highly effective in meeting the academic needs of students. Mentors showed increased ownership, and leadership with their role and were more engaged with their students. More importantly, the mentors showed a positive turn from a desire of “doing good” to accomplishing tasks to help students enhance their academic work.

### **Peer-Learning Programs**

Peer-teaching has been with us for centuries. This educational, instructional approach has been so successful over the years, a *Journal of Peer-Learning* was created in 2008. This journal provides research on peer-teaching programs, practices and innovations such as Peer Assisted Study Sessions (PASS) and Peer Assisted Learning Program (PAL). Although this journal primarily focuses on higher education, similar peer-learning programs have been used at the elementary, middle and high schools. Chang and Walters (2009) examined a Peer Assisted Learning (PAL) program at a major university composed of 534 students enrolled in two math courses. As an observational study, the goal was to determine if PAL helped the student’s chances of successfully completing math courses. Success was defined as a passing grade of “C”. The PAL program followed, guiding principles in math: “facilitators (students) shared learning behaviors and increasing degree of responsibility and authority with students; activities in the sessions were planned and or requested by facilitators; students learned to evaluate their own learning; and engaged in course work with each other” (pp. 24-26). The results suggest that PAL session attendance by students increased the odds of success in passing their course work. Sporer, Nadine, Brunstein, Joachim (2009) also studied the effects of Peer-Assisted Learning Strategies (PALS) program and the traditional instructional

condition on the reading comprehension of seventh grade students and found that PALS students scored higher in reading comprehension and improved in their understanding of self-regulated reading activities.

Many universities have tutoring programs and supplemental instruction (SI) for high risk courses (Mattatall, 2017; Rawlinson, & Willimott, 2016; Carbone, et al., 2015). SI programs are organized sessions available for students. SI leaders are students helping their peers. Usually SIs are out-of-class study sessions that start at the beginning of the course. Rather than forming study groups on their own (collaborative learning), the SI leader is present to keep the group focused on their subject content and model appropriate learning strategies that students can use in their current coursework. Lockie and Van Lanen (2008) conducted a qualitative study on the experiences of SI leaders in science courses. The results showed four central themes that SI leaders experienced: diversity of learning needs of students, increased their own awareness of their learning needs (metacognition/self-reflection), improvement in their leadership skills, and communication skills, and improved relationship with faculty. SI leaders also indicated their self-confidence improved and they gained a sense of accomplishment for helping others. Skalicky and Caney, (2010) also conducted a study on the effectiveness of a Peer Assisted Study Sessions Program (PASS) with the same results of higher levels of responsibility and leadership skills enhancement.

Reciprocal Peer-Teaching (RPT) is students alternating roles as teacher and student. It is a cooperative learning strategy that involves students, teaching each other. RPT allows students to provide instruction, evaluation, and reinforcement to one another and creates a social support among the participants. Krych, March, Bryan, Peake,

Pawlina, & Carmichael (2005) studied RPT strategy in a gross anatomy school laboratory. They examined the acceptability of implementing RPT with anatomical concepts and dissection in a laboratory. Selected students received an interactive lecture covering the anatomy to be dissected in the laboratory. Afterwards, students conducted a demonstration for their classmates. Students reversed roles and demonstrated a dissection. Taking on a responsibility as a teacher improved their understanding of course content and developed communication skills, teamwork, leadership, confidence and respect for peers. (Carbone, et al., 2015) found similar results in a peer assisted teaching program (PAT) with college students. They looked at college course scores. The participants achieved positive results (higher course scores) through reflecting on their practice as they worked in pairs through a series of structured exercises, scheduled prior during and after a semester. These exercises allowed them to focus on areas they identified as most needing improvement.

The cognitive and behavioral elements of what goes on with peer interaction is evident. The familiar trends cited in these research studies continue to reinforce the claim that using a peer-teaching instructional approach promotes and improves academic achievement, cognitive/ self-awareness, communication skills, higher sense of responsibility, collaboration, cooperative learning teamwork, leadership, self-esteem, social acceptance, relationship, social skills, and motivation leading to a positive effect on a student's self-confidence (Hyun, 2005; Johnson, et al., 2015; Korner & Hopf, 2015; Robb et al., 2013; Topping, 2005).

Supplemental Program (SI) has been around for many years. SI has been recognized as an effective support program for higher education. Zaritsky, and Toce

(2006) studied an SI program at LaGuardia Community College. This program was first piloted in 1993 and expanded in 2002-2003. Data collected over the years indicated that students who attend SI sessions achieve, on average, one letter grade higher than students that did not attend. A further analysis has shown that the success of an SI program on campus depends on the four pillars of a supplemental program: SI supervisors, SI leaders, faculty, and administration. The SI model is different than a traditional support model. SI does not target struggling students. SI targets “high risk” courses that have a failure rate of 30 percent or higher. SI (student) leaders are trained in workshops on active learning styles, collaboration, and cooperative learning before they assume their leadership roles. SI sessions are organized at a minimum of three to five hours a week. The benefit of SI sessions is SI leaders become aware of what is going on in class, develop a better relationship with their professor, provide help directly to students, attend students’ classes, and get to know students in the course. Data from this study showed SI leaders felt SI clarified the course material, helped them choose a career, increased their self-confidence, strengthened their communication skills, and strengthened social skills. SI respondents described SI as “life changing, a wonderful program, and the best thing that even happened to me at LaGuardia” (p. 29). SI students (mentors) are the most important pillar in any SI program. Peers are working with others with the same objectives. Students pass a high-risk course and SI leaders stay engaged in all SI sessions.

In a related study, Bruno, Love, Green, Illerbrum, Holness & Sveinson (2015) evaluated a pilot program of peer-teaching for an undergraduate course in Human Anatomy over a semester. This was a ‘high risk’ course that was intended to help students pass a difficult course. One hundred and thirty-eight students participated in this

study. Students attended ten one-hour sessions over a length of a semester using a peer-teaching instructional strategy. Students were stratified into three groups based on the number of peer-teaching sessions they attended: non-attendees (0 sessions), attended some sessions (1-3), and frequently attended sessions (4 or more). Using an analysis of covariance and multiple regression analysis, final grades of frequent attendees were significantly higher than those of non-attendees. The result suggests that a certain number of sessions may be required to show a noted gain from the SI pilot program. Based on student surveys, students noted that they had a better understanding of the material and felt more prepared for examinations, which led to lower course-anxiety. Working in a small group, the students felt comfortable asking questions, felt socially accepted, and were not embarrassed about not knowing the material. They enjoyed the non-traditional lectures. Bruno added, “The program leaders (tutors) felt they developed professional skills (time management, teamwork) from leading the sessions. They also enjoyed working with the students and being able to share their tips and advice for the course” (pp. 138-139).

At the elementary and middle school levels, Paired Reading Program (PR) is an application of peer tutoring. Extensive research shows benefits in reading improvement and some affective aspects of learning. Miller, Topping, and Thurston (2010) investigated changes in self-esteem of children, randomly selected from four schools in Scotland, who participated in PR over a 15-week treatment period. Children of ages 10-11 were selected. Same age peers, and cross-aged peers participated in this study. A pre-post design was given to students using the Rosenberg’s Self-Esteem Scale. (PR) used an organized, structured paired reading cycle. Pairs chose books of high interest to

themselves that were above the reading level of the tutee but not above the tutor. Pairs sat side by side, so they could see the book together. They talked about the book with the hope that the tutee could understand the content. The success of this program was based on a step by step approach to peers understanding reading books. The paired reading cycle provided a guide for tutors to interact with tutees. Significant pre-post gains were noted in self-esteem, driven predominantly by improved beliefs about competence in both same-age and cross-age conditions. In this study, when you combine a reading cycle along with social interaction with peers you are going to get positive results in a student's self-worth and self-competence. Social interaction with peers in a structured learning environment is a powerful behavioral dynamic in effecting a student's self-confidence.

Karcher (2008) studied a cross-age mentoring program (CAMP) for elementary and middle school aged students to determine the effects of connectedness, attachment, and self-esteem between 46 mentors and 45 comparison classmates. Like adult mentors, cross-age peer mentors were paired with younger students and provided guidance and social support with limited instruction. Following this experience, mentees reported improvements in attitudes toward school and peers, self-efficacy, grades, academic achievement, social skills, and reduced behavioral problems. Brady, Hall, and Bielskus-Barone (2016) studied the use of Literacy-Based Behavioral Interventions (LBBIs) as a strategy to teach new skills. LBBIs was investigated to determine if LBBIs delivered by classmates (peers) might increase the daily living skills of children with severe disabilities. Three children aged seven to 10 years with severe disabilities participated. Three other similar aged students from the same school served as peer partners. Selected peers were required to teach basic skills, such as hand-washing, to their learners. All



students who received hand-washing lessons increased their accuracy and independence when performing the daily living skill. After the peers stopped providing the LBBI, each student continued to perform the new skill during subsequent follow-up observations 14 to 23 days later. The effects of the intervention were rapid. All learners made substantial gains in acquiring the skill one to three days after their first exposure to the LBBI. The results of this study strengthen the evidence base for including peers in the delivery of LBBIs, particularly when teaching daily living skills. These studies show the effect of a powerful instructional strategy that can have profound effects on learners.

Flores and Duran (2013) studied the development of a student's reading self-concept and the mechanism underlying it based on the use of peer tutoring. Researchers wanted to examine changes that take place in the Reading Self-Concept Program (RSCP). Five hundred and seventy-seven students enrolled in years three to six in primary education along with 20 teachers were studied over a three-year period. The intervention group was peer tutoring. The comparison group used the usual teaching methodology. The pre-test and post-test instrument were the Qualect Reading Self-Concept questionnaire (Likert Scale) used to collect data. The findings revealed that there were significant gains in the student's self-concept among the fixed-role tutoring (intervention group). Tutors may have increased their feelings of academic competence and effort because they are good reading models. The researchers found four dimensions that had a positive effect on RSCP: a positive work environment, evaluations from tutors were all positive, tutors asserted themselves as model readers, and self-evaluation made student's more aware of their reading level. Other factors that contributed to the positive development of RSCP included reading-aloud, active listening from a peer, and inter-peer

meta cognitive reflections on progress made by tutors and tutees. Metacognitive reflection was a key factor in the student's self-concept development.

Greenwood, Arreaga-Mayer, Utley, Gavin and Terry (2001) examined a class wide peer-tutoring and learning management (CWPT) system for Elementary-level English language learners. CWPT is a form of intra-class, same-age, reciprocal peer tutoring. Peer-tutoring roles in CWPT were designed to be reciprocal, meaning each student served as both the tutor and the tutee during each CWPT session. In CWPT, unlike in teacher-mediated instruction, students experienced one-on-one pupil-tutor (pairs) during sessions. Five English Language Learners (ELL) teachers and 117 students in a multiracial/multiethnic urban elementary school, including students with disabilities, participated in the study. The results indicated that ELL students made considerable progress in mastering the curriculum over periods ranging from 15 to 21 weeks of school. Student satisfaction results were also favorable. Students indicated that they had fun learning from each other. Students felt that they learned more. They felt unrestricted in this program. They could write and read to each other. This was a positive experience for them and a self-confidence builder.

Ginsburg-Block, Rohrbeck, and Fantuzzo (2006) examined the effects of Peer Assisted Learning (PAL) interventions on social, self-concept, and behavioral outcomes with elementary school students, the relationship between academic and nonacademic outcomes of PAL interventions, and the effectiveness of PAL for different demographic groups. Results suggest that PAL interventions that focus on academics can also improve social and self-concept outcomes. PAL interventions were more effective for low-income versus higher income students, urban versus suburban/rural students, and minority versus

nonminority students. Improvement were significant in grades 1–3 students but were not in grades 4–6. The findings show strong evidence that academic PAL interventions result in positive, small-to-moderate positive effects on social, self-concept, and behavioral outcomes. In addition, significant positive relationships were found between these social and self-concept outcomes and student achievement.

### **Peer-Teaching in Middle and High Schools**

Workman and Vaughan (2017) examined peer-teaching experience where older, advanced high school art students taught an art making lesson to younger students and lead an art gallery discussion with school foundational art students. The art students planned, prepared an art lesson and taught their peers. In this classroom, three events happened: prepare a lesson, present/teach lessons, and lead. An integrative approach to learning, this was an excellent demonstration of students of similar ages sharing knowledge and experiences, as well as learning and working together through collaboration. An ordinary day in this high school classroom entailed teacher-led instruction followed by groups working on projects. Observing this classroom of students, one could see students influencing each other's thinking and artistic direction. They were asking for feedback about how they could develop their ideas. They even asked their peers to critique their work. Researchers observed students peer-teaching experience and written responses. Students developed responsibility for their own understanding and active participation in the production of knowledge. Motivated students “demonstrated that peer-teaching can guide students toward collaborative learning, increased communication skills and independent thinking” (p. 27). This was a rewarding experience. They were able to gain self-confidence and show accountability in

a peer-learning environment. In a related study, which involved 8<sup>th</sup> grade students learning acquisition of vocabulary, students shared their thoughts of the peer-teaching interaction and experience. One student commented, “I felt like I was helping others understand those words well” (Robb, 2014, p. 124). Students reported when they defined words to their group, interaction was abundant and peer feedback helped create a deeper understanding of the vocabulary word. A common trend observed by researchers was the positive motivation and enthusiasm exhibited by students.

Science, technology, engineering, and math (STEM) is important to the future of our students. Education is promoting the need for STEM to be integrated into our schools. Today, STEM is the trend that our children will be experiencing in their future careers. Thomas, Bonner, Everson, and Somers (2015) sought to give empirical evidence in support of a peer-led model to show that students could improve STEM learning for tutored students in urban schools. In this study, The Peer Enabled Restructured Classroom (PERC) was developed to address STEM in urban high schools. The PERC instructional model changed direct instruction from teacher to peer to Peer-learning in small groups. Using end-of-course test results in Biology and Algebra as instruments, researchers found after a two-year implementation of PERC, students increased the likelihood of passing these subjects. The sample was extremely large and covered numerous schools in the New York City area. The findings add to the body of prior research about the effectiveness of peer tutoring.

Using examples of peer-teaching in middle school mathematics, a study was conducted to identify sets of behaviors that best predicted learning in collaborative small groups. Webb, Farivar, and Mastergeorge, (2002) studied seventh graders for a semester

on “conditions that must be satisfied for helping behavior to be effective in peer-teaching and the responsibilities of students seeking help, students giving help, and teacher’s guidance, to make helping productive for learning” (p. 13). Although some students did not succeed in a peer-learning environment, motivation and their willingness to learn can lead to positive outcomes to peer-learning. The researchers found four areas that promote productive learning: establishing positive expectations and norms for group work, structuring the tasks in ways that support learning and understanding, modeling desired behavior, and monitoring group work. This study digs deeper into the dynamics of peer-teaching. Peer-learning groups must have goals and objectives stated in their tasks. The teacher provides instruction and direction when needed.

Darrow, Gibbs, and Wedel (2005) examined the role of peer tutoring, cross age tutoring, the effects of peer tutoring, and assessed the use of the class wide peer tutoring model. One hundred and four, fifth graders, boys and girls, participated in a district wide elementary music curriculum. Tutors were trained on key signatures as subject matter and were tested before and after the tutoring sessions. The intervention was tutor teaching tutee and roles were reversed. The results showed the “peer tutoring strategy was effective in teaching key signatures, children are capable of teaching one-another musical concepts, and capable of learning themselves as they teach” (p. 20). The responses for enjoying the sessions was positive. They liked the fact they were helping their classmates. The experience was joyful.

Scruggs, Marshak, and Mastropieri (2012) studied peer-mediated instruction at a social studies high school class. This study examined the effects of peer tutoring (experimental condition) compared to teachers directing all aspects of instruction

(traditional condition). This included family support when the students did homework. The results suggest that the experimental treatment was more effective than the traditional condition in facilitating learning gains. An additional finding in the experimental intervention was an increased learning of non-target content. Abdul Raheem, Yusuf, and Odutayo, (2017) examined the effects of student performance using peer tutoring and conventional instructional strategy in economics. Two intact classes in two different secondary schools were selected for this study. Students participating in this study were 40 high school students in the experimental group (peer tutoring) and 38 students in the conventional strategy from Kwara State, Nigeria. The instrument was an objective test entitled Economics Performance Test (EPT) used to measure academic performance. Students in the peer tutoring group received higher scores than students in the conventional instruction group. Observations gathered during the students' exposure to peer tutoring indicated that the quality of the students' interactions with their peers improved significantly both socially and academically. Some students did not gain equally from participation. But it was clear that peer tutoring offered the opportunity for each participant to become aware of their weaknesses. In a similar study by Nawaz & Rehman (2017), on student success in mathematics at the secondary level, researchers found using a peer tutoring strategy, increased academic achievement in students and beneficial for student who were weak and mediocre.

Bell, Young, Salzberg, and West (1991) investigated the effects of direct instruction and peer-teaching tutors in a high school driver education curriculum. In this study, four high school learners had intellectual and learning disabilities. This study was designed to help students that failed to pass the Utah state drivers test. Peer tutors were

used to teach high school students the written maneuvers portion of the driver education curriculum. When the learners received instruction by the instructor in the classroom, the learners responded inaccurately or at near-zero rates. However, the tutors spent the last 10 minutes of each session with the learners along with the instructor. Peer tutoring was associated with immediate increases in correct responses with less incorrect answers, resulting in both accuracy and positive responses from the four learners. Positive scoring in driver's education exams with peer tutors provided evidence that peer training was responsible for the mastery of the maneuver tests with struggling students. Three of the four learners passed the course, passed state driving exam, and obtained a driver's license. At the conclusion of the intervention, the learners and tutors agreed that peer tutoring should continue in driver's education. Having implemented Peer-teaching as a teacher in a classroom for several years, a review of literature at the elementary, middle and high school levels confirms the belief that peer-teaching is an effective and efficient instructional strategy, effects a student's self-confidence and enhances credence to my action research.

### **A Counter-Argument to Peer-Teaching**

The preponderance of research suggests that peer-teaching as an instructional strategy in a JROTC classroom has a positive impact on a student's self-confidence. However, there are research-based studies that show no significant gains using a peer-teaching strategy in the classroom impacting a student's self-confidence. Griffin and Griffin (1998) studied the effects of reciprocal peer-tutoring (RPT) on achievement, self-efficacy (a belief in one's ability to succeed in specific situations or accomplish a task), and test anxiety of 47 undergraduates. RPT is a cooperative learning strategy that

capitalizes on the benefit students receive from preparing to tutor one another. RPT strategy paired students both in the role of tutor and tutee to enable students to provide instruction, evaluation, and reinforcement to one another, thereby creating mutual assistance. Students worked closely together and generated questions and administered their tests outside the classroom. Students developed a series of test questions, used these questions to quiz each other prior to unit examinations, and provided corrective feedback to the questions developed. Researchers used a Self-efficacy and Test Anxiety Scale as the instrument. Findings indicated that the RPT procedure had no statistically significant effects on either achievement or self-efficacy but did increase test anxiety. A major flaw of the results was the procedures used: telling the students how they were going to study, and there was a short time for peer interaction. Researchers controlled the operation of RPT in a tightly regimented manner with little opportunity for students to share their thoughts about quiz questions. Students must be given the freedom to share and engage in conversation through trial and error to gain acceptance with their peers and feel a sense of accomplishment.

Bonner, Somers, Rivera, and Keiler (2017) investigated perceptions about the peer-learning strategy use and instructional roles among a sample of 230 high-needs adolescents who acted as near-peer instructional facilitators. This study described a classroom-based secondary school intervention in mathematics and science called the Peer-Enabled Restructured Classroom (PERC). PERC is a small group learning model in secondary school mathematics and science that uses peer instructional facilitation as its primary pedagogical approach. The program was designed to help urban non-selective high schools address the learning needs and achievement gaps found in the ethnically



diverse, low-income populations they serve. Using a pre-and post-test single group design, researchers surveyed student instructional facilitators (students) before and after program participation and related their thoughts about the peer-learning strategy and the effects teacher roles had on academic achievement. Surveys and test scores were used in this study over a two-year period. This study found no survey gains in student perceptions (feelings) about peer-learning strategies between pre-survey and post-survey. They found small but significant effects of individual perceptions about learning strategies and teacher roles on academic gains. PERC can be an effective means to raise achievement in urban schools. Additionally, student to student intervention at the secondary level can promote academic growth and self-confidence when peer-teaching is structured along with metacognitive and social-emotional development as it relates to academic gains. In this study, researchers were unable to administer survey instruments among a well-matched comparison group limiting one's ability to get a realistic picture of gains in academic achievement and perceptions of learning strategy and teacher roles.

Roscoe and Chi (2007) studied tutor learning and considered how analyses of the tutor's actual behavior may help account for variation in learning outcomes and that these behaviors can have a limited benefit for learning. They wanted to know if learning is affected when tutors are engaged in explaining and questioning. Is peer-teaching knowledge telling (memorization of facts and concepts) or knowledge building? Knowledge building included self-monitoring of comprehension, integration of new and prior knowledge, and elaboration and construction of knowledge. After a review of a plethora of studies, they found support that peer tutors tend to exhibit a pervasive knowledge-telling bias, even after extensive training in various strategies. Roscoe added,

“Tutors often find ways to modify or undermine these techniques in unexpected ways” (p. 561). This explains why there is a wide range of learning outcomes across tutoring programs. Their findings led them to the belief that peers are more likely to deliver knowledge than developing knowledge. As a result, the true potential for peer tutoring learning may be rarely achieved.

Peer-teaching as an instructional strategy in the classroom is effective based on how the strategy is planned and implemented. The strategy requires structure, planning and specific guidance by the teacher and peers must have the freedom to interact with each other without a set of rules to follow. Procedures must be established and understood by the students. Everyone must know their roles in this process. These studies mentioned above had flaws and several limitations in the research methodology or design of the study and as a result did not show a significant impact on a student’s self-confidence or learning gains using a peer-teaching instructional strategy. Other factors can affect the impact of a peer-teaching experience: classroom setting, teaching methods, profile of students, motivation of students and type of content taught.

### **Conclusion**

Peer-teaching has many names: tutoring, peer assisted learning, supplemental instruction, reciprocal peer-teaching, peer tutoring, mentoring, peer reading, study groups, cooperative learning, project-based learning and collaboration, and many others (Webb, et al., 2002; Miller, Topping, & Thurston, 2010; Krych, et al., 2005; Baiduri, 2017; Jacobs, et al., 2008; Skalicky & Caney, 2010; Johnson, et al., 2015). All have a common strategy: students teaching other students. The teacher plays the role of facilitator, setting up the peer-teaching instructional strategy with students, guiding the

students along as they complete their tasks. A review of related literature clearly shows that peer-teaching as an instructional strategy has an impact on a student's self-confidence. One of the benefits of peer-teaching is students have fun learning. They interact throughout lesson planning, and teaching which results in a warm, inclusive classroom (Baiduri, 2017). Students have a strong sense of responsibility and motivation when they are presenting content to their peers (Zaritsky & Toce, 2006; Rawlinson & Willimott, 2016). So, what are the student perceptions of peer-teaching and a peer-to-power interaction? Velez et al., (2011) explains, "Students felt like they were on the same level as everyone else, they did not feel pressured to hide what you want to say. You are free to say anything, and everyone wants to share; and, it is a change from having a professor sit there and lecture you, so I liked it" (p. 45). If a fellow teacher walked into a classroom, they would see students displaying elements of metacognition, self-reflection, career formation, a higher sense of responsibility, motivation, and a willingness to learn. The exhibition of these elements displayed by students promotes self-confidence. They also exhibit social interaction; students exchanging ideas in a non-threatening classroom (Kieran, 2009). From this experience, students could develop a caring relationship with their peers and provide emotional support they need to accomplish their role in Peer-teaching.

Peer-teaching as an instructional strategy positively affects a student's confidence, and answers the research question based on an uplifting literature review of the theoretical and conceptual framework of peer-teaching (Woolfolk, 2008; Jacobs, et al., 2008; De Lisi, 2002); the curriculum ideologies associated with a peer-learning experience (Schiro, 2012; Dewey, 1902); the positive cognitive effects on student

learning (Hyun, 2005; Topping & Bryce, 2004; Flores & Duran, 2013;); the social perspectives of social justice when students interact with their peers (Morrison, 2004; Nieto, 2013; Lazerson et al., 1988); the established peer-learning programs, widespread in colleges and universities (Rawlinson & Willimott, 2016; Greenwood, et al., 2001); the student success in academics (Mattatall, 2017; Bell, 1991; Korner & Hopf, 2015; Robb et al., 2013); gains in self-esteem based on peer-teaching in elementary, middle, and high schools (Webb et al., 2002; Darrow et al., 2005; Johnson, et al., 2015; Scruggs et al., 2012); and the student behavioral gains in collaboration, cooperation, leadership skills, time management, teamwork, communication and social skills (Karcher, 2009; Abrami et al., 2004; Griffin, 1998). The research on peer-learning has been extensive and abundant, trending toward an effective instructional strategy that impacts a student's self-confidence.

## CHAPTER 3

### METHODOLOGY

This chapter provides the research methodology I used to answer my research question. The purpose of this action research study was to examine the effects of implementing a peer-teaching instructional approach on student's self-confidence in the classroom. This was a point-in-time study of the effects of using a peer-teaching instructional strategy to JROTC students over an 18-week period. The problem of practice for this study stems from students not given the same opportunities to use and develop self-confidence and take on higher levels of responsibility in a traditional learning environment as they prepare for the 21<sup>st</sup> century workforce in our society. Because of their limited exposure to peer-teaching, students lack self-confidence in their ability to work with their peers in small groups and effectively take on a pro-active and an autonomous approach to completing their assigned projects without explicit direction from the classroom teacher.

Using a peer-teaching instructional approach in the classroom allowed students to actively participate in the learning process, work with their peers, and develop self-confidence in their work without feeling intimidated by teachers or smarter students. The following research question guided the study: What is the impact of implementing a peer-teaching instructional approach on student's self-confidence? Action research was appropriately suited for this study because it was practical and relevant to classroom teachers, since it allowed them direct access to research findings. Action research is a

process in which educators can collaborate to improve their own practices in the classroom and validate their own teaching practices (Mertler, 2017). As stated in Chapter 1, there is an ample support for peer-teaching as an instructional approach that provides a rationale of how the research question contributes to this study and the academic community.

### **Scholarly Literature**

A peer-learning strategy provides a plethora of cognitive, behavioral, and social attributes prevalent in the classroom that has a dramatic impact on a student's self-confidence. Many studies highlight emerging patterns and trends of ownership, high degree of responsibility, self-esteem, self-confidence, independence, self-regulation, meta-cognitive/self-reflection, and academic achievement that are important characteristics of an emerging impact on a student's self-confidence (Robb et al., 2014; Johnson, 2015; Morrison, 2004; Velez et al., 2011; Korner, & Hopf, 2014; Johnson, et al., 2015).

Peer-teaching has been shown to be a learning strategy that promotes student self-confidence; and especially suited for non-traditional students. What emerges from these studies are common themes associated with the research question that promotes and encourages a peer-teaching strategy that directly impacts a student's self-confidence. This strategy motivates students to learn, improve fluency, encourages collaboration and cooperation, and develops self-regulation. This study contributed to the understanding of the impact of peer-teaching on a student's self-confidence.

## **Action Research Design**

This study was a mixed method case study that examined a single setting of JROTC students in a high school. The participants were the students enrolled in the JROTC course. The teacher was also the researcher. This case study used multiple measures, and a wide variety of data to arrive at a more holistic picture of the phenomenon under investigation. This also permitted the researcher to use triangulation, “a process of relating multiple sources of data in order to establish their trustworthiness, or verification of the consistency of the facts while trying to account for inherent biases” (Mertler, 2017, p. 11). A mixed methods research design is more open-ended, descriptive, and interpretative, focusing on explaining a process or a phenomenon. This designed research shows differences across classrooms, schools, and communities and more importantly, give a voice for teachers in the classroom (Dana & Yendol-Hoppey, 2014). This study addressed the impact a peer-teaching instructional strategy has on a student’s self-confidence and what happens over a period of time.

This study was a naturalistic study in that it takes place in a school classroom. The naturalistic inquiry perspective was a design in research that examined data in its natural setting. The research site was not changed and adjusted to the pleasure of the researcher. Naturalistic inquiry involves the study of a single case, usually a self-identified group or community (students in a classroom). “The aim is not to find a representative case from which to generalize findings to other similar individuals or groups. It is to develop interpretations and local theories that afford deep insights into the human experience” (Armstrong, 2010, p. 880). As the instrument for this study, the teacher-researcher dedicated a large amount of time interacting directly with participants. The teacher-

researcher was also a participant with the students. This included teaching, mentoring, and coaching them in their daily activities and conversations, to understand their experiences and their point of view. In a non-naturalistic, experimental research designs, terms are defined, research hypotheses stated, and procedures for data collection established in advance before the study begins. Experimental research is highly structured, and researchers can manipulate the methodology and natural setting of the study. The goal of this study was to introduce new questions that led to improved observations and interpretations and improvement in the classroom which in turn can formulate new questions. This is a circular process in the classroom (Armstrong, 2010).

### **Action Research Methodology**

This study followed Mertler's (2017) model that divides the action research process into four phases: planning, acting, developing, and reflecting. This design was used to outline the flow of my study and answer my research question. In the planning phase the topic was identified, followed by the problem of practice, a purpose statement of the study, a review the related literature, a research methodology, and research questions. In the acting phase, a research plan or methodology, and design and ethical considerations of the research study were stated along with an appropriate plan for collecting and analyzing your data. Mertler added the developing and reflecting phases to occur after the data was collected and analyzed.

### **Participants and Setting**

Sixteen high school JROTC students were the sample for this study and participated over an 18-week period in the spring of 2018. JROTC students were in grades 9<sup>th</sup> to 12<sup>th</sup>. The targeted sample seven females and nine males. There were four



White females, three African-American females, eight White males and one African-American male. Many of these students were the key leaders of the Cadet Battalion and were holding leadership positions. The JROTC program consisted of 36 male/female cadets for the school year of 2017-2018. The total enrollment of Great Falls High School was 200 students at the time of the study. Forty percent of all students were African-American. Fifty eight percent were White and one percent in the “other” category. The sample was a diverse group of students that ranged from honor students, to academically struggling students. One student had an Individual Evaluation Plan (IEP). The teacher-researcher collected all data for the study. The data collected was an attempt to answer the research question: What is the impact of implementing a peer-teaching instructional approach on a student’s self-confidence?

Chester County, the district in which the study was conducted, is a small rural district with an annual enrollment of approximately 5,400 students at five elementary schools, two middle schools, two high schools, one is a combined middle/high school, one career center, and one elementary/middle district sponsored charter school. The district also has an Alternative Program and one Adult Education Program. Over 65 percent of the students receive free and reduced lunch benefits: 47 percent are White, and 48 percent are African-American. Less than five percent represents other ethnicities: Asian, Hispanic, and American Indian. Geographically, Chester County school district encompasses 581 square miles in urban, suburban and rural communities of Great Falls, Chester, and Richburg (Chester County School District, 2017; “South Carolina Department of Education”, 2017; Executive Summary, 2017).

## **Plan for Data Collection**

The data collected was qualitative descriptive narrative-account of student-participants and quantitative data that involve the administration of a set of questions with resulting data in numerical form. The primary data collected (measures) included: student interview, questionnaire, and student survey. The interview and questionnaire were qualitative measures. The survey was a quantitative measure. Other qualitative data collected included student observations, focus group sessions and student artifacts. A triangulation mixed method design of qualitative and quantitative data was used to get an understanding and an accurate picture of the impact of student self-confidence from the emerging patterns or themes by comparing the data to see if they yielded similar results. Multiple sources of data collection enhanced the validity and trustworthiness of those findings using a triangulation strategy that led to accuracy and believability of the data (Mertler, 2017). Students were given these measures after they had conducted the peer-teaching experience.

### **Survey**

This quantitative survey composed of nineteen questions was a Likert scale that began with a statement and then asked students to respond to an agree/disagree continuum. Descriptive statistics were used to simplify, summarize and organize numerical data. For this study, measures of central tendency were included because they measured a collective level or responses of, attitude, perceptions or behavior of a group of student-participants (Mertler, 2017). Numerical responses were tallied on each question and reported in descending order (from greatest to least) to make more sense and easier to understand.

### **Semi-structured interviews**

Eleven student interview questions permitted the teacher-researcher to probe deeper and ask for clarification in a student's response to a given question. This was a face-to-face encounter with students to exchange ideas and get feedback on the peer-teaching experience that bordered on mutual interest. Less formal than a structured interview, a semi-structured interview allowed the researcher to change the sequence of questions, change the wording and sometimes follows up with optional questions during the conversation (Knust, 2015). The teacher-researcher interviewed each student-participant examined their responses with the intention to use a coding scheme to organize similar patterns or trends that answered the research question. Students were interviewed after the peer-teaching experience.

### **Questionnaire**

Students answered eight open-ended questions about their experience of peer-teaching and the impact it had on their self-confidence. This type of questionnaire called for an honest response in a student's own words. The student supplied the answer to the question raised in the questionnaire. Responses were examined with the intention of setting up coding based on similar patterns noted by students. Questions gave the respondent/student an opportunity to express his or her own opinions from a set of options (Knust, 2015). It has been my experience that some students expressed their thoughts with heart-felt written responses; especially when working with shy and quiet students with low-self-esteem and struggle with oral fluency.

## **Observations**

As a participant observer, the teacher-researcher lived with the students in the classroom observing and keeping notes of behavior and activities, so the researcher could directly experience the phenomenon being studied (Knust, 2015). Elements of the setting (classroom) that were observed included: physical setting, the participants' behavior, the activities and interactions noted in the classroom, the content of conversations between students, and the participant-observer's own behavior (Merriam, 1992). Observations of the peer-teaching experience was continuous throughout the study. Classroom observations were usually recorded from teacher comments and student feedback on working flip charts and later transposed onto a Word document and further broken down into codes to compare with other measures. Making observations over time, patterns started to emerge from the data collected.

## **Classroom Artifacts and Focus Group Sessions**

These documents were written or visual sources of data that helped me understand what was being observed in the classroom from student engagement and assisted me in answering the research question. I examined student reflection essays, and group feedback sessions (Mills, 2014). Student essays and focus group responses were examined coded on a spreadsheet. Artifacts aided in confirming trends and general themes that emerged to answer the research question. Group feedback sessions also provided insightful and animated feedback from their peer-teaching experience that was recorded on flip-charts.

## **Organization of Data**

To organize and store my data, I used both paper and digital storage. All measures completed on paper by students were stored in separate folders. This storage included artifacts. Some data was transferred into digital Excel spreadsheets to establish an organized method to compare measures leading to general trends in the study.

### **Plan for Data Analysis**

Qualitative and quantitative data were analyzed to understand patterns and trends in the data. The three primary measures analyzed included: survey, questionnaire, and interview (Refer to Appendixes A-C). The qualitative measures of questionnaire, and interview were descriptive narrative data that was analyzed, coded, grouped, and summarized. Parsons and Brown (2002) explained the process of qualitative analysis as, “systemically organizing and presenting the findings of the action research in ways that facilitate the understanding of these data” (p. 55). I followed a three-step process for conducting qualitative analysis: organization, description, and interpretation commonly entitled inductive analysis. The survey was analyzed using quantitative numerical data based on the number of “yes” and “no” responses. For example, twelve of sixteen (75 percent) participants answered “yes, I agree feeling confident in leading others.” Frequency of responses and a description of the questions were used to compare common trends and patterns with other measures.

Using an inductive analysis, qualitative data were organized in a system of thematic coding used in the analysis of data, based on similar types of information from all data collected related to the questions and responses of the measures and related to the research question (Schwalbach, 2003, as cited in Mertler, 2017). According to Patton

(1980), “Inductive analysis means that the patterns, themes, and categories of analysis come from the data; they emerge out of the data rather than imposed on them prior to data collection and analysis” (p. 306). Similar patterns and trends were captured from the measures and coded. As I read through the data, I developed codes from the responses given by the students. For example, “self-confidence” would be coded SC, or self-regulation would be coded SR. Other personal attributes or leadership skills that emerged from the data was also coded. Reading and rereading coded data was critical (Best, 2012).

Once the qualitative data and the quantitative data were collected, the measures were compared to find similarities in the trends and patterns noted in the measures, including notes from student essays and focus groups sessions. (Mills, 2014). All qualitative codes and categories were consolidated on a master spreadsheet. As I went through this process, I began to see a clear view or picture of dominating patterns and trends that can answer my research question. Dana and Yendal-Hoppey (2014) explains a summative data analysis:

The process of summative data analysis is to imagine yourself putting together the “world’s most challenging puzzle.” Hence, as you work, you know that the different pieces you are putting together will result in a picture, but you are uncertain of what it is going to look like in the end. You spread all the jigsaw pieces out on a table. You examine the puzzle pieces and ponder about how these pieces look. Based on what you notice; you begin a process of grouping or sorting these pieces with a similar color (before you put the puzzle together). As you begin fitting pieces together and the picture begins to take shape, you may

realize that some of the ways you grouped the remaining puzzle pieces are not correct (placed in the right group). You regroup as you continue to work on your puzzle. Although there are frustrations along the way, you finally complete the puzzle (p. 167).

## **Survey**

Participants responded to a Likert scale agree/disagree continuum that examined the frequency of the responses based on options for each item (Appendix C). This quantitative data was analyzed by the “measure of central tendency” method that described the collective level of responses by the student-participants using a “mean” to calculate the average set of responses for each item/response question (Mertler, 2017). Numerical data was tallied by students’ responses and converted into percentages. For example, 15 of 16 students responded, “yes, I agree” to question one. “Did this experience improve your self-confidence?” 94 percent (converted from number of responses) of the students felt the peer-teaching experience improved their self-confidence. The goal was to find the percentages of “yes I agree” responses from each question and compare the data with other measures.

## **Questionnaire**

Unlike the data analysis strategy used in the survey, responses from a completed open-ended qualitative questionnaire were analyzed based on the preponderance of similar responses from student participants. Each response from the students were coded on the questionnaire document. This measure allowed students to provide their own responses (Refer to Appendix B). The questionnaire permitted some students who

struggle in oral fluency to express their thoughts with written responses. This data was integrated and compared with the other measures.

### **Semi-structured interviews**

In a qualitative interview, the student-participants were interviewed in the classroom (Refer to Appendix A). This was a face-to-face encounter with participants. The teacher-researcher transposed students' verbal responses on a document. Student responses were analyzed and coded on the interview document for each student-participant.

### **Observations**

As a teacher-researcher and participant observer, I had the unique advantage to objectively observe and analyze student-participants not only in the classroom, but in other school functions in the roles of teacher, mentor, coach, and career-counselor. This involved carefully watching and systemically recording in field notes what I saw and heard occurring in this natural setting. This included a student's verbal and non-verbal reactions, as they prepared to teach their peers and present their lesson to their peers. Through general discussions, and continuous oral and written feedback from students throughout the semester, field notes were recorded on Word documents and coded based on similar patterns observed in the classroom. In the analysis, the following question should be asked: How does this information answer my research question?

### **Classroom Artifacts**

Student essays and focus group discussions provided additional data that contributed to understanding what is going on in the classroom. (Mills, 2014). The



artifacts were coded based on what the students were writing in their essays and the feedback the teacher-researcher was getting from the focus group sessions.

### **Teacher-Researcher Role**

Unlike traditional researchers who are somewhat removed from the environment, the researcher in this study must become active participants in their classrooms as well as active observers of the learning process (Mertler, 2017). In this action research study, the teacher-researcher played three roles: teacher, facilitator, and researcher.

#### **Teacher**

The researcher was the primary teacher in his/her classroom. The teacher planned and organized the peer-teaching environment in the classroom before the students implemented the peer-teaching strategy. The teacher instructed the student's lessons on the fundamentals of teaching JROTC content and prepared them to teach to their peers. This involved continuous interaction with students as they planned, prepared, and practiced their presentations before peer-teaching. My role as teacher changed after I felt that they were ready to teach their JROTC peers.

#### **Facilitator**

As a facilitator, I became a coach and mentor. I observed their presentations, administered oral and written feedback continuously using formative assessments (rubrics, checklists) and summative (performance) assessments during this study. Other classroom documents were examined to help me assess their progress such as: classroom worksheets, essays, quizzes and face-to-face oral or written feedback.

## **Researcher**

As the instrument of the study, I was responsible for developing an action plan or research design that explained how the study was carried out and answering the research question at the end of the study. This includes implementing the *developing* and *action phases* of the action research design of this study (Mertler, 2017). Students completed the measures of the study at the end of the peer-teaching experience. I collected and analyzed the data. The teacher-researcher has the unique advantage of “insight” to data analysis and can analyze a deeper understanding this study. Ethical considerations must be considered in this action research study. I examined how students were treated and how data was collected and analyzed. I received permission from the school district, high school principal, students and parents to use research data that was collected and analyzed in this study.

## **Potential Weaknesses**

The research delimitations of this study included: a convenience sample of JROTC students in a classroom and a small sample population. Additionally, only one school was involved in this study. ‘Insider research’ by the researcher can provide specific insight to data analysis but can create bias because the teacher is the researcher and can sub-consciously manipulate the measures of the study. (Tewksbury & Gagne, 1997). Student-participants studied in a short period, as opposed to a longitudinal study was a limitation. The participants were a small targeted sample of students in a JROTC program. During the interviews students often gave short answers and were distracted by other students in the classroom.

## **Ethical Considerations in Action Research**

The teacher-researcher was responsible for the ethical standards when conducting action research with students in a classroom. When designing an action research study, researchers examine how students are treated and how data is collected and analyzed. You must get permission from the students and parents to use research data collected in the study. This is especially true if you are going to share this research with other educators. Every attempt was made to protect student-participant's privacy. In this study parents consented and agreed to allow their child in the research. Confidentiality and anonymity were essential to the success of any action research study (Mertler, 2017).

Another important ethical issue was the principle of beneficence (POB) and principles of honesty (POH). POB means the research was conducted “to gain knowledge about human beings and the educational process, and benefit someone or some group of people and never be conducted as a means of doing harm to individuals or to denigrate, find fault or suppress academic progress” (Mertler, 2017, p. 115). The researcher must be honest in all parts of the study. Teacher-researcher bias must be addressed to ensure objectivity of the study. The teacher-researcher considered the safety and well-being of the students. Equally important, the teacher-researcher informed the school principal about the study and the research conducted in the classroom; which included following school district guidelines. Lastly, the teacher-researcher informed the students in the classroom and parents the results of the study.

## **Action Research Validity**

One of my concerns was ensuring that the measures used to collect and analyze data accurately depicted what I intended to measure. I was concerned about the accuracy

and believability (trustworthiness) of the data. I had to rely on the data and not any bias in order to answer the research question. “Is this data, descriptive and contextualized so other teachers or researchers examining the study can identify with the setting? The goal of this data is not to generalize findings, but to present a clear, concise and in-depth understanding of this particular setting” (Mertler, 2017, pp. 140-141).

### **Developing Plan**

Upon completion of the collection and analysis of data and other artifacts, the developing plan was a proposed strategy for modifying the peer-teaching strategy and the impact this approach had on a student’s self-confidence. The goal of this plan was to improve the peer-teaching experience and make improvements that would advance the effectiveness of the peer-teaching experience.

### **Reflecting Plan**

The researcher should make every effort to share the results of the study to educators, teachers, counselors, school leaders, local community leaders and students; especially the student-participants. Mertler (2017) explains:

Sharing the results, is the real activity that helps bridge the divide between research and application. Communicating your results lends credibility to the process of conducting action research because teachers and others in the education process tend to see this process as one that gives teachers a voice.

Sharing the study helps narrow the gap between theory/research and practice. (p. 259)

A reflecting plan gives the teacher-researcher an opportunity to gain additional insight into the research process. It also allows me to an opportunity to add clarity to the study

and make necessary revisions for the next cycle. Did I answer the research question? Did I state the correct research question? Did I use the correct research design and methodology? Did I use accurate measures to answer my research question? Did I use sufficient data? Reflection allows practitioners to experience their professional growth in their classrooms. I hope to share this study in the future to colleagues, my community and at future district-wide conferences.

### **Conclusion**

Implementing a peer-teaching instructional approach in the classroom was a strategy that can have a positive effect on a student's motivation and self-confidence. The purpose of this study was to examine student-participant's self-confidence based on the implementation of peer-teaching instructional approach in the classroom by the teacher-researcher. The research question that guides this study was: What is the impact of implementing a peer-teaching instructional approach on students' self-confidence? To arrive at a reasonable and accurate conclusion of this study, scholarly literature showed a preponderance of research that addressed my research question. Additionally, data was collected, analyzed, and interpreted that supported the research question. This action research study was conducted in a naturalistic setting that can provide educators a realistic picture and "bird's eye view" of what is happening in the classroom. An action research study of peer-teaching was a snapshot in time and may never have an understandable end. Teachers will continue to research their classroom practices, evaluating, and modifying classroom learning strategies from one semester to another.

## CHAPTER 4

### FINDINGS

This study examined the impact of peer-teaching as an instructional approach on a student's self-confidence in a classroom. This was a point in time study using a peer-teaching, instructional approach with JROTC students covering a five-month period. The problem of practice for this study stems from students not given the same opportunities to use and develop self-confidence and take on higher levels of responsibility from a traditional (or teacher directed instruction) learning environment, as they prepare for the 21<sup>st</sup> century workforce. Students don't receive the opportunities in a traditional learning environment. Because of their limited exposure to peer-teaching, students lack the self-confidence in their ability to an autonomous approach to completing their assigned projects without explicit direction from the classroom teacher. Using a peer-teaching, learning strategy allowed students to actively participate in the learning process, work with their peers, and develop an emerging self-confidence without feeling intimidated by teachers or smarter students.

#### **Intervention**

This case study used a triangulation mixed methods design to examine the impact of peer-teaching on a student's self-confidence. JROTC high school students participated in a natural setting by the teacher-researcher as shown in Figure 4.1, Triangulation.

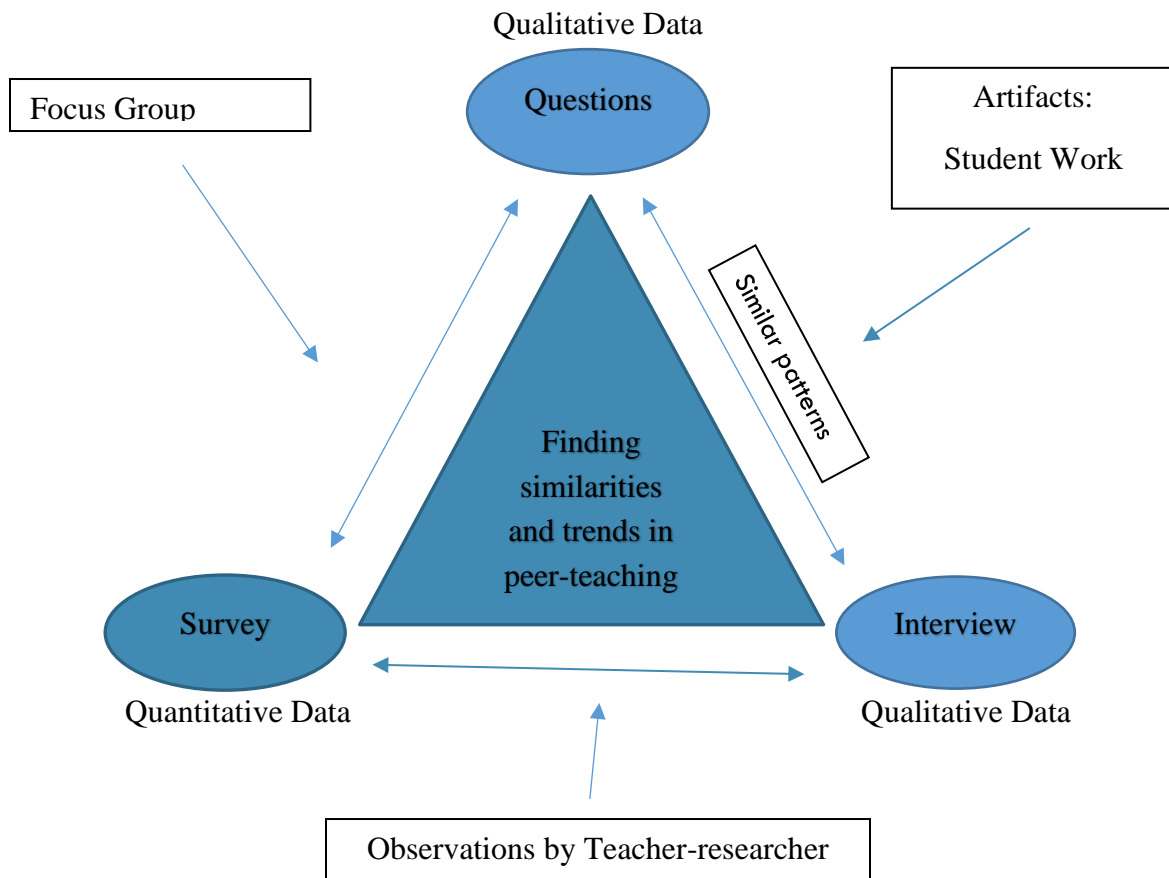


Figure 4.1 Triangulation: A Mixed Methods Structure

Sixteen JROTC students in the grade levels of 9<sup>th</sup> to 12<sup>th</sup> participated in this study. Data were collected and analyzed using three measures: survey, questionnaire, and interview. Other pertinent data were also examined: teacher-researcher observation, focus group sessions with student participants, and artifacts. An inductive analysis was used to reduce the voluminous qualitative data. A coding scheme as shown in Table 4.1, was used to group data that provided similar types of information (Mertler, 2017; Parsons, 2002).

Table 4.1 Coding Scheme: Peer-Teaching Data

Code	Description
SC	Self-confidence in oneself and in power and abilities
MC	Meta-cognition (awareness of one's learning or thinking)
SREF	Self-reflection (examining one's motives or beliefs)
CF	Exploring a career in the future
HSR	Higher sense of responsibility
MTL	Motivation to teach and learn
SI	Social Interaction
CR	A caring relationship
ACAD	Improves academics
F	Having fun teaching
Tm	Developed teamwork skills
COLL	Collaboration with peers (sharing ideas, working with others)
COOP	Cooperation from peers
ES	Emotional support from peers
NT	Non-threatening environment, free to express oneself
EASS	Equal access. Level playing field for all students sharing success with other peers
SS	Sharing success with other peers
OF	Fluency (using language easily and accurately)
LDR	Use leadership skills
SREG	Self-regulation (ability to manage your emotions and behavior)
PLORG	Planning, organization skill development
PR	Improved in presentation skills
TM	Time management
CS	Communication skills
AU	Autonomy (Independent work)



The goal was to describe meaningful patterns that emerged from the data analysis and create a picture of the peer-learning experience. I served as teacher and researcher of this action research study and the interpreter of these findings. Glesne (2011) stated that qualitative researchers draw on their own experiences, knowledge, and theoretical leanings, collect and analyze data based on their understanding of their classroom. My experience and beliefs with peer-teaching gave me a deeper insight into this instructional strategy and the implications of the peer-learning experience beyond the classroom.

### **Survey**

The item-response quantitative survey, a Likert scale, was completed by the participants late in April of 2018 in the JROTC classroom (Mertler, 2017). The survey was composed of 19 questions. Students had three options to respond to each question, as shown in Table 4.2. Each item was a descriptive statement of the peer-teaching experience. A measure of central tendency was used to describe the collective level of opinions of the participants. The numerical responses were tallied and converted into percentages (Johnson, 2008; Mertler, 2017). The percentages were calculated based on the number of responses by the students divided by the sixteen participants (mean). For example, 12 of the 16 students or 75 percent responded, “yes, I agree peer-teaching was a good instructional approach.” Based on the higher percentages noted on several responses to the questions, dominant patterns emerged and were compared to other measures. Most of the responses from students answered “Yes” I agree,” and to a lesser extent, “I somewhat agree.” This quantitative measure used the description of questions along with the numerical responses to compare patterns and trends with other qualitative measures.

Table 4.2 Student Survey Responses

Question	Response					
	Yes		Somewhat		No	
1. Did this experience improve your self-confidence?	11/16	<b>69%</b>	5/16	<b>31%</b>	0/16	<b>0%</b>
2. Do you feel peer-teaching improved your presentation skills?	11/16	<b>69%</b>	3/16	<b>19%</b>	2/16	<b>12%</b>
3. Did this experience improve your planning and organization skills?	12/16	<b>75%</b>	2/16	<b>12.5%</b>	2/16	<b>12.5%</b>
4. Did this experience give you the confidence to take on a higher degree of responsibility in the classroom?	9/16	<b>56%</b>	6/16	<b>38%</b>	1/16	<b>6%</b>
5. Did peer-teaching improve your ability to speak easily and smoothly?	6/16	<b>37.5%</b>	8/16	<b>50%</b>	2/16	<b>12.5%</b>
6. Did this experience improve your ability to prepare lessons?	9/16	<b>56%</b>	7/16	<b>44%</b>	0/16	<b>0%</b>
7. Peer-teaching allowed me to work independently without direct supervision by a teacher?	12/16	<b>75%</b>	2/16	<b>12.5%</b>	2/16	<b>12.5%</b>
8. Did peer-teaching improve your ability to work with your peers?	9/16	<b>56%</b>	7/16	<b>44%</b>	0/16	<b>0%</b>
9. Did this experience help you improve your ability to control and direct your own feelings, thoughts, and actions as you were preparing and teaching your peers?	11/16	<b>69%</b>	5/16	<b>31%</b>	0/16	<b>0%</b>
10. Peer-teaching allowed you to reflect on your teaching experience and ways to improve your peer-teaching experience.	12/16	<b>75%</b>	3/16	<b>19%</b>	1/16	<b>6%</b>
11. Peer-teaching has improved your ability to lead others.	10/16	<b>63%</b>	5/16	<b>31%</b>	1/16	<b>6%</b>
12. The peer-teaching experience has been challenging and exciting.	6/16	<b>37.5%</b>	10/16	<b>62.5%</b>	0/16	<b>0%</b>

(continued)

Table 4.2 Student Survey Responses (continued)

13. This experience has improved my ability to think and problem-solve the preparation of lessons and organization of the presentation.	11/16	<b>69%</b>	4/16	<b>25%</b>	1/16	<b>6%</b>
14. Peer-teaching has improved my overall self-worth, and belief in myself.	8/16	<b>50%</b>	4/16	<b>25%</b>	4/16	<b>25%</b>
15. Peer-teaching has improved my academic studies in school.	4/16	<b>25%</b>	8/16	<b>50%</b>	4/16	<b>25%</b>
16. Peer-teaching allows me the independence to learn JROTC content and teach others.	8/16	<b>50%</b>	8/16	<b>50%</b>	0/16	<b>0%</b>
17. Peer-teaching motivates me to learn subject content.	5/16	<b>31%</b>	9/16	<b>56%</b>	2/16	<b>12%</b>
18. Peer-teaching is fun.	7/16	<b>44%</b>	7/16	<b>44%</b>	2/16	<b>12%</b>
19. Peer-teaching is a good instructional approach to learning JROTC content.	12/16	<b>75%</b>	4/16	<b>25%</b>	0/16	<b>0%</b>

Based on the number of affirmative responses to each item, the results were divided into three major tiers (T1, T2, T3) as shown in Table 4.3, Student Survey Description. The purpose of the three tiers was to show how important the peer-teaching experience was for the students as well as to establish consistent major (high percentage responses) patterns with which to compare with other measures. Tier one showed the major dominant frequency of responses by the students.

Table 4.3 Student Survey Description

Question	Description	Responses from students
7. Peer-teaching allowed me to work independently without direct supervision by a teacher.	Ability to work independently	75% T1
10. Peer-teaching allowed you to reflect on your teaching experience and ways to improve your peer-teaching experience.	Improvement in self reflection Self-reflection (examining one's motives or beliefs)	75% T1
16. Peer-teaching allows me the independence to learn content and teach others.	Autonomy, Independent work	50% T3
1. Did this experience improve your self-confidence	Self-confidence	69% T2
2. Do you feel peer-teaching improved your presentation skills	Improvement in presentation skills	69% T2
9. Did this experience help you improve your ability to control and direct your own feelings, thoughts, and actions as you were preparing and teaching your peers?	Improvement in meta-cognition skills	69% T2
13. This experience has improved my ability to think and problem-solve the preparation of lessons and organization of the presentation	Improved ability to problem-solve	69% T2
11. Peer-teaching has improved your ability to lead others.	Improvement in leadership skills	63% T2
4. Did this experience give you the confidence to take on a higher degree of responsibility in the classroom?	A higher degree of responsibility	56% T3
6. Did this experience improve your ability to prepare lesson?	Improvement in preparing lessons	56% T3
8. Did peer-teaching improve your ability to work with your peers?	Collaboration with peers (sharing ideas, working with others)	56% T3

Table 4.3 Student Survey Description (continued)		
Question	Description	Responses from students
19. Peer-Teaching is a good instructional approach to learning JROTC content.	Peer- is a good instructional approach	75% T1
14. Peer-teaching has improved my overall self-worth, and belief in myself.	Self-reflection, Self-worth	50% T3

*Note.* T1 = Tier one; T2 = Tier two; T3 = Tier three

In the first tier, the survey revealed peer-teaching was a good instructional approach to learning, and students improved their planning and organizational skills. The peer-teaching strategy allowed students to work independently and self-reflect upon their teaching experience and ways to improve their teaching skills. In the second-tier, students felt peer-teaching was challenging and exciting, because they could work on their presentation skills, solve problems, and lead their peers. They were given time to analyze (meta-cognition) their approach to planning and presenting, which resulted in an emerging self-confidence. The third tier revealed peer-teaching motivated students to learn JROTC content and the Global Economy through the Junior Achievement Program at the elementary school. The students felt a higher sense of responsibility because they did not want to let their peers down. Students collaborated with each other by sharing their ideas and thoughts, knowing that their peers respected them. The social interaction with others had a positive effect on their self-worth.

### **Questionnaire**

The questionnaire was completed by the participants late in April of 2018 in the JROTC classroom. The questionnaire was composed of eight questions associated with their peer-teaching experience. Sixteen student participants were asked to provide short,

thoughtful written responses to each question. The questions were open-ended where participants provided their own responses (Mertler, 2017; Johnson, 2008). The responses the students gave were short answers. Their responses were honest and sincere. The analysis revealed unexpected thoughts and feelings as opposed to closed ended questions. The questionnaire allowed students to express their feelings. Table 4.4, Student Responses to Questionnaire, is a summary of student responses for each question.

Table 4.4 Student Responses to Questionnaire

Question	Responses
1. What did you like about peer-teaching and teaching younger students at Great Falls Elementary School? (F), (MTL), (SI), (COOP)	<ul style="list-style-type: none"> <li>- Students enjoyed teaching younger children; a positive experience.</li> <li>- JROTC participants and younger children were highly motivated.</li> <li>- Students and younger children enjoyed interacting with each other (cooperation).</li> </ul>
2. What did you learn about peer-teaching? (SC), (LDR)	<ul style="list-style-type: none"> <li>- Improved self-confidence</li> <li>- Improved my leadership skills</li> <li>- Moved me away from my comfort zone</li> </ul>
3. Did you think peer-teaching improved your ability to lead others? (SC), (LDR),	<ul style="list-style-type: none"> <li>- Improved leadership skills through collaboration and cooperation with my peers</li> <li>- Improved my self-confidence, to get up and lead others</li> <li>- It got me out of my comfort zone, and shyness</li> </ul>
4. How did you feel about your self-confidence to peer-teach others at the beginning of the semester? (SC)	<ul style="list-style-type: none"> <li>- Self-confidence was low</li> <li>- Improved over the semester</li> </ul>
5. How do you feel about your self-confidence after peer-teaching this semester?	<ul style="list-style-type: none"> <li>- Self-confidence improved (LDR), (SC)</li> <li>- Leadership skills improved, confident in leading other peers</li> <li>- It made me believe in myself (self-worth)</li> </ul>

(continued)

Table 4.4 Student Responses to Questionnaire (continued)

6. How has peer-teaching helped you as a student in your academic studies and other extra-curricular activities? (PLOG), (LDR), (PR)	- An understanding of what teachers go through planning, organizing and teaching a lesson. - Using leadership skills outside the classroom - Improved presentation skills
7. What effect does peer-teaching have on your motivation to learn in and outside the classroom? (SC), (SI), (COLL)	-It gives me self-confidence to take on new tasks -Enjoy listening, helping and teaching my peers
8. What skills have you developed when planning, preparing, and teaching your peers?	-Organization, communication, time management skills, collaboration with peers.

Question six had a variety of responses compared to other questions. The students responded with some interesting comments: everyone learns differently; improved my social skills with other peers and teachers; found new ways of learning; motivated me to want to come to school; and it [peer-teaching] makes you think out of the box when teaching younger students' content. Question five asked the student-participants about their self-confidence and the peer-teaching experience. They responded by stating their self-confidence, improved because they were leading their peers by presenting lessons to their peers and made them believe in themselves (self-worth).

Based on the analysis of the responses, the two major patterns of this measure were: improvement in student's self-confidence and developing leadership skills. Students enjoyed peer-teaching their age-level peers and younger children. Several students stated that this experience "made them move out of their comfort zone." Teamwork was evident in this questionnaire. Students felt that their communication skills improved and cooperation with their peers was positive and helpful. Several students felt

an appreciation for other school teachers and understood what teachers go through planning, organizing and teaching subject content.

### Interview

The teacher-researcher interviewed 13 of the 16 student participants. One student did not want to be interviewed and the other two students were absent at the time of the interviews. The teacher-researcher asked 11 questions. The interviews were administered in May 2018 in the JROTC classroom during the school day. This was a face-to-face semi-structured interview. In some interviews, I asked a few additional optional questions to follow-up on an original question (Mertler, 2017). Table 4.5, Responses to Interview Questions, is a summary of student responses based on similar responses from the students.

Table 4.5 Responses to Interview Questions

Question	Responses
What has peer-teaching taught you? (LDR), (PR), (TM), (CS), (SC)	Leadership skills, presentation skills, time management, self-confidence
How has peer-teaching benefited you in your life? (CS)	Improved communication skills
How do you feel about this peer-teaching experience? (F), (SREF)	Positive feeling, fun, self-reflection
What skills did you develop? (CS), (PLORG), (OF), (Tm), (SC)	Communication skills, organization, fluency, teamwork, self-confidence
What have you noticed in the classroom when you are preparing and teach your peers? (MTL), (COLL), (COOP)	Peers are motivated to learn/teach content, collaboration, and cooperation
How has this affected your relationship with your peers? (ES), (CR) (SI) (SS)	Developed close relationships with peers, trust, and respect for one another
How has this experience different than other classes? (SI), (PLORG)	Students are given opportunities to teach content, extensive peer interaction.

(continued)



Table 4.5 Responses to Interview Questions (continued)

<p>How important is working with your peers when you are preparing and teaching your lessons? (SI), (F), (MTL) (ES). (CR), (COLL), (NT), (SS) (COOP) (CS)</p>	<p>Critical to the success of teaching, learn from peers, share ideas, collaborate, emotional support from peers, classroom is non-threatening</p>
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I created a list of codes for each student’s response for each question and noted the similar responses in Table 4.5. Question four was interesting. When asked what skills they developed, students mentioned, communication skills with their peers, organization skills when preparing lessons, fluency when teaching to their peers, teamwork, and self-confidence. Below are excerpts of their experiences teaching their peers in the JROTC classroom and teaching mini-lessons at the elementary school:

The effect of peer-teaching motivates me to continue to learn and [improve giving presentations] with 100% confidence. Peer-teaching has helped me in my other classes by not being afraid to [speak in front of a class]. [I will be able] to organize lessons and create activities. I learned to communicate, organize my [lessons], balance work and other tasks. (M. Hauanio, personal communication, May 7, 2018).

I learned that peer-teaching takes practice to become good at communicating. Peer-teaching is very difficult, but after I gained experience with teaching it became easier for me to communicate instructions [with my peers]. (B. Blakley, personal communication, May 7, 2018).

It [peer-teaching] takes patience. You have to be patient with your students. It really has improved my presentation skills and time management

skills. My grades [improved] on projects. (D. Banks, personal communication, May 8, 2018).

Peer-teaching taught me leadership and responsibility and [teaching skills]. Teaching others helps you lead others. My confidence was not very high [in the beginning] but it has improved a little (H. Mitchell, personal communication, May 8, 2018).

[Teaching at the elementary school], I liked the experience more than anything because I loved [the way the kids] cooperated. I learned to plan and present a lesson. I definitely now understand how to lead others. I feel more confident [peer-teaching] especially with my ability to manage time and [organize my lesson]. [Peer-teaching] it motivates me to be more interested in learning, so I could teach others. (L. Digh, personal communication, May 14, 2018).

Based on the responses and an analysis of the responses given in the interviews, the main categories or patterns for this measure were: self-confidence (SC), communication skills (CM), collaboration with peers (COLL), teamwork (Tm), planning and organizational skill improvement (PLORG) and time management (TM). Students had a positive feeling about their experience. They were highly motivated. Peer-teaching was fun. They enjoyed interacting with their peers and, developing relationships with fellow students. They learned from their peers, shared their ideas, and received emotional support from peers. They felt the classroom was non-threatening. They all seem to agree that their planning and organizational skills improved. This included preparing to teach, time management and communication skills over the course of the semester long JROTC course.

## **Observations**

Observation during this period of time started in January of 2018 and ended in May of 2018. The elements observed included the physical, natural setting in the JROTC classroom, and the content of conversation between students and the teacher-researcher. After the teacher-researcher taught the students' teaching skills as outlined in the JROTC curriculum, the participants were instructed to plan, prepare, collaborate, practice and teach a JROTC lesson to other students in the class. This included planning, preparing and teaching younger children about the Global Economy at the elementary school through a partnership with Junior Achievement. Teams were formed, and the students showed excitement and motivation as they went through the peer-teaching experience. For the most part their behavior was positive. They were motivated when it was their turn to teach their peers. They liked the idea of learning by "doing." When the students were not teaching, they were actively participating with their peers that were teaching. The students that were teaching were up for the challenge because they did not want to let their peers down. I saw teamwork and bonding occur with many of the students. The progress the students made over the course of a semester was noted through formative and summative assessments and oral feedback from their peers and teacher. One of the main comments that I frequently heard throughout the semester from several students was, "You made me get out of my comfort zone."

From the beginning of this journey, JROTC students were nervous, shy, self-conscious, and unsure about getting in front of a class and teaching their peers. They lacked self-confidence in presenting their lesson. However, as the semester progressed, their self-confidence grew. Factors that had an impact on their self-confidence included:

taking on a higher sense of responsibility; working with their peers and sharing their ideas, thoughts and concerns; allowing them to make mistakes without ridicule by peers and teacher; and working on their own without the teacher telling them what to do, and how to do plan, prepare and present lesson. At times the JROTC students appeared to be socializing and not getting their work done. However, they eventually focused on their lessons. Students enjoyed the “space” to plan and teach their lessons. Another factor that had a positive impact on a student’s self-confidence was the role the teacher-researcher played throughout this experience. The teacher was a facilitator and guided the students when they needed help. I also noticed that the shy students enjoyed the experience and at the end of the semester became talkative and not afraid to talk to their peers. Social interaction and praise from their peers and teacher had a positive effect on the peer-teaching strategy.

### **Classroom Artifacts**

As the teacher-researcher of this study, I had the unique experience of coaching and mentoring my students throughout this research period. Sixteen of my JROTC students covered three class periods. This allowed me to get face time with them and give them individual attention. Because this was a leadership class, I had a vested interest in developing their leadership skills to prepare them for advancement in the JROTC corps and promoting them to staff officers at the end of 11<sup>th</sup> grade. This included asking them to write reflection essays and feedback from the focus group sessions. Working with a small group of students, I provided continuous feedback with constructive criticism and praise. Two of my senior cadets that had extensive experience in peer-teaching assessed their peers using rubrics, and face to face feedback with their peers. I also gave them

verbal feedback. There was a willingness by the students to trust the feedback from their peers and teacher.

The reflective essays were submitted in May of 2018. The teacher-researcher asked students to write a two-page essay about their peer-teaching experience. They were given a few weeks to complete. Unlike a survey, questionnaire, and personal interview, most of the students wrote thoughtful essays. The main coded patterns that surfaced by analyzing the essays included: self-confidence in oneself, higher level of responsibility; collaboration and cooperation with peers; “taking me out of my comfort zone;” improved presentation and leadership skills; a desire to become a teacher; opportunities to apply critical thinking skills to relevant and authentic activities; students working together sharing success; and sharing knowledge without intimidation or ridicule from others.

Listed below are excerpts of students’ essays:

Peer-teaching is simply the act of teaching your peers. Though it seems ordinary, peer-teaching is a perfect way to develop important skills that will cause you to succeed in life. For example, peer-teaching has taught me how to become organized, how to become more confident in myself, and how to lead a group of people. These skills are hard to develop [in] a short period of time. To develop all those skills at one time is amazing. (T. Price, personal communication, May 22, 2018)

Peer-teaching is a great way to get out of your comfort zone. It shows how much you're dedicated to teaching. Peer-teaching brings out the best in people. [It] helped me a lot. It also brought me close to my fellow cadets. Peer-teaching helps you understand what type of person you are. [It] helped me with my

communication skills. I didn't know that peer-teaching was one of the best decisions I ever made. (S. Brown, personal communication, May 11, 2018)

This year, I started teaching to my peers. Peer-teaching is a good experience if you're as shy as I am. At the beginning of the year, I barely talked at all but now since I've taken peer-teaching it helped me overcome that. In peer-teaching you get to teach all your peers and for me it's a better way to learn [JROTC content]. While you're upfront teaching your peers, they seem very involved in what you're teaching and [appeared] motivated to continue to learn about the topic you're teaching. The best skill that I've learned from peer-teaching is organization. To all those that are shy, peer-teaching is a good thing to learn and can help you out in the future. (B. Hartley, personal communication, May 16, 2018)

Peer-teaching can be defined as a student leading a group of students. This year, in my JROTC class, we achieved peer-teaching. We spent weeks preparing for Junior Achievement, and teaching JROTC prepared classes. These types of teaching methods had a lot of benefits including a confidence boost, preparation skills, and organizational skills. I believe that peer-teaching has become a huge benefit for myself and my peers through our instructor, Colonel Corral. I think peer-teaching went very well. I came to understand my peers a little better. We all began to understand each other's way of teaching and how to react to it to keep everyone calm and collected. Peer-teaching affected the way I handle my other classes. I present more clearly and with more confidence. I have learned to become more organized and prepared for the lessons or projects ahead of me. I

believe that if my college asked me to [present a lesson], I would look back onto these JROTC lessons and really show them what [what I can do] (B. Quick, personal communication, May 21, 2018)

The reflective essays displayed positive feelings about their experience, motivation for the opportunity to teach their peers and a boost in their self-confidence. Student comments also articulated their appreciation for developing new skills and how peer-teaching was going to help them in the future. The comments revealed heartfelt, authentic words, and how relevant teaching their peers effected their academic development.

### **Focus Group Sessions**

Four group sessions were conducted during the semester long JROTC course during the periods of January-May 2018. The teacher-researcher conducted the sessions in the JROTC classroom. These sessions were conducted to get feedback on the implementation of peer-teaching and the progress they were making. In the first two sessions, the students discussed “good things” and “bad things” about their presentations and what they must do to improve their peer-teaching skills. Feedback was placed on flip charts and transcribed on a Word document. In the last session the students talked about the peer-teaching experience.

As a group the participants felt good about their accomplishments and especially self-confident in their ability to teach JROTC content in front of their peers. They commented on how their planning and organizational skills improved. A common pattern mentioned by the students was “stepping out of their comfort zone.” They enjoyed the teamwork and interaction with their peers. Many students felt connections peer-teaching

and teaching younger children at the elementary school. They felt teaching was relevant because they applied what they learned and “doing” something with their newly acquired knowledge. Students felt that their leadership skills improved because they were in front of their class leading.

Many comments made by the students are reflected in their essays and similar to the focus group sessions. They stated that they improved their communication skills and worked in an environment that placed them in a higher level of responsibility. This experience allowed them to be creative, independent, seek advice from other students, teach and have fun. The peer-learning experience allowed them to self-reflect on their presentation skills and adjust the way they delivered their lessons and improve their fluency skills.

### **Analysis of Data**

The findings of the data analyzed included three primary measures: survey, questionnaire, and interview. The results showed a pattern of trends that answered the research question: What is the impact of implementing a peer-teaching instructional approach on a student’s self-confidence? Teacher observations, student artifacts, and focus group sessions supplemented data that had a noted effect of answering the research question. All measures were compared to find common trends and patterns represented by similar codes associated with qualitative measures, including artifacts, observations and focus group sessions, and dominant patterns in the frequency of the numerical data in the answered questions by the students in the quantitative survey.

Students felt that their self-confidence was positively influenced through the peer-teaching instructional approach in the classroom. The trends and patterns noted in the



findings followed a cause and effect scenario. By planning, preparing, organizing, rehearsing, and presenting the lesson the effect was a developing self-confidence. From the similar patterns or characteristics noted in the data analysis of the peer-teaching experience, students not only learned the JROTC content, and prepared the lesson, but actively engaged and demonstrated their presentation skills. By taking them out of their comfort zone, teaching them how to teach a lesson, planning their lessons, engaging with their peers, leading their peers, sharing their ideas with others and working as a team, the effect was an emerging self-confidence displayed by the students. Table 4.6, Emerging Trends and Patterns outlines the findings that show the established patterns consistent with all measures and supplemental data analyzed.

As shown in Table 4.6, the most common and consistent trend that emerged was self-confidence. This trend was abundantly noted in the analysis. The peer-teaching experience by the student-participants gave the students an opportunity to develop self-confidence to plan, organize, and prepare JROTC lessons, present the lessons and work on their presentation skills. This experience allowed them to boost their leadership skills, develop communication skills with their peers, collaborate with their peers, and own their work. Peer-teaching allowed the students to “step out” of their role as a student and shift into a teacher role and made them feel a higher sense of responsibility to their academic grades, and to their peers. The findings demonstrate that using a peer-teaching instructional approach positively impacts a student’s self-confidence; and answered the research question.

Table 4.6 Emerging Trends and Patterns

<b>Survey</b>	<b>Questionnaire</b>	<b>Interview</b>
Self-confidence	Self-confidence	Self-confidence
Plan, organizational skills	Plan, organizational skills	Plan, organizational skills
Leadership	Leadership	Leadership
<b>Observation</b>	<b>Artifacts</b>	<b>Focus Group Sessions</b>
Self-confidence	Self-confidence	Self-confidence
Social interaction	Social interaction	Social interaction
Presentation Skills	Presentation Skills	Presentation Skills
Higher sense of responsibility	Higher sense of responsibility	Autonomy
Collaboration	Collaboration	Creativity

*Note.* Three measures and other pertinent data.

### **Conclusion**

Using a triangulation mixed-methods design, two qualitative measures were inductively analyzed and coded to establish similar patterns and trends that answered the research question. Artifacts, teacher-researcher observations, and focus group sessions supplemented the data pertinent to the findings of this study. One quantitative measure used descriptive statistics to simplify, summarize, and organize numerical data on a frequency distribution table to establish patterns and trends. The Tables and Figures provided the methodology of this study and, the findings of the three measures (Mertler, 2017; Parsons & Brown, 2002). Student essays and focus group sessions highlighted the peer-teaching experience and provided insightful data that assisted the teacher-researcher in establishing patterns and trends similar to the three primary measures used in this

study. Measures were reread numerous times to establish which themes best supported the data. Enhanced self-confidence was the major trend associated with the findings and answered the research question: What is the impact of implementing a peer-teaching instructional approach on a student's self-confidence?

## CHAPTER 5

### DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

This study examined the impact of peer-teaching as an instructional approach on a student's self-confidence in a classroom. The problem of practice for this study stems from students, attending a Title 1 rural high school, not being given the opportunity to develop self-confidence and take on higher levels of responsibility in the classroom as they prepare for the 21<sup>st</sup> century workforce in our society (K12 Thoughtful learning, 2017). In traditional educational settings, diverse students were often not afforded a chance to develop self-confidence and other personal attributes such as metacognition/self-reflection; planning and organization skills; time management skills; leadership skills; assuming a higher level of responsibility in their classroom; and extensive social interaction with their peers.

A peer-teaching instructional approach allowed students to develop relationships with their peers and collaborate with students of different racial backgrounds on a level "playing field." Peer-teaching was inclusive and delivered a broader appeal to diverse students because they shared their knowledge without fear of intimidation or ridicule from their peers. Students felt a sense of accomplishment by sharing their gained knowledge with their peers and raised their self-confidence and motivation to improve learning content (Bruno et al., 2016). Many students were unable to learn in traditional settings, but gained self-confidence and developed creativity in a peer-teaching

environment (Zhanova et al., 2013). The theoretical framework for this study was based on Piaget's Theory of Cognitive Development and Vygotsky's Sociocultural Theory; and the process of peer influence and how we think and learn in our environment. The peer-learning experience was influenced by social transmission or learning from others. Likewise, peer-teaching was a social process in which students interacted, negotiated, planned, prepared and presented subject content to their peers in the classroom and younger students at the elementary school (Woolfolk, 2008). Using a peer-teaching instructional strategy in my classroom for several years, I was convinced that this approach had a positive impact on a student's self-confidence.

To confirm the body of existing literature on peer-teaching (construct) that supported my research question, I developed three measures (instruments) to study and examine the trends and patterns that answered my research question: survey, questionnaire, and interview. This included other pertinent data (observation, focus group sessions, and artifacts) that added to the overwhelming evidence that a peer-teaching instructional strategy positively impacted a student's self-confidence. Sixteen JROTC students participated in a semester long study. A triangulation mixed method design was used to collect and analyze quantitative and qualitative data, using multiple methods and sources to enhance the validity of the findings (Glesne, 2006). To cut down the amount of qualitative data to be analyzed, I used an inductive analysis by organizing the data into a system of a coding scheme (Table 4.1) along with a short description of each code. I accomplished this by searching for words or phrases that begin to repeat themselves from the data analyzed (Mills, 2011). Numerical data reported in descending order from greatest to least on the quantitative measure (survey) was easier to understand and find

dominant descriptions of patterns and trends. Using quantitative and qualitative data permitted me to treat the combined strengths of each form of data equally, so they could be merged into similar trends and patterns as displayed in Table 4.6, Emerging Trends and Patterns (Mertler, 2017).

The evidence of validity for the quantitative measure used in this study was based on identifying individual affirmative responses noted in the survey. This included evidence, from an examination of the relationships among responses appearing on the survey and other measures, and finding the underlying characteristics it intended to measure, self-confidence. In order to know if the survey measured what it was intended to measure, the content of the survey was designed to address the peer-teaching experience and accurately answer the research question. There was a high degree of reliability with the survey because there was consistency in the affirmative responses noted by the findings (Mertler & Charles, 2011; Mertler, 2016). The qualitative data used in this study were credible because the students provided their honest perspectives using multiple measures through triangulation. The data analyzed was easy for someone to identify with the findings, with a clear and in depth understanding of the impact it had on the research setting. Thus, the validity of the data analyzed was accurate and believable.

Self-confidence was the dominant trend that emerged based on the data analysis; based on what the students learned through a peer-teaching setting: (a) the teacher-researcher taught them to teach using a four-phase lesson plan format; (b) students planned and prepared to teach lessons with their peers; (c) students presented the lesson to peers and younger children at an elementary school; and (d) students continued to get feedback from their peers and teacher throughout the study. This experience gave them a

higher sense of responsibility to learning in the classroom. In order to organize the findings into meaningful results and answer the research question, the data analyzed was coded as shown in Table 4.1, based on repeated similarities from each measure and other pertinent data. Tables 4.2-4.5 provided a display of the findings by the students. Table 4.6 organized the dominant patterns and trends prevalent in this study. This table clearly showed dominant patterns that emerged using all measures and other data. The goal of the analysis and findings was to have a clear and in-depth understanding of a particular setting (Mertler, 2017).

### **Results Related to Existing Literature**

The findings revealed the similarity of patterns and trends linked to the existing literature in Chapter 2. The plethora of consistent research to support and answer the research question manifested itself in all levels of education: elementary school level, (Hyun, 2005; Banduri, 2017; Halves & Mitya, 2014; Morrison, 2004); middle school level, (Lazerson et al., 1988; Topping & Bryce, 2004; Robb, 2014; Webb, 2002); high school level, (Scruggs et al., 2012; Karcher, 2009; Abrami, et al., 2004); and higher education, (Rawlinson & Willimott, 2016; Chang & Walters, 2009; Lockie, & Van Lanen, 2008). The findings of the action research study of JROTC high school student-participants in a natural setting tells a story of the peer-teaching experience. Cohen & Sampson (2001) explained:

When students value learning principles they usually describe them as challenging, creative, exciting, and supportive. They are often surprised how much they learn about themselves, their beliefs and attitudes, as well as subject content. When the peer-teaching activity is designed so that the guidelines are

clear, the purpose of the instructional approach relates to student's needs, the practice is linked appropriately to the assessment process and the learning outcomes, and students are prepared for the experience, students can benefit from the positive features of peer-learning. (p. 22-23)

The findings of peer-teaching are aligned to the existing literature. The literature noted in this study specifically included an examination of peer-teaching on academic improvement, leadership development, meta-cognition, behavior modification, cognitive processes, literacy, technology, self-esteem, self-efficacy, school wide peer-teaching programs, and social justice perspectives. Although the research literature in peer-teaching did not specifically measure "self-confidence," their findings revealed a direct or an indirect link to the positive impact, peer-teaching had on a student's "self-confidence" (Hyan, 2005; Morrison, 2004; Rawlinson & Willimott, 2016; Lockie & Van Lanen, 2008; Miller, et al., 2010). What emerged out of the findings was a strong impression that the patterns or trends described in Table 4.6 (Emerging Trends and Patterns) favored a positive impact on a student's self-confidence based on the tasks given to them. Students' self-confidence improved through a continuous peer-teaching experience. This study confirms the exiting literature and knowledge base in the field of peer-learning.

### **Practice in the Classroom**

As noted by Cohen and Sampson (2001), the design and the implementation of peer-teaching as an instructional approach to a student's self-confidence was a critical part of answering the research question. I considered the context of how peer-teaching was going to be introduced focusing on goals and objectives, learning outcomes, making sure assessments were congruent to the peer-teaching strategy, using the resources to



implement the strategy, preparing the students to take on a new approach to learning subject content; and making sure the students understood their roles and responsibilities Cohen and Sampson added that feedback to the students was consistent using oral and written assessments. All students were given an opportunity to express their feelings and thoughts during the group sessions; including feedback from their peers.

Using the works of Jean Piaget and Lev Vygotsky (Woolfolk, 2008), which informed the theoretical framework for this study, the power of social interaction played a critical role in the findings. Students worked together and felt a sense of ownership in learning subject content and presenting lessons to their peers. Students learned from each other. Peer-teaching provided equal access to all the students “When learners communicate with a truly equal peer, a feeling of cooperation emerges, forming a foundation for significant, retained learning emerges and forms a foundation for significant learning” (Velez et al., 2011, p. 41; De Lisi, 2002). When implemented, the peer-teaching experience was aligned to progressivism, a theory of curriculum that “subordinates’ subject matter to the learner” (Oliva, 2009, p. 162) and social efficiency curriculum; stating objectives in behavioral terms such as observable skills, demonstrating things people can do and meeting the needs of society. Students performed in a social interacting setting. They learned when they actively experienced their environment as opposed to sitting quietly in class and absorbing subject content (Schiro, 2017). The peer-learning experience was not a memorization of written and verbal statements of facts, it was a connection between others and actual life situations (Bobbitt, 2017). Progressivists care about students, their community, subject matter, and put the student center of the learning process. Thus, progressivism and social efficiency

curriculum theories formed the instructional strategic framework of this study as opposed to the traditional curriculum of essentialism; “assign-study-recite-test” (Oliva, 2009, p. 160).

### **Role of Curriculum and Peer-Teaching**

Equally important to peer-teaching as an instructional approach to improve a student’s self-confidence was the implications of curriculum leadership of the classroom teacher and the effects it had on learning. Jefferies (2000) explains:

Instructional leadership can be viewed as functional and or a process approach. The functional approach defines school mission, managing curriculum and instruction, supervising teaching, monitoring student progress and promotes an instructional climate. The process approach looks at ways this might be accomplished. (p. 134)

As a curriculum leader in a classroom, I was concerned about the way the curriculum was delivered to students rather than the achievement of the task or the product. I was concerned about different layers of curriculum: how it was planned, taught, learned, and assessed by the teacher-researcher. A peer-teaching strategy, integrated curriculum beyond one subject. “Students were expected to make connections among subject areas, rather than teachers having taught them explicitly” (Drake, 2012, p. 16). In other words, like project-based learning (Markham, 2012), students worked together, planned, prepared, and presented lessons to their peers. Formative and summative assessments (rubrics) were included in the peer-teaching experience that evaluated student knowledge of the

subject matter, planning and preparation of the lesson, social collaboration between students and the presentation skills.

As a teacher-researcher, I investigated the “hidden” curriculum that the students learned based on the content being taught in the classroom; an implicit and unintended learning that may occur (Jefferies, 2000). In other words, what the students learned from the peer-teaching experience expanded beyond the mastery of subject content, as noted in Table 4.6, Emerging Patterns and Trends. Students learned beyond a traditional lesson plan format where the teacher had control of student learning doing most of the talking with question and answers, usually occurring at the end of the lesson. A peer-teaching instructional approach in the classroom afforded students the opportunity to engage in their own learning, rather than being told what to do (Lieberman & Miller, 2005). In this environment, I was a coach, mentor, and facilitator, monitoring their progress and assessing their performance continuously. The existing literature confirmed this instructional approach promoting an optimal learning experience in other school subjects such as math, physics, art, music, and computer technology (Baiduri, 2017; Korner & Hopf, 2015; Workman & Vaughan, 2017; Darrow, et al., 2005; Hun, 2005).

### **Practice Recommendation**

Placing our students in a position to teach their peers can be stressful and at times overwhelming. Peer-teaching takes students out of their comfort zone and gives them a higher sense of responsibility. The teacher must prepare them and

ensure they find success in their new roles. Doyle (2008) explains the rationale for peer-teaching:

Although our students have watched teachers for thousands of hours, they have little familiarity with the planning and delivery processes of teaching. If teaching others is to be a meaningful learning experience, we must do an effective job of teaching our students how to teach. ... When we ask our students to teach, we place them in a learning situation that requires that the one doing the teaching thoroughly understands the knowledge or skill set being taught. Having students teach one another promotes deep learning...Students will gain an increased appreciation of the effort and skills required for effective teaching. (p. 107)

In order for the peer-teaching strategy to work effectively and improve a student's self-confidence, the teacher must establish goals, objectives, procedures, rules in the classroom, expectations, and roles and responsibilities of students and teacher (Cohen & Sampson, 2001). Students must know why this approach is necessary. What are the benefits of peer-teaching? Is this strategy relevant to the tool's students will need for the 21<sup>st</sup> Century workforce? The layout of peer-teaching must be organized and structured to accommodate social collaboration in a cooperative learning environment, and an openness to respect the opinions, thoughts and ideas of fellow classmates. Students must be given ample time to socially interact and the freedom to plan, prepare, and present their lessons (Griffin & Griffin, 1998). The teacher must give clear and understandable direction and guidance before, during, and after the peer-teaching experience.

Feedback from their peers is encouraged and aids in the success of a student's self-confidence. In short, the teacher must prepare for the peer-learning experience (their knowledge of peer-teaching), provide a rationale for implementing this instructional approach, develop guidelines for students (preconditions for fostering peer-learning), orient them to peer-teaching, coach students as they practice their presentations, state learning outcomes and assess their peer-learning experience. (Cohen & Sampson, 2001).

### **Action Plan for Future Cycles of Action Research**

Based on the findings and the success that students enjoyed during this action research study, peer-teaching as an instructional approach in JROTC is a good strategy to improve a student's self-confidence. The rationale for having students teach each other was appropriate because the JROTC curriculum included the opportunities to peer-teach, gain leadership positions in the Cadet Corps and take on more responsibilities beyond the role of a student. Peer-teaching and leadership training are familiar practices prevalent in the JROTC curriculum.

Based on the feedback from students, reflecting on student work such as formative and summative student assessment rubrics, observations of peer-learning activities, and other student work, I would dedicate more time teaching the "teaching skills" lessons and preparing the students to teach their peers. There are several JROTC lessons that could be beneficial for the students. I would change student assessments from item-response assessments to team building group assessments such as practical exercises, role playing, brainstorming, and case studies (U. S. Army JROTC, 2005). They would present their group work tasks to their classmates. Changing the assessment

procedures would give the students more practice and time for collaboration and interaction with their peers before they begin the peer-teaching experience.

Secondly, as the students are planning and preparing their lessons, I would take the time to teach students additional lessons that are relevant to peer-teaching such as: Communication in Groups, Becoming a Better Speaker, Time Management, Becoming an Active Learner, Leadership from the Inside Out, Team Development, Project Management, Decision Making and Problem Solving, Management Skills and Motivation (U. S. Army JROTC, 2002; U. S. Army JROTC, 2005). This will give the students a better understanding of the peer-teaching approach and minimize a fear of presenting content to their peers. Lastly, the students should be given more time to develop their lesson plans by collaborating with their classmates and practicing their presentations.

### **Limitations of the Study**

This action research study revealed several limitations. The students were not given enough time to plan, prepare, and teach JROTC lessons. Due to time constraints and unforeseen events going on at the elementary school, students were unable to complete teaching some mini-lessons on the global economy. During data collection, the teacher-researcher administered interviews in the classroom because the teacher was unable to leave the classroom to conduct interviews. As a result, students gave short answers and appeared distracted by their peers in the classroom. While insider research by the researcher provided specific insight to data analysis and knowledge of the students and their background, it may have created a bias because the teacher was the researcher (Tewksbury & Gagne, 1997).

Student-participants completed all measures over a short period, as opposed to a longitudinal study. A snapshot in time can present some doubt as to the validity of the findings of this study. Although the measures were validated and reliable, there is some question about the accuracy of the measures. The “principle of compatibility” addresses the measures used in research (Ajzen, 2012; Eagly & Chaiken, 1993). “Any individual-level measure is likely to successfully predict responses that are in the same content domain as the measure” (Wood, & Eagly, 2015, p. 466). This is especially true when predicting behaviors and attitudes. Lastly, this study targeted a small sample of 16 sixteen students in the JROTC program. Students outside the JROTC program did not participate in this study.

### **Reflection**

This study of the peer-teaching experience in a JROTC classroom contributed to the existing literature and the field of research and answered the research question. Students improved their self-confidence as indicated in the findings. Through daily observations and examining students' work, I witnessed a remarkable process of student collaboration, social interaction, sharing of ideas, problem-solving, embracing a higher sense of responsibility, enthusiasm, excitement, creativity, self-reflection and having fun. Students were learning content because they knew they were teaching their peers and felt a sense of ownership in their own learning. Over the course of a school semester, you can see students believing in themselves to accomplish goals and tasks required in the peer-teaching experience. Self-efficacy was the outcome of what came out of their experiences (Cherry, 2018; Bandura, 1997).

As a JROTC teacher, the peer-teaching instructional strategy has been rewarding for so many students that enrolled and graduated from Great Falls High School JROTC program. Peer-teaching as an instructional approach to learning was intertwined into the fabric of the JROTC curriculum learning outcomes that included leading other students in marching precision, physical fitness skills, team projects, planning school-wide activities and conducting community service. Student collaboration and social interaction are prevalent in the JROTC world.

Having answered the research question in this study, I hope to make stated improvements in the action plan and share the results with my colleagues in a school-wide professional development program that could change the culture of the school setting. Sharing this plan with my colleagues might inspire them to engage in this instructional approach. Sharing this plan would involve a self-reflection of their practice, provide teachers with research-based studies on peer-teaching, demonstrate peer-teaching in the classroom and give them an opportunity to observe a peer-teaching environment. Using professional development could give other teachers a voice of what is really happening in the classroom and narrow the gap between theory/research and actual practice (Mertler, 2013). The outcome of this study will provide the academic school, community, stakeholders and educational scholars a proven research-based strategy that enhances learning in a diverse classroom and brings about change in the classroom and in a school wide-setting.

### **Conclusion**

A peer-teaching instructional approach in a JROTC classroom was studied in this action research endeavor. Using triangulation, a mixed method design, to validate data



through cross verification from measures and student artifacts, peer-teaching had a positive impact on a student's self-confidence and answered the research question. The existing literature confirmed the findings of this study. Self-confidence was the dominant trend that emerged based on the peer-teaching strategy setting established by the teacher-researcher. Jean Piaget and Lev Vygotsky (Woolfolk, 2008) provided the theoretical framework for this study; the power of social interaction played a critical role in the findings of this study. The peer-teaching experience followed two theories of curriculum: progressivism and social efficiency: the focus of learning was based on needs of the students and their environment and to a lesser extent subject content; and establishing learning objectives and learning outcomes based on their behavior and demonstrating student observable skills in a social interacting setting. The peer-teaching instructional approach integrated curriculum beyond one subject. Students learned other core curriculum as they progressed through planning, preparing and presenting their lesson; similar to project based learning (Markham, 2012). The findings also revealed implicit and unintended learning that occurred as noted in Table 4.6, Emerging Patterns and Trends (Jeffries, 2000). Students were given the opportunity to engage in their own learning, rather than being told what to do (Lieberman & Miller, 2005).

In practice today, teachers must establish goals and objectives, procedures, rules in the classroom, and roles and responsibilities of both teacher and student when using a peer-teaching instructional approach to learning. Students must understand that they are not only learning JROTC content but developing and improving 21<sup>st</sup> century workforce skills (K12 Thoughtful learning, 2017). Developing work skills using a peer-teaching approach fits the profile of a South Carolina graduate: creativity and innovation, critical

thinking and problem solving, collaboration and teamwork, communication, information, media technology and knowing how to learn (South Carolina Department of Education, 2018).

Based on the findings, an action plan for the next cycle of action research includes spending more time with students, guiding them through the peer-teaching experience, and teaching lessons that will aid their ability to peer-teach effectively, beyond learning content. Students will be given more time to collaborate with their peers and practice their presentations and minimize their fear of public speaking. Limitations of the action researcher included researcher bias because the teacher was the researcher and vulnerable to sub-consciously manipulating the study; and a small targeted sample of JROTC cadets studied over a short period of time. A successful instructional strategy, peer-teaching can make a difference in a student's self-confidence and needs to be shared with my colleagues in a school-wide professional development program. Its proven success provides our academic community, and stakeholders a proven classroom strategy that will bring about change in a school setting.

## REFERENCES

- Abdul Raheem, Y., Yusuf, H. T., & Odutayo, A. O. (2017). Effect of peer tutoring on student' academic performance in economics in Ilorin south, Nigeria. *Journal of Peer-learning, 10*(1), 95-102.
- Abrami, P. C., Poulsen, C., & Chambers, B. (2004). Teacher motivation to implement an educational innovation: Factors differentiating users and non-users of cooperative learning. *Educational Psychology, 24*(2), 201-216.
- Ajzen, I. (2012). Values, attitudes, and behaviors. In Salzborn, E. Davidov, & J. Reinecke (Eds.), *Methods. Theories, and empirical applications in the social sciences* (pp. 33-38).
- Armstrong, J. (2010, June). Encyclopedia of research design: Naturalistic inquiry. Retrieved October 1, 2018, from [https://www.researchgate.net/publication/256294652\\_Naturalistic\\_Inquiry](https://www.researchgate.net/publication/256294652_Naturalistic_Inquiry)
- Baiduri. (2017). Elementary school students' spoken activities and their responses in math learning by peer tutoring. *International Journal of Instruction, 10*(2), 145-160.
- Bandura, A. (1997). *The exercise of control*. New York: WH Freeman.
- Bell, S. (2010). Project based learning for the 21<sup>st</sup> century: Skills for the future. *The Clearing House, 83*, 39-43. doi:10.1080/00098650903505415.
- Best, L. (2012). *K-5 Teachers' Attitudes and Beliefs on Changing Grade Level Assignments* (Doctoral dissertation).

- Bobbitt, F. (2017). Scientific method in curriculum-making. In Flinders, D., J., & Thornton, S., J. (Eds.). *The curriculum studies reader*. New York, NY: Routledge.
- Bonner, S. M., Somers, J. A., Rivera, G. J., & Keiler, L. S. (2017). Effects of student-facilitated learning on instructional facilitators. *Instructional Science*, *45*, 417-438.
- Boud, D. (2001). Making the move to peer-learning. In Boud, D., Cohen, R., & Sampson J. (Eds.) (2001). *Peer-learning in higher education: Learning from and with each other* (pp 1-20). London: Routledge.
- Brady, M. P., Hall, K., & Bielakus, K. (2016). Literacy-based behavioral intervention delivered by peers: A teaching strategy for students with severe disabilities. *Educational Psychology in Practice*, *32*(4), 424-434.
- Bruno, P. A., Love, Green, J. K., Illerbrun, S. L., Holness, D. A., Illerbrun, S. J., Haus, K. A., & Sveinson, K. L. (2016). Students helping students: Evaluating a pilot program of peer-teaching for an undergraduate course in human anatomy. *Anatomical sciences education*, *9*(2), 132-142. doi: 10.1002/ase.1543.
- Carbone, A., Ross, B., Phelan, L., Lindsey, K., Drew, S., Stoney, S., & Cottman, C. (2015). Course evaluation matters: Improving student's learning experiences with a peer-assisted teaching program. *Assessment & Evaluation in Higher Education*, *40*(2), 165-180.
- Cohen, R., & Sampson J. (2001). Designing peer-teaching. In Boud, D., Cohen, R., & Sampson J. (Eds.) (2001). *Peer-learning in higher education: Learning from and with each other* (pp 22-23). London: Routledge.

- Cherry, K. (2018, August 8). Self-Efficacy: Why Believing in Yourself Matters.  
Retrieved August 24, 2018, from <https://www.verywellmind.com/what-is-self-efficacy-2795954>
- Chang, D., & Walters, W. (2009). Peer-assisted learning in mathematics: An observational study of student success. *Journal of Peer-learning*, 2(3), 23-39.
- Darrow, A., Gibbs, P., & Wedel, S. (2005). Use of class wide peer tutoring in the general music classroom. *Applications of Research in Music Education*, 24(1) 15-26.
- Dana, N., & Yendol-Hoppey, D. (2014). *The reflective: Educators guide to classroom research* (3<sup>rd</sup> ed.). Thousand Oaks, CA: Corwin.
- De Lisi, R. (2002). From marbles to instant messenger: Implications of Piaget's ideas about peer-learning. *Theory into practice*, 41(1), 5-12.
- Dewey, J. (1902). *The child and the curriculum*. Chicago: University of Chicago Press (pp. 7-14).
- Dewey, J. (1938). *Experience and education*. New York: The McMillan Company.
- Dewey, J. (2017). My pedagogic creed. In Flinders, D. J., & Thornton, S. J. (Eds.). *The curriculum studies reader*, (pp. 32-40). New York, NY: Routledge.
- Dictionary.com (2017). Retrieved January 11, 2017. from <https://www.dictionary.com/browse/self-confidence>
- Doubet, K. J., & Hockett, J. A. (2015). *Differentiation in middle & high school: Strategies to engage all learners*. Alexandria, VA: ASCD.
- Doyle, T. (2008). *Helping students learn in a learner-centered environment*. Sterling, Virginia: Stylus.

- Drake, S. (2012). *Creating standards-based integrated curriculum* (3<sup>rd</sup> Ed). Thousand Oaks, CA: Corwin.
- Dudly-Marling, C., & Gurn, A. (2010). *The myth of a normal curve*. New York: Peter Lang.
- Dwyer, F. (2010) Edgar Dale's Cone of experience: a quasi-experimental analysis. *International Journal of Instructional Media*, 37(4) p. 431.
- Education.com (2006). Retrieved January 8, 2017, from <http://www.education.com/reference/article/self-regulation-development-skill/>.
- Eagly, A. H., & Chaiken, S. (1993). *The psychology of attitudes*. Orlando: Harcourt Brace Jovanovich.
- Flinders, D. J., & Thornton, S. J. (Eds.). (2017). *The curriculum studies reader*. New York, NY: Psychology Press.
- Flores, M., & Duran, D. (2013) Effects of peer tutoring on reading self-concept. *International Journal of Education Psychology*, 2(3), 297-324.
- Ginsburg-Block, M. D., Rohrbeck, C. A., & Fantuzzo, J. W. (2006). A meta-analytic review of social, self-concept, and behavioral outcomes of peer-assisted learning. *Journal of Educational Psychology*, 98(4), 732-749.
- Glesne, C. (2011). *Becoming qualitative researchers: An introduction* (4<sup>th</sup> ed.). Boston, MA: Pearson Education, Inc.
- Glesne, C. (2006). *Becoming qualitative researchers: An intriducton* (3<sup>rd</sup> ed.) New York: Longman.
- Greenwood, C. R., Arreaga-Mayer, C., Utley, C. A., Gavin, K. M., & Terry, B., J (2001). *Class wide peer tutoring learning management system: Applications with*

- elementary-level English language learners. *Remedial and Special Education*, 22(1), 34-47.
- Griffin, M. M., & Griffin, B. W. (1995). An Investigation of the Effects of Reciprocal Peer Tutoring on Achievement, *Presented at the Annual Meeting of the National Consortium for Instruction and Cognition*, San Francisco, CA, April 18-22. Georgia Southern University: EDRS.
- Gregory, G., & Chapman, C. (2007). *Differentiated instructional strategies: One size doesn't fit all* (2<sup>nd</sup> ed.). Thousand Oaks, CA: Corwin.
- Gumpel, T. P., & Frank, R. (1999). An expansion of the peer-tutoring paradigm: Cross-age peer tutoring of social skills among socially rejected boys. *Journal of Applied Behavior Analysis*, 32, 115-118.
- Halves, T., & Mitya, S. (2014, January 9). The child as an empty vessel: A deference of emptiness in education. Retrieved October 5, 2017 from <http://www.digitalcounterrevolution.co.uk/2014/child-empty-vessel-education>.
- Harris, K., & Meltzer, L. (Eds.) (2015). *The power of peers in the classroom*. New York: The Guilford Press.
- Hartup, W. (2009). Critical issues and theoretical viewpoints. In Rubin, K., Bukowski, W., & Laursen B. (Eds.). *Handbook of peer interactions, relationships, and groups* (pp. 3-19). New York, NY: Guilford Press.
- Hawkes, M. (2007). Reflective outcomes of convergent and divergent group tasking in the online learning environment. *The Quarterly Review of Distance Learning*, 8(2), 95-107.

- Hyun, E. (2005). A study of 5-to 6-year old children's peer dynamics and dialectical learning in a computer-based technology-rich classroom environment. *Computers & Education, 44*(1), 69-91.
- Jacobs, G., Hurley, M., & Unite C. (2008). How learning theory creates a foundation for SI leader training. *Journal of Peer-learning, 1*(3), 6-12.
- Jefferies, S. (2000). *A literature review exploring a meaning for the term "curriculum leadership,"* Waikato Journal of Education, 6, 133-141.
- Johnson, A. P. (2008). *A short guide to action research* (3<sup>rd</sup> ed.). Boston: Allyn & Bacon.
- Johnson, E., Robbins, B., & Loui, M. (2015). What do students experience as peer leaders of learning teams? *Advances in Engineering Education, 4*(4), n4.
- Johnson, E. (2015). peer-teaching in the secondary music ensemble. *Journal of Education and Training Studies, 3*(5), 35-42. doi: 10.11114/jets.v3i5.906.
- Kamerade, D. (2011). Group role-play as a method of facilitating student to student interaction and making theory relevant. *Practice and Evidence of the Scholarship of Teaching 6*(2), 1-16.
- Karcher, M. (2008). The cross-age mentoring program: A developmental intervention for promoting students' connectedness across grade levels. *Professional School Counseling. 12*(2), 137-143.
- Kieran, P., & O'Neill, G. (2009). Peer-assisted tutoring in a chemical engineering curriculum: Tutee and tutor experiences. *Journal of Peer-learning, (2)*1, 40-47.
- Korner, M., & Hopf, M.(2015). Cross-age peer tutoring in physics: Tutors, tutees, and achievement in electricity. *International Journal of Science and Mathematics Education, 13*(5) 1039-1063.



- Knust, G. A. (2015, December 1). Research Instruments for Data Collection. Retrieved January 26, 2017, from [http://www.academia.edu/11695245/RESEARCH\\_INSTRUMENT\\_FOR\\_DATA\\_COLLECTION](http://www.academia.edu/11695245/RESEARCH_INSTRUMENT_FOR_DATA_COLLECTION).
- Krajcik, J., & Blumenfeld, P. (2006). Project Based Learning. Retrieved February 1, 2017 from [https://scholar.google.com/scholar?q=project-based learning krajcik&hl=en&as\\_sdt=0&as\\_vis=1&oi=scholart&sa=X&ved=0ahUKEwi579vQy\\_7RAhWBJiYKHTseDBwQgQMIGDAA&surl=1&safe=active](https://scholar.google.com/scholar?q=project-based+learning+krajcik&hl=en&as_sdt=0&as_vis=1&oi=scholart&sa=X&ved=0ahUKEwi579vQy_7RAhWBJiYKHTseDBwQgQMIGDAA&surl=1&safe=active).
- Krych, A. J., March, C. N., Ross, E. B., Peake, B. J., Pawlina, W., & Carmichael, S. W. (2005). Reciprocal peer-teaching: Students teaching students in the gross anatomy laboratory. *Medical Education, 18*, 296-301.
- Layton, D., & Lee, R. (November 11, 2014). Divergent Learners, Understand, Address, and Succeed. Retrieved on January 28, 2017 from <http://seenmagazine.us/Articles/Article-Detail/articleid/4389/divergent-learners>.
- Lazerson, D. B., Foster, H. L., Brown, S. I., & Hummel, J. W. (1988). The effectiveness of cross-age tutoring with truant, junior high school students with learning disabilities, *Journal of Learning Disabilities, 21*(4), 253-255.
- Lieberman, A., & Miller, L. (2005). Teachers as leaders. *In The Educational Forum, 69* (2), 151-162. Taylor & Francis Group.
- Lockie, N. M., & Van Lanen, R. J. (2008). Impact of the supplemental instruction experience on science SI leaders. *Journal of Developmental Education, 31*(3), 2-15.

- Machi, L. A., & McEvoy, B. T. (2016). *The literature review: Six steps to success*. Thousand Oaks, CA: Corwin.
- Markham, T. (2012). *Project based learning: Design and coaching guide*. San Rafael, CA: Wilsted & Taylor Publishing.
- Mattatall, C., A. (2017). Using assisted learning strategies for boys, aboriginal learners and at-risk populations. *Reading & Writing Quarterly*, 33(2), 155-170.
- McKibben, J. (April, 2018). Populations and Enrollment Forecasts [Demographic Study]. Retrieved from <http://www.chester.k12.sc.us>
- Meltzer, L., Greschler, M., Kurkul, K., & Stacey, W. (2015). Executive function and peer mentoring. In Harris, K., R., & Meltzer, L. (Eds.). *The power of peers in the classroom: Enhancing learning and the social skills* (pp. 1-32). New York: Guilford Press.
- Merriam, S., B. (1992). *Qualitative research and case study applications in education*. San Francisco, CA: The Jossey-Bass Education Series.
- Mertler, C., A. (2017). *Action Research: Improving school and empowering educators*. (5th ed.). Thousand Oaks, CA: Sage.
- Mertler, C. A., & Charles, C. M. (2011). *Introduction to educational research* (7<sup>th</sup> ed.). Boston: Allyn & Bacon.
- Mertler, C. A. (2016). *Introduction to educational research*. Los Angeles, CA: Sage.
- Miller, D., Topping, K., & Thurston, A. (2010). Peer tutoring in reading: The effects of role and organization on two dimensions of self-esteem. *British Journal of Educational Psychology*, 80, 417-433.

- Mills, G. (2014) *Action research: A guide for the teacher researcher* (5<sup>th</sup> Edition). Upper Saddle River, NJ: Pearson Education Company.
- Morrison, M. (2004). Risk and responsibility: The potential of peer-teaching to address negative leadership. *Improving Schools*, 7(3), 217-226. doi: 10.1177/1365480204048927.
- Nawaz, A., & Rehman, Z. U. (2017). Strategy of peer tutoring and students' success in mathematics: An Analysis. *Journal of Research and Reflection in Education*. 11(1), 15-30.
- Nieto, S. (2013). *Finding joy in teaching students of diverse backgrounds: Culturally responsive and socially just practices in U. S. classrooms*. Portsmouth, New Hampshire: Heinemann.
- Novak, M., & Hopf, M. (2015). Cross-age peer tutoring in physics: Tutors, tutees, and achievement in electricity. *International Journal of Science and Mathematics Education*, 13(5), 1039-1063. doi: 10.1007/s10763-014-9539-8.
- Novak, J. D. (1998). *Learning, creating, and using knowledge: Concept maps as facilitative tools in schools and corporations*. Mahwah, NJ: Erlbaum.
- Oliva, P., F. (2009). *Developing the curriculum*. (7th ed.). Boston, MA: Pearson.
- Parsons, R. D., & Brown, K. S. (2002). *Teacher as a reflective practitioner and action researcher*. Belmont, CA: Wadsworth/Thomson Learning.
- Patton, M. (1980). *Qualitative evaluation methods*. New York, NY: Sage Publications.
- Piaget, J. (1926). *The language and thought of the child*. New York, NY: Harcourt Brace.
- Piaget, J. (1932). *The moral judgment of the child*. Glencoe, IL: Free Press.

- Price, H. (2008). About-face: Reshaping high schools. *Educational Leadership*, 65(8) 28-34.
- Rawlinson, C., & Willimott, M. (2016). Social justice, learning centeredness and first year experience peer mentoring program: How might they connect? *Journal of Peer-learning*, 9(1), 41-48.
- Reading A-Z (2017). Retrieved December 10, 2017, from [www.readinga-z.com/fluency](http://www.readinga-z.com/fluency).
- Reyes, R., & Villarreal, E. (2016). Wanting the unwanted again: Safeguarding against normalizing dehumanization and discardability of marginalized, “unruly” English-learning Latinos in our schools. *The Urban Review*, 48(4), 543-559. doi: 10.1007/s11256-016-0367-8.
- Robb, E., Sinatra, R., & Eschenauer, R. (2013). Vocabulary theatre: A peer-teaching approach for academic vocabulary acquisition. *Journal of Education and Training Studies*, 2(1), 117-126. doi: 1011114/jets.v2il.247.
- Roscoe, R. D., & Chi, M. T. (2007). Understanding tutor learning: Knowledge-building and knowledge-telling in peer tutors’ explanations and questions. *Review of Educational Research*, 77(4), 534-574.
- Schiro, M. (2017). *Curriculum theory: Conflicting visions and enduring concerns*. Boston: Sage Publications.
- Schramm-Pate, Susan. (2016). “Lecture: Basic Theories of Curriculum Instruction.” Retrieved from <https://blackboard.sc.edu/bbcswebdav/courses/EDCS725-J50-FALL-2016/EDCS725-J50-FALL>.

Schramm-Pate, Susan. (2016). "Lecture: Integrated Models of Curriculum Construction."

Retrieved from <https://blackboard.sc.edu/bbcswebdav/courses/EDCS725-J50-FALL-2016/EDCS725-J50-FALL>.

Schwarz, B., Neuman, Y., & Biezuner, S. (2000). Two wrongs make a right.... if they argue together! *Cognition and Instruction*, 19, 461-494.

Scruggs, T., Marshak, E., & Mastropieri, M. A. (2012). Peer-mediated instruction in inclusion secondary social studies learning: Direct and indirect learning effects. *Learning Disabilities Research & Practitioner*, 27(1), 12-20.

Sensory, O., & Deangelo, R. (2012). *Is everyone really equal?* Teachers College Press: New York.

Skalicky, J., & Caney, A. (2010). PASS student leader and mentor roles: A tertiary leadership pathway. *Journal of Peer-learning*, 3(1), 24-37.

South Carolina Department of Education. (2017). Retrieved January 11, 2018, from <http://ed.sc.gov/data/report-cards/state-report-cards/2017/outcomes>.

South Carolina Department of Education. (2018). Retrieved November 9, 2018 from <https://www.ed.sc.gov/newsroom/profile-of-the-south-carolina-graduate/>.

Sporer, N., Burnstein, J., & Joachim, C. (2009). Fostering the reading comprehension of secondary school students through peer-assisted learning: Effects on strategy knowledge, strategy use, and task performance. *Contemporary Educational Psychology*, 34, 289-297. doi: 10.1016/j.cedpsych.2009.06.004

Standardized Tests and Their Impact on Schooling. (February 16, 2006). Retrieved February 13, 2017, from <http://www.centerforpubliceducation.org/Main-Menu/Instruction/High-stakes-testing-and-effects-on-instruction-At-a-glance>.

- Schwalbach, E., M. (2003). *Value in validity in action research: A guidebook for reflective practitioners*. Lanham, MD: Scarecrow Press.
- Tewksbury, R., & Gagne, P. (1997). Assumed and presumed identities: Problems of self-presentation in field research. *Sociological Spectrum*, 17(2), 127-146.
- The Center for Public Education (2018) Retrieved January 13, 2018, from <http://www.centerforpubliceducation.org/Main-Menu/Policies/21st-Century/Defining-a-21st-Century-Education-Full-report-PDF.pdf>
- Thomas, A., S., Bonner, S. M., Everson, H. T., & Somers, J. A. (2015). Leveraging the power of peer-led learning: The investigation effects on STEM performance in urban high schools. *Educational Research and Evaluation*, 21(7-8), 537-557.
- Topping, K. J. (2005). Trends in peer-learning. *Educational Psychology*, 25(6), 631-645. doi: 10.1080/01443410500345172.
- Topping, K. J., & Bryce, A. (2004). Cross-age peer tutoring of reading and thinking: Influence on thinking skills. *Educational Psychology*, 24(5), 595-621.
- U.S. Army JROTC (2002). *Leadership defined. Citizenship in action and leadership theory and application* (pp. 196-201). Upper Saddle, New Jersey: Pearson Education Company.
- U.S. Army JROTC (2005). *Foundations for success. Using variety in your lesson plans* (pp. 415-421). Upper Saddle, New Jersey: Pearson Education Company.
- U.S. Army JROTC. (2016). Retrieved January 7, 2017, from <http://www.usarmyjrotc.com/jrotc-program/jrotc-program-information>.
- U. S. News and World Report. (2018, January 11). News, Rankings and Analysis on Politics, Education, Healthcare and More. Retrieved January 11, 2018, from

<http://www.usnews.com/education/best-high-schools/south-carolina/districts/chester-01/great-falls-high-17583>.

Velez, J., Cano J., Whittington, S., & Wolf, K. (2011). Cultivating change through peer-teaching. *Journal of Agricultural Education*, 52(1), 40-49. doi: 10.5032/jae.2011.01040.

Vorster, J. (1999). The process of learning and teaching in supplemental instruction groups at Rhodes University. Unpublished MA thesis, Rhodes University, South Africa.

Vygotsky, L.S. (1978). *Mind in society*. Cambridge, MA: MIT Press.

Wang, S., Hou, H., & Wu, S. (2017). Analyzing the knowledge construction and cognitive patterns of blog-based instructional activities using four frequent interactive strategies: A preliminary study. *Education Tech Research Development*, 65, 301-323.

Webb, M. M., Farivar, S. H., & Mastergrorge, A. M. (2002). Productive helping in cooperative groups. *Theory into Practice*, 41(1), 13-20.

Wielkiewicz, R., Fischer, D., Stelzner, S., Overland, M., & Sinner, A. (2012). Leadership attitudes and beliefs of incoming first-year college students: A multi-institutional study of gender differences. *Journal of Leadership Education*, 11(2), 1-25.

Wilkerson, K., L., & Lequia, J. L. (2017). Maximizing the benefits of working cooperatively with peers. In Harris, K., R., & Meltzer, L. (Eds.). *The power of peers in the classroom: Enhancing learning and the social skills* (pp. 224-250). New York: Guilford Press.

- What are 21st Century Skills? (2017, February 13), Retrieved from <https://k12.thoughtfullearning.com/FAQ/what-are-21st-century-skills> Thoughtful Learning.
- Wood, W., & Eagly, A. H. (2015). Traditions of research on gender identity. *Sex Roles*, 73, 461-473.
- Woolfolk, A. (2008). *Educational psychology* (10<sup>th</sup> ed.). Boston, MA: Pearson Custom Publishing.
- Workman, A., & Vaughan, F. (2017). Peer-teaching and learning in art education. *Art Education*, 70(3), 22-28.
- Zaritsky, J. S., & Toce, A. (2006). Supplemental instruction at a community college: The four pillars. *New Directions for Teaching and Learning*, (106), 23-31. doi: 10.1002/tl.230.
- Zhbanova, K., Rule, A., & Stichter, M. (2015). Identification of gifted African American primary grade students through leadership, creativity, and academic performance in curriculum material making and peer-teaching: A case study. *Early childhood Education Journal*, 43 (2), 143-156. doi:10.1007/s10643-013-0628-z.



## APPENDIX A—INTERVIEW QUESTIONS

The teacher-researcher conducted a face-to-face interview with the student-participants.

1. What has peer-teaching taught you?
2. How has peer-teaching benefited you in your life?
3. How do you feel about this peer-teaching experience?
4. What skills did you develop?
5. What have you noticed in the classroom when you are preparing and teach your peers?
6. How has this affected your relationship with your peers?
7. How has this experience different than other classes?
8. How important is working with your peers when you are preparing and teaching your lessons?
9. What skills have you gained from peer-teaching?
10. What were your weaknesses in teaching your peers? What are your strengths now?
11. What advice would you give other students that are about to begin this experience?

## APPENDIX B—PEER-TEACHING QUESTIONNAIRE

The purpose of this questionnaire was to examine the impact a peer-teaching instructional approach on a student's self-confidence. Please take the time to reflect on your experience with peer-teaching in the classroom and at Great Falls Elementary school. Please respond to each question with a thoughtful response. Avoid one-word responses. Please be honest with your response to each question.

1. What did you like about peer-teaching and teaching younger students at GFES?
2. What did you learn about peer-teaching?
3. Did you think peer-teaching improved your ability to lead others? Explain
4. How did you feel about your self-confidence to peer-teach others at the beginning of the semester?
5. How do you feel about your self-confidence after peer-teaching this semester?
6. How has peer-teaching helped you as a student in your academic studies and other extra-curricular activities?
7. What effect does peer-teaching have on your motivation to learn in and outside the classroom?
8. What skills do you feel you have developed when planning, preparing and teaching your peers?

## APPENDIX C—PEER-TEACHING STUDENT SURVEY

1. Did this experience improve your self-confidence?
  - a. Yes, it did
  - b. Yes, somewhat
  - c. No, it did not improve my self-confidence
  
2. Do you feel peer-teaching improved your presentation skills?
  - a. Yes, it did
  - b. Yes, it helped somewhat
  - c. No, it did not improve my presentation skills
  
3. Did this experience improve your planning and organization skills?
  - a. Yes, it did
  - b. Yes, somewhat
  - c. No, it did not improve these skills

4. Did this experience give you the confidence to take on a higher degree of responsibility in the classroom?

- a. Yes, it did
- b. Yes, it did somewhat
- c. No, it did not give me the confidence to handle more responsibility.

5. Did peer-teaching improve your ability to speak easily and smoothly?

- a. Yes, it definitely did
- b. Yes, it helped
- c. No, fluency did not improve

6. Did this experience improve your ability to prepare lessons?

- a. Yes, it definitely did
- b. Yes, it helped
- c. No, I did not improve my ability to prepare lessons

7. Peer-teaching allowed me to work independently without direct supervision by a teacher?

- a. Yes, I totally agree
- b. Yes, I agree
- c. No, I was unable to work by myself

8. Did peer-teaching improve your ability to work with your peers?

- a. Yes, it definitely did
- b. Yes, it helped somewhat
- c. No, it did not improve my ability to work with others

9. Did this experience help you improve your ability to control and direct your own feelings, thoughts, and actions as you were preparing and teaching your peers?

- a. Yes, it definitely did
- b. Yes, it helped somewhat
- c. No, I did not improve my self-discipline skills

10. Peer-teaching allowed you to reflect on your teaching experience and ways to improve your peer-teaching experience.

- a. Yes, I agree
- b. Yes, I agree somewhat
- c. No, I do not agree

11. Peer-teaching has improved your ability to lead others.

- a. Yes, I definitely agree
- b. Yes, I agree
- c. No, this experience has not helped my ability to lead others

12. The peer-teaching experience has been challenging and exciting.

- a. Yes, I definitely agree
- b. Yes, I agree
- c. No, peer-teaching has not been challenging and exciting

13. This experience has improved my ability to think and problem-solve the preparation of lessons and organization of the presentation.

- a. Yes, it definitely did
- b. Yes, it did somewhat
- c. No, it did not improve my thinking skills

14. Peer-teaching has improved my overall self-worth, and belief in myself.

- a. Yes, it definitely did
- b. Yes, it did
- c. No, it did not help my self-worth

15. Peer-teaching has improved my academic studies in school.

- a. Yes, I definitely agree
- b. Yes, I agree
- c. No, I do not agree

16. Peer-teaching allows me the independence to learn JROTC content and teach others.

- a. Yes, it definitely did
- b. Yes, it did
- c. No, it did not help me control how I learn

17. Peer-teaching motivates me to learn subject content.

- a. Yes, I definitely agree
- b. Yes, I agree
- c. No, I do not agree

18. Peer-teaching is fun.

- a. Yes, I definitely agree
- b. Yes, I agree
- c. No, I do not agree

19. Peer-teaching is a good instructional approach to learning JROTC content.

- a. Yes, I definitely agree
- b. Yes, I agree
- c. No, I do not agree