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**PROMOTING EMOTIONAL INTELLIGENCE IN ADOLESCENCE
THROUGH SERVICE-LEARNING**

by

Maggy F. Hanna and Rosetta D. Treece

A Dissertation

Submitted to the

Department of Educational Leadership

College of Education

In partial fulfillment of the requirement

For the degree of
Doctor of Education

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Dissertation Chair: Hector Rios, Ph.D.

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ABSTRACT

Maggy F. Hanna and Rosetta D. Treece
PROMOTING EMOTIONAL INTELLIGENCE IN ADOLESCENCE THROUGH
SERVICE-LEARNING

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Hector Rios, Ph.D.
Doctor of Education

This quantitative study addresses emotional intelligence (EI) development, through the implementation of service-learning curricula, in adolescents ages 13-18. An interrupted time series with non-equivalent multi-group design was used for this study. This design included multiple pre-tests, an application of a treatment, and post-tests at varying time interval to eliminate internal invalidity threats due to history and the instrumentation (Gay & Airasian, 2000; Shadish, Cook, & Campell, 2011). In this study, global trait EI scores were used to test the theory that engagement in service-learning can positively impact EI growth in teens in the middle and high school settings. The rationale for selection of this study design is that it is best suited for the collection of empirical data for the purposes of prediction and testing hypotheses (Gay & Airasian, 2000, p. 10).

During this study, we exposed teens at two independent sites, one middle school and one high school, to service-learning curricula biweekly over the course of 12 weeks to test our assumption that service-learning can positively affect EI. A cluster sample technique was employed whereby specific groups, not individuals, were randomly selected from clusters of social studies and art course both at the middle and high school sites (Gay & Airasian, 2000, p. 130). This was done as a result of resources available to us and the accessibility of participants. The TEIQue-ASF (Trait Emotional Intelligence Questionnaire – Adolescent Short Form) was used to measure emotional aptitude during

the pre and posttest applications. Finally, we employed inferential statistical analyzes to interpret the data collected during this quasi-experiment in order to determine if some conclusions could be expanded to the larger population in terms of EI growth as a result of engagement in service-learning for our target age group (Gay & Airasian, 2000). At a standard alpha value of 0.05, we looked for statistically significant t-test results. We also ran a series of t-tests comparing the differences between Posttest score and Pretest scores for the experimental group, the participants were exposed to the service-learning curriculum, and the control group, those who did not receive instruction in the curriculum.

For this companion dissertation, we worked collaboratively to develop the problem and purpose statements, to identify literature to support this study, to define key terminology, and to determine the methodology. Additionally, we individually collected and analyzed data our respective sample site, collaborated on research findings and implications, coauthored service-learning curricula with the teacher participants, and coauthored this final report. Each of our individual worldviews are also included in this report. The coauthorship of this report provides a synthesized and integrated perspective on our findings in terms of service-learning and its impact on EI development for secondary educators, i.e., middle and high school practitioners.

Table of Contents

ABSTRACT.....	iv
List of Tables	ix
List of Figures.....	ix
Chapter I	1
Statement of Problem.....	4
Context.....	6
<i>Middle School Worldview</i>	8
<i>High School Worldview</i>	9
Rationale for Companion Dissertation Model	10
Purpose of Study	12
Research Questions.....	13
Theoretical Framework.....	14
Definition of Terms	15
Summary	16
Chapter II	17
Review of the Literature	17
Emotional Intelligence Theory	19
Multiple Intelligence Theory	23
Service-learning and its Impact on Emotional Growth	25
Service-learning Theory	26
Summary.....	31
Chapter III.....	32

Methodology	32
Research Design	32
Sample Schemes	34
Participants.....	35
Data Collection Methods	35
Instrumentation	36
Ethical Issues	39
Data Analysis and Interpretation	40
<i>Middle School Sample Site</i>	40
<i>High School Sample Site</i>	42
Curriculum Design.....	43
Course Content	44
<i>Middle School Course Content</i>	45
<i>High School Course Content</i>	48
Summary	50
Chapter IV.....	51
Results.....	51
Methods	51
Results: Post-Pretest Inference Results.....	53
Comparing Groups: Treatment vs. Control across Strata – Schools	56
Comparing Groups: Treatment vs. Control across Strata – Child’s Age.....	63
Summary	68
Chapter V	69

Summary, Conclusions, and Recommendations.....	69
Discussion of Findings and Conclusions	70
<i>Research Question One</i>	70
<i>Research Question Two</i>	72
<i>Research Question Three</i>	73
Implications of the Study	74
<i>Practice</i>	70
<i>Policy</i>	72
<i>Research</i>	73
Limitations	78
Recommendations.....	80
Conclusion	82
References.....	83
Appendix A: Service-learning Unit using UbD design Middle School.....	89
Appendix B: Service-learning Unit using UbD design High School	95
Appendix C: Parent Letter and Consent Form.....	102
Appendix D: Student Letter and Assent Form.....	105
Appendix E: Permission to Use School Site Letter	107
Appendix F: Project Based Learning Diagram.....	108
Appendix G: Learning Styles Inventory	109
Appendix H: TEIQue-ASF Instrument.....	113

List of Tables

1. Table 1: Interrupted Time Series Non-Equivalent Multiple Group design.....	33
2. Table 2: Domains of Trait Emotional Intelligence.....	38
3. Table 3: Comparison of Post-Pre Treatment Groups.....	54
4. Table 4: Analysis of Post-Pretest Control and Treatment Groups.....	55
5. Table 5: Average and Standard Deviation of Differences Post-Pre.....	57
6. Table 6: High School Post-Pretest Comparisons.....	58
7. Table 7: Middle School Post-Pretest Comparisons.....	58
8. Table 8: High School Student TEIQue-ASF Difference across EI Domains.....	59
9. Table 9: Middle School Students TEIQue-ASF Difference across EI Domains...	60
10. Table 10: Average Difference Stratified for Gender.....	61
11. Table 11: High School Average Difference (Posttest-Pretest)-Female.....	62
12. Table 12: Comparing Groups across Strata.....	64-66

List of Figures

1. Figure 13: Total Differences—Age Group Analysis.....67

Chapter I

Introduction

Educators largely ignore Emotional Intelligence (EI) in curriculum development due to career and college readiness agendas in public school institutions (Monahan, 2012). This lack of whole child focus in public education prompted the Association for Supervision and Curriculum Development (ASCD) to call for a paradigm shift emphasizing emotional growth as a content area for the 21st Century learner (Association for Supervision and Curriculum Development, 2007; Monahan, 2012; American Association of School Librarians, 2007). This movement suggests a focus on curricula designed to help youth develop emotional awareness of self and others, conflict and crisis management techniques, empathy, and relationship building acumen as essential life skills (Association for Supervision and Curriculum Development, 2007; Monahan, 2012). Additionally, theorists purport that the void of emotional development opportunities for pupils in secondary education has resulted in increased incidents of conflict in interpersonal relationships amongst youth, aggression, emotional instability, and depression (Goleman, 1995; Charbonneau & Nicol, 2002; Ogunyemi, 2010).

As vice principals in secondary schools, teachers have often requested our assistance with students who were struggling both academically and socially. As a solution for some of the more extreme cases, community service activities were implemented due to our assumptions that service-learning could have a positive influence on students referred to us for the purpose of intervention. However, an auxiliary survey of the larger population in the suburban community examined in this study revealed the problem of low EI extended beyond the original target population of those students

exhibiting overt emotional challenges. With support from the Search Institute, a grassroots organization whose mission is to provide research services to measure “non-cognitive” skills in teens, data were collected on a much larger population of students, grades 6 through 12. This survey provided a more extensive profile of students’ attitudes and behaviors and indicated that many of our students were engaging in at risk behaviors, symptomatic of deficits in EI (Search Institute, 2000; Goleman, 1995; Charbonneau & Nicol, 2002; Ogunyemi, 2010).

Working in collaboration with the suburban school community site of this study, the Search Institute surveyed over 700 students in order to capture student attitudes and behavioral trends, grades 6 through 12. The executive summary of this report evidenced just over 50% of students reported engaging in at risk behaviors such as drug abuse, violence, self-harming, symptoms of depression, and suicidal ideations (Developmental Assets, 2012.) Based upon these findings, we gleaned that the problem of low EI extended to the larger school community and thus needed a broader prescriptive approach if we were to address it.

Researchers have identified viable service-learning as an approach to promote emotional development (Billig, 2010; Kaye, 2010; Townsend, 2010). However, few research studies have been conducted that examine the potential of service-learning curricula in fostering increased EI and promoting healthy emotional growth in the middle and high school settings.

Prior research in emotional development in young adults indicates that dimensions of EI are an invariant personality system that is full-fledged by adulthood and remains static past midlife (Chapman & Hyslip, 2006). The research also shows that EI

develops at a greater pace during the period from infancy to adolescence than at adulthood (Elias et al., 1997; Goleman, 1995; Mayer, Salovey, & Caruso, 2004). Further, Schaie (2001) purports that EI must be nurtured at various age levels in order to determine both its “emergence” and “development capacities,” but is best impacted during childhood and adolescence (p. 247). As researchers consider EI growth potential, there is an argument to be made for early interventions. Remedial strategies for EI must occur no later than adolescence (Goleman, 1995; Chapman & Hyslip, 2006).

Additionally, there are also some theorists who cite that girls have higher EI than boys, e.g. in the ability to perceive and manipulate emotions (Gorostiaga et al., 2011; Thayer, Rossy, Ruiz-Padial, & Johnsen, 2003). While, there are indications that girls do show higher EI in some facets as opposed to boys, we believe that there is still indications that boys can develop strong EI and benefit from exposure to activities that encourage emotional learning. Due to these theories in EI development we broadened our examination to determine how the variables of age and gender might also affect EI development.

Beyond the psychological and sociology fields of study, there is theoretical justification for this work grounded in the paradigms of early education theorists like John Dewey who strived to reform education practices by instilling sociological consciousness in young learners (Hironimus-Wendt & Lovell-Troy, 1999, p. 363). Literature suggests that service-learning is valuable for enhancing academic performance as well as positively affecting social emotional development (Eyler & Giles, 1999; Mayer et al., 2004). However, Simons and Cleary (2006) state, “...few studies have used rigorous research methods to evaluate learning [for] social and personal outcomes” (p.

308). Although there is available research providing evidence that EI capacity can be a predictor of student success, little work is available that speaks to specific strategies schools can use to positively impact EI development in youths (Elias et al., 1997; Goleman, 1995; Mayer, Salovey & Caruso, 2004; Parker, Hogan, Majeski and Bond, 2004). Researchers have conducted studies in EI for business leadership programs in higher education, but little in secondary education programs (Ogunyemi, 2010).

As a result, we examined service-learning as an approach to EI deficits in teens at the secondary level. In this chapter, we provide the statement of the problem, explanation of companion dissertation model, purpose of the study, research questions, theoretical framework, and definitions of key terminology.

Statement of Problem

Theorists in cognitive functioning agree that emotional well-being is essential for learning to occur (Goleman, 1995; Charbonneau & Nicol, 2002; Ogunyemi, 2010). In order for children to effectively participate in the learning process, they must be able to cooperate, communicate, self-regulate, and relate to others, abilities that are directly associated with EI (Onchwari & Keengwe, 2011, p. 279). The problem is a deficiency in EI development in many teens and a lack of curricular programs designed to promote emotional growth in middle and high schools (ASCD, 2007; Charbonneau & Nicol, 2002; Ogunyemi, 2010).

Goleman (1995) defines emotional intelligence as “being able to motivate oneself and persist in the face of frustrations; to control impulse and delay gratification; to regulate one’s moods and keep distress from swamping the ability to think; to empathize and to hope” (p. 34). Without these essential life skills, students are ill equipped to meet

the demands of rigorous coursework that focuses on problem solving, working collaboratively with others, and synthesizing complex ideas (Goleman, 1995). Although some students come to school with the ability to self-regulate and understand emotions, skills directly linked to EI, others need development in these areas. Schools must provide more opportunities for emotional learning (Goleman, 1995). Unfortunately, middle and high schools in particular, lack curricula that focus on emotional development (ASCD, 2007). High stakes testing and moves toward pupil progress models for teacher and school evaluation have put pressure on leadership to concentrate on Common Core Standards specific to mathematics, science, and language arts, leaving little room for whole child developmental models (ASCD, 2007).

Unfortunately, many 21st Century learners are lacking in the heuristics of relationship building, self-awareness, and stress management, which can form a barrier to learning (Elias et al., 1997). The ramifications have been an increase in school violence, juvenile delinquency, substance abuse, teenage pregnancies, eating disorders, anxiety disorders, self-harming, and depression (Charbonneau & Nicol, 2002; Elias et al., 1997; Goleman, 1995; Ogunyemi, 2010).

Beland (2007) states that industry leaders have voiced concerns that "...they now expect from high school graduates a level of social and emotional competency as high as, if not higher than, the level of any technical skill" (p. 70). Therefore, public school educators must consider EI as important as academic standards when setting learning targets for their students. The Association of Secondary Curriculum and Development (ASCD) (2007) asserts that schools, districts, communities, and policy-makers must

recognize that academic achievement, as measured through current education standards, is insufficient to prepare young people for their future.

ASCSD (2007) states that educators must attend to whole child development through rigorous curriculum that helps students feel connected to school and their community. Social awareness skills, such as empathy and/or the ability to recognize feelings in others, are crucial skill sets in that they form the basis for community building, academic performance, workplace readiness, and good citizenship (Beland, 2007; Manring, 2012). Also, self-awareness is necessary if teenagers are to recognize their own emotions in order to self-manage and cope with high levels of stress (Beland, 2007). Relationship building and good decision-making skills are also integral to teamwork, collaboration, and socially responsible behaviors necessary for workplace readiness (Beland, 2007; Manring, 2012).

Lastly, researchers posit that there are links between EI and academic outcomes (Elias et al., 1997; Goleman, 1995; Mavroveli et al., 2007; Mayer, Salovey & Caruso, 2004). The literature supports service-learning as a process for promoting EI in young adults (Barton & Reed, 2010; Billig, 2010; Kaye, 2010; Scharff, 2009). As educational leaders, the cultivation of these life skills in youths is one primary challenge and is necessary if academic success is to occur.

Context

From our perspectives as school administrators, we analyzed and implemented a serviced based solution in response to students who were exhibiting difficulties with compliance and/or academic performance. Often, the adolescents exhibited poor decision-making skills and limited socio-emotional stability. During the 2010-2011

school year, student management data from both schools evidenced that 47% of the cases referred to us for intervention were results of socio-emotional issues. One strategy that we implemented in such cases was to assign the student community service activities. Students exhibiting socio-emotional difficulties were assigned to work with peers in multiply disabled (MD) classrooms as mentors. Requisite to this program, students assigned as peer mentors were required to maintain an exemplary code of conduct in order to be assigned to work with MD peers. This strategy seemed to address negative behaviors in the student mentor in many cases; however, there was no evidence to support a relationship between the community service and the improvement in behavior. Additionally, this approach was lacking many of the essential elements of true service-learning. The emphasis in service-learning is centered on the learning goals and not simply the activity. True service-learning has the potential to promote prosocial behaviors, improve personal identity of the participant, and to improve grades and motivation for students to come to school; as opposed to community service which occurs over a shorter period of time and is not aligned to learning outcomes (Search Institute, 2000, p. 11). Additionally, service-learning has the most impact when students engage in it over a significant duration of time while community service occurs over a very short period or even a matter of hours (Search Institute, 2000, p. 46).

This method of assigning community service to a few troubled youth was not meeting the needs of all of the students through a structured program. Issues with emotional regulation had been emerging in some of our higher achieving students as well and extended the concern beyond the original target group as indicated by the Search Institute study conducted in one of the host districts of this study. The Search Institute

polled over 700 students grades 6th through 12th, it was determined just over 50% of students in the middle and high school reported engaging in at risk behaviors such as drug abuse, violence, self-harming, and suffered from symptoms of depression with suicidal ideations, some students who self-identified as high achieving and honor students (Developmental Assets, 2012). Hence, the application of service-learning for this study was broaden to include a larger student population.

Middle School Worldview

To approach this problem, the middle school researcher's worldview for this study was participatory. This perspective allowed us to examine the social world as agents for change (Creswell & Plano Clark, 2011, p. 41). This worldview is collaborative and is a change oriented approach to research (Creswell & Plano Clark, 2011, p.40). The participatory perspective grounded our intent to help teens to grow and develop intrinsic motivation to be good citizens in public schools. Further, the concern with a growing societal problem, which appeared to be germane to emotional development in adolescence, or the lack thereof, could possibly be examined (Elias et al., 1997). The middle school researcher, Rosetta D. Treece, has had extensive experience with writing curriculum utilizing *Understanding by Design* (UbD) created by Wiggins and McTighe, the curriculum development method used in both the middle and high school research sites from which the samples the samples were taken. Chapter III contains an expanded explanation on UbD. Although service-learning is the framework, UbD is the paradigm used to create the curricula for this study.

High School Worldview

The high school researcher's worldview was post-positivist. The post-positivism world view allowed the researcher to be purely objective, deferring to the scientific data to test theories and determine any cause and effect relationship (Creswell & Plano Clark, 2011, p. 415). The post-positivist worldview allowed us to address our concern of the under-developed EI in adolescents ages 13-17 in a quantitative manner, as we explored service-learning as a possible prescription to increase EI. As a complement to the middle school worldview, participatory, the post-positivist worldview allowed us to rely on the data to focus on a real issue of students with underdeveloped EI. We applied our expertise as instructional leaders to collaboratively develop learning objectives for students in order to "change" or improve their emotional competencies. The high school researcher, Maggy Hanna, has had experience as a subject area supervisor and school-based administrator, which helped to provide particular expertise in program design to optimize student academic outcomes through meaningful learning experiences. Consistent with the postpositive worldview, during this study we used empirical data to measure the emotional growth of our participants and to test our assumptions that service-learning can positively impact that growth (Creswell & Plano Clark, 2011).

Both the middle school and high school worldview complimented each other. The participatory worldview is seen as the advocacy worldview. The worldview was formed to address groups in society that were neglected or marginalized (Creswell & Plano Clark, 2011). The participatory worldview allowed us to focus on the social justice issue of how to increase EI holistically, as the deficit in EI development in students is often neglected by educators. The post-positivist worldview is a traditional form of

research, where the researcher solely relies on data and does not favor any group over another (Creswell & Plano Clark, 2011). Post-positivism also challenges researchers to seek the absolute truth through scientific methodologies (Creswell & Plano Clark, 2011). This worldview allowed us to focus on the objective data as we had critical discussions on the effectiveness of service-learning on emotional growth. Thus, the post-positivist worldview helped to ground the advocacy-prone participatory worldview in science and data. The two worldviews complimented each other in that the participatory worldview allowed us to empower individuals, e.g. the participants in this study, to induce change through a humanistic and holistic approach to classroom instruction that promoted emotional learning activities, while the post-positivist worldview was used to challenge us, the researcher, to utilize empirical evidence to think critically and analytically as we tested our hypothesis (Creswell & Plano Clark, 2011).

Rationale for Companion Dissertation Model

Our shared interest in a proactive approach to improve the deficit in emotional intelligence for our students drove the decision to select a collaborative research model for this work. DuFour and Eaker (1998) suggest that school practitioners conduct inquiry collectively through professional learning community (PLC) paradigms. These collaborative partnerships can be highly effective in efforts for school improvement. This research based practice of forming collaborative professional partnerships for inquiry purposes also provides variable lenses through which to examine a problem. The companion dissertation model provides a comparable framework to the PLC paradigm. DuFour and Eaker (1998, p. 28) contend that learning organizations have shared values, participate in collective inquiry, engage in experimentation in effort toward continued

improvement, and are results oriented. PLC's provide the vehicle were teachers and school leaders to engage in conversations about teacher practice, to set goals, and to plan and implement inquiry based projects to enhance academic outcomes. The PLC model provides practitioners the ability to engage in collaborative and collective inquiry to enhance the learning experiences of the students we serve.

Researchers, similarly, use companion dissertations to expand their resources (McNamara, Lara-Alecio, Hoyle, & Irby, 2006, p. 1). It is important that researchers who use these collaborative models elect to do so with a commitment to collaboration. McNamara et al (2006) contend, "researchers also must know their strengths in terms of knowledge, research skills, leadership, and [be in] support of each researcher so that the research itself can become the best quality produced" (p. 3).

The *evaluation* companion model allowed us to work in partnership, for this study on a similar research agenda with a focus on shared research questions and research methodology, and in two different school sites (McNamara et al., 2006). Like the PLC, the evaluation companion dissertation requires colleagues to depend on their individual talents to create and test initiatives to improve the teaching and learning processes for pupils and their teachers. For this companion dissertation, we worked collaboratively to develop the problem and purpose statements, to identify literature to support this study, to define key terminology, and to select an appropriate methodology. Each of us also collected and analyzed data at our respective research site, collaborated on research findings, coauthored service-learning curricula with the teacher participants in this study, and coauthored the final report of findings.

Purpose of Study

Goleman (1995) has examined how emotions can affect individuals and their ability to manage, interpret, and use emotion to be successful. However, the national trend to move toward the Common Core Standards and more extensive high stakes testing has created a vacuum in the area of emotional development in K-12 education (Partnership for 21st Century Skills, 2007). The result of ignoring the whole child with the emphasis on academic rigor has become a detriment. While the focus on academics is important, it is equally important that time is also dedicated to the emotional development of the student.

The purpose of this quantitative study is to address emotional intelligence (EI) development, through the implementation of service-learning curricula, in adolescents ages 13-18. An interrupted time series with non-equivalent multi-group design was used for this study. This design required multiple pre-tests, an application of a treatment, and post-tests at varying time interval to eliminate internal invalidity threats due to history and the instrumentation (Gay & Airasian, 2000; Shadish, Cook, & Campell, 2011). In this study, global trait EI scores were used to test the theory that engagement in service-learning can positively impact emotional intelligence growth in teens in the middle and high school settings. The rationale for this design is that it is best suited for the collection of empirical data for the purposes of prediction and testing hypotheses (Gay & Airasian, 2000, p. 10).

During this study, we exposed teens at a middle and a high school site to service-learning curricula biweekly over the course of 12 weeks in middle school social studies and high school art classes to test our assumption that service-learning can positively

affect emotional intelligence. These curricula were aligned to learning goals and pre-existing course objectives for each subject. A classic cluster sample technique was employed whereby select groups, not individuals, were randomly selected from clusters of social studies and art course both the middle and high school sites (Gay & Airasian, 2000, p. 130). The TEIQue-ASF (Trait Emotional Intelligence Questionnaire – Adolescent Short Form) was used to measure emotional aptitude during the pre and posttest applications.

We employed inferential statistical analyzes to interpret the data collected during this quasi-experiment in order to determine if some conclusions could be expanded to the larger population in terms of EI growth as a result of engagement in service-learning for our target age group (Gay & Airasian, 2000). At a standard alpha value of 0.05, we looked for statistically significant t-test statistics. We also ran a series of t-tests comparing the differences between Posttest score and Pretest scores for the experimental group, the participants were exposed to the service-learning curriculum, and the control group, those who did not receive instruction in the curriculum. The intent of this investigation was to determine if service-learning could have a positive impact on emotional intelligence, and if there is a significant difference in how this impact may vary based on age and gender.

Research Questions

Elias et al. (1997) state that children “must learn to see beyond themselves and appreciate the concerns of others” in order to be emotionally viable citizens (p. 1). Further, teens must hone their ability to manage, understand, and express emotions as a means to cope, form relationships, work cooperatively, solve problems, and adapt to

complex situations (Elias et al., 1997, p. 13). We also wanted to isolate for variables of gender and age based upon prior research that indicate that there might be some advance to intervention at a younger age and that girls exhibited higher EI aptitudes (Elias et al., 1997; Goleman, 1995; Gorostiaga et al., 2011; Mayer, Salovey, & Caruso, 2004) A survey of the literature indicates that service-learning engagement can develop a strong sense of self-regulation, self-awareness, and awareness of others (Barton & Reed, 2010; Billig, 2010; Kaye, 2010; Scharff, 2009). The research questions were as follows:

1. Is there a relationship between engagement in service-learning activities and EI development?
2. Is there a difference in EI development as a result of service-learning based upon gender?
3. Is there a difference in EI development as a result of service-learning based upon age?

The assumption is that there is a relationship between engagement in service-learning and the development of EI.

Theoretical Framework

In 2012, in response to a call to educate the whole child, The Collaborative for Academic, Social, and Emotional Learning (CASEL) at the University of Illinois at Chicago developed a five-competency model of social and emotional learning which includes social awareness, self-awareness, self-management, relationship skills, and responsible decision-making. CASEL (2012) states that educators must work with students to help them develop these five-competencies of EI through academic learning

such as service-learning. This model provides the underpinnings for the curriculum implemented in this study.

As a mental construct, the EI domain comprises two distinct ideologies, trait EI and ability EI. Chapman & Hyslip (2006) state that ability EI is a “cognitive ability” while trait EI is a “component of personality” (p. 411). There also have been suggestions that trait EI exists between the planes of personality and intellectual ability (Chapman & Hyslip, 2006; Mayer, Salovey, & Caruso, 2004; Mavroveli et al., 2007). Trait EI is the relationship between one’s self-perception and behavior (Mavroveli et al., 2007, p. 259). Trait EI relates to how one perceives emotion and reacts to emotional input (Mavroveli et al., 2007, p. 260). In most recent research, findings have indicated a linkage between trait EI and pro-social and maladaptive behaviors, emotional happiness and depressive states, decision-making affects, academic achievement and emotional regulation (Elias et al., 1997; Goleman, 1995; Mavroveli et al., 2007; Mayer, Salovey & Caruso, 2004). For the purposes of this study, our focus was on trait EI as it is measurable utilizing the TEIQue-ASF instrument used in this study. Extensive work has been done in measuring trait EI in adolescence and the impact variables have on its development. Further discussion of trait EI measurement is discussed in Chapter III.

Definition of Terms

Key terminology used in this study includes emotional intelligence (EI), trait emotional intelligence, TEIQue-ASF, and service-learning. Emotional intelligence is defined as the capacity for individuals to understand, interpret, and manipulate emotions in others and self (Elias et al., 1997; Goleman, 2001; Mayer, Salovey & Caruso, 2004). Trait emotional intelligence relates to how one perceives emotion and reacts to emotional

input (Mavroveli et al., 2007, p. 260). The TEIQue-ASF is the instruments used in the study to measure EI. It is a simplified version of the longer Trait Emotional Intelligence Questionnaire. TEIQue-ASF consists of 30 statements measures global trait EI in adolescents, target ages 13-17 (Frederickson, Petrides, & Simmonds, 2012, p. 165). Finally, service-learning is defined as community service activities aligned to academic objectives. These activities must also include investigation, planning, action on the part of students, reflection, and the demonstration and/or celebration of the activities' end (Billig, 2010; Stringfellow & Edmonds-Behrend, 2013).

Summary

Through this companion dissertation, we seek to improve both of our individual and collective practice in the implementation of curricula that promote emotional development in the secondary school setting. The intent was to determine if a curriculum in service-learning is a viable process to promote emotional growth in the secondary school setting. For this companion dissertation, we worked collaboratively to develop the problem and purpose statements, to identify literature to support this study, to define of terminology, and to select an appropriate methodology. In Chapter II, we provide a review of the literature that grounds this work including emotional intelligence, multiple intelligence, and service-learning theories. In chapter III, we discuss the study methodology, research design, sampling scheme, data collection, analysis, and interpretation approaches, instrumentation and treatment (e.g., curriculum design). In chapter IV we present our results and in chapter V a summary of the study, implications, conclusion. Implications include those for future teacher practice, policy, and future research.

Chapter II

Review of the Literature

The theoretical underpinnings that framed this study include previous research in emotional intelligence (EI), multiple intelligence, and service-learning. Emotional intelligence is the capacity for individuals to understand, interpret, and manipulate emotions in self and others (Elias et al., 1997; Goleman, 2001; Mayer, Salovey & Caruso, 2004). Gardner's (1995) theories in multiple intelligence are also included as they provide much of the foundation for EI theories.

Service-learning can broaden an individual's perspective through the development of empathic understanding and caring connections to others (Elias, 2006). Additionally, studies indicate success with the integration of service-learning into the academic experiences of students to promote emotional growth (Barton & Reed, 2010; Billig, 2010; Kaye, 2010; Scharff, 2009). A review of the literature supports service-learning as a process for emotional growth in students (Barton & Reed, 2010; Billig, 2010; Elias, 2006; Kaye, 2010; Scharff, 2009).

There is strong evidence to support the implementation of service-learning programs to encourage adolescents to broaden their perspectives, expand their worldviews, and develop belief and value systems that lead to more fulfilling life experiences (Astin & Sax, 1998; Astin, Vogelgesang, Ikeday & Yee, 2000; Elias, 2006; Hunt, 2006; Markus, Howard & King, 1993; Strage, 2000). Studies have found that there is a correlation between emotional intelligence and academic success. A study conducted in the United Kingdom (Pope, Qualter, Roper, 2012) examined the influence of EI on academic progress and achievement in United Kingdom university students. It examined

the relationship between EI and EI competencies in 135 undergraduate psychology students in the UK (Pope, et al, 2012). Their academics were assessed using retention statistics and students' final average percentage mark (APM) at the end of their degree course. EI was measured at the start of the course using the Emotional Competence inventory-University Edition (ECI-U II). Although there were no major differences when comparing the four EI clusters, the higher final APM was significantly related to higher scores on five individual EI competencies: conscientiousness, adaptability, empathy, organizational awareness, and building bonds (Pope, et al, 2012). The five competencies grouped together significantly predicted APM, accounting of 15% of variance once gender had been controlled (Pope, et al, 2012). Therefore, this study found some notable correlation between EI and academic achievement.

Another study conducted in Melbourne, Australia (Billings, Downey, Lloyd, Lomas, Stough, 2014) found a relationship between emotional intelligence and scholastic achievement in pre-adolescent children. Four hundred and seven girls and boys between the ages of 9 and 13 were assessed the Swinburn University Emotional Intelligence Test – Early Years (SUEIT-EY). Scholastic results were collected for literacy and numeracy ability. Results of the study found significant relationships between the understanding emotions branch of ability and academic achievement (Billings et al, 2014). The understanding of emotions branch correlated with general intellectual ability, reading, and math achievement (Billings et al, 2014). Overall, EI accounted of 11% of the variation of both literacy and numeracy scores (Billings et al, 2014). Due to the findings, “This study suggests that EI should be consciously and constructively developed in young children” (Billings et al, 2014).

While researchers have conducted studies implementing service-learning as a method for EI development in higher education and business settings, there has been little research on school age children. The limited research in this area supports the need for further studies on service-learning at the middle and high school levels. In this chapter, we present an overview of existing literature in theories on emotional intelligence, multiple intelligence, service-learning, and its impact on EI growth.

Emotional Intelligence Theory

Goleman (1995) theorizes that emotional intelligence can be a more valuable asset than Intelligence Quotient (IQ). Goleman (1995) states, “at best, IQ contributes to about 20 percent to the factors that determine life success, which leaves 80 percent to other forces” (p. 34). There is indication that high EI can positively influence one’s happiness, success, and personal fulfillment.

Goleman (1995) states that:

Emotional life is a domain that, as surely as math or reading, can be handled with greater or lesser skill, and requires its unique set of competencies. How adept a person is at managing emotions is crucial to understanding why one person thrives in life while another, of equal intellect, dead-ends. (p. 36)

Goleman suggests that public school systems are fixated on academic performance and give little regard to emotional development.

Traits like awareness, empathy, interpersonal skills, self-confidence, optimism, adaptability, and the ability to handle stress, are all indicators of high EI (Goleman, 1995). Empathy forms the cornerstone for high EI allowing an individual to experience the broadest possible scope and range of emotional experiences (Glennon, 2000).

Moreover, empathy allows one to seek to understand how another person might feel, driving the ability to relate to others. This skill is also essential for collaboration, cooperation, and teamwork (Goleman, 1995; Taylor & Larson, 1999).

There are theorists who believe that deficits in EI are a problem that are higher in boy populations (Gorostiaga et al., 2011; Thayer, Rossy, Ruiz-Padial, & Johnsen, 2003). While their past work somewhat supports this theory, these studies also indicate that girl populations have scored higher in abilities to pay attention to emotions but lower aptitude in the areas of clarity and repair than men (Gorostiaga et al., 2011; Thayer, Rossy, Ruiz-Padial, & Johnsen, 2003). While these findings indicates that girls have demonstrated EI strengths in some areas, the deficits in the areas of clarity and repair suggest that girls would benefit from learning activities that promote emotional development (Thayer, Rossy, Ruiz-Padial, & Johnsen, 2003). This was an area we believed needed further examination.

Teens who do not develop emotionally are at a higher risk for developing maladaptive behaviors. These behaviors can include substance abuse, teenage pregnancy, violence and aggression (Goleman, 1998). Fostering EI development at an early age may prevent at risk behaviors that are an outgrowth of mismanaged emotions. Middle and high school level curricula offer unique opportunities for educators to affect EI. The middle school years, in particular, are associated with rapid cognitive growth (Taylor & Larson, 1999, p. 333). By the time youths enter high school, the opportunities to influence emotional growth are somewhat diminished, but still viable (Taylor & Larson, 1999). Goleman contends that EI develops early on and that targeted learning objectives can have an impact on its development (1995). Through participation in activities that

stimulate emotional learning, middle and high school pupils can develop abilities to manage emotions more effectively (Taylor & Larson, 1999). Researchers agree that there is a need for programs that promote emotional development during adolescence in the public school setting (Elias et al., 1997; Goleman, 1995; Mavroveli et al., 2007; Mayer, Salovey & Caruso, 2004).

A body of literature exists that examines the theories of EI as they relate to adolescent psychology and socio-emotional development (Mayer, Salovey, & Caruso, 2004). Charbonneau and Nicol confirm that adolescence is an unexplored stage for EI development in children (Charbonneau & Nicol, 2002, p. 361). Although promoting EI through service-learning has been examined in relationship to business, leadership, and higher education programs, little work has been done at the secondary public school level (Charbonneau & Nicol, 2002; Ogunyemi, 2010; Mayer, Salovey, & Caruso, 2004).

Because of the increasing emphasis on EI and its impact on academic achievement, educators are now attempting to find best practices that foster emotional development (Ragozino, Resnik, Utne-O'Brien, & Weissberg, 2003). A body of research indicates that poor EI development can negatively affect academic achievement (Astin & Sax, 1998; Astin et al, 2000; Markus, Howard & King, 1993; Ragozino et al., 2003; Strage, 2000). Conversely, teens exposed to learning environments that support emotional development show enhanced academic performance (Ragozino et al., 2003).

Wilson, Gottfredson, and Najaka (2001) examined findings of 165 studies on student-based intervention programs. Their analysis revealed social and emotional learning programs helped increase attendance and decrease dropout rates in student

populations. Ragozino et al. (2003) contend:

rather than diverting schools from their primary academic mission, improving social and emotional competence advances the academic mission of schools, while also ensuring that they meet their broader mission to produce caring, responsible, and knowledgeable children. (p. 169)

Curran et al. (2007) found a relationship between the effects of EI and academic achievement, health and well-being, emotional adjustment, and career/workplace readiness. Brackett, Mayer, and Warner (2004) provide additional evidence that improving EI can extinguish maladaptive behaviors through their work with struggling undergraduate students at the college level. Educators are now seeking to expand student-learning targets to include emotional learning (Curran, Farrell, Humphrey, Morris, & Woods, 2007). In order to include emotional learning, service-learning can be seen as a viable option to meet those needs. Service-learning includes the emotional learning that consists of cultural competence and social capital (Swaminathan, 2007). The American Youth Policy Forum (Swaminathan, 2007) supports that high schools should be redesigned to use community service and networks to support development in young students, which could also provide a more relevant connection and more real-world experiences for young students.

The literature supports that educators can directly teach appropriate behavioral patterns and work to change brain perception; thus, direct instruction helps evolve individuals who are prone to self-serving and/or inappropriate expressions of emotions (Curran et al., 2007).

According to the Association of Supervision and Curriculum Development (ASCD), emotional health is a fundamental asset in order for learning to occur (2007).

Goleman (1995) maintains that:

Brain researchers now accept that our repeated experiences help shape the brain itself and that this ‘neural plasticity’ occurs throughout life. Childhood experiences have special potency in this process. This means that the school years are a neurological window of opportunity, a chance to ensure that all children get the appropriate experiences to help them flourish in their jobs and careers, as mothers and fathers, husbands and wives, as citizens of our communities. (p. 34)

Educators in secondary schools have a unique opportunity to influence EI in teens through the implementation of structured service-learning experiences.

Service-learning connects with community-based service (Calabrese, Henry, Wright, 2009). It allows students to develop more meaningful experiences that link with their learning goals (Calabrese et al, 2009). There is “a body of research that supports the positive academic, social, and cultural impact service-learning has on students’ learning outcomes” (Calabrese et al, 2009). Research also shows a correlation between service-learning and positive students’ social behavior, habits, and attitudes (Community Service, 2010).

Multiple Intelligence Theory

Howard Gardner (1983) challenged the traditional view of intelligence. Prior to Gardner’s work, researchers focused on measuring intelligence for cognitive abilities. Gardner (1983) argued that intelligence was not linear, but rather exponential with multiple domains. Gardner (1983) states, “there is persuasive evidence for the existence

of several relatively autonomous human intellectual competences, abbreviated as human intelligences” (p.8). The spectrum of multiple intelligence consists of linguistic intelligence, musical intelligence, logical-mathematical intelligence, spatial intelligence, bodily-kinesthetic intelligence, as well as inter and intra personal intelligences (Gardner, 1995). Researchers draw parallels between the personal intelligence realm and EI theories.

Gardner (1995) describes personal intelligence, intra and inter, as the capacity to know oneself and others. Gardner identifies the essence of intra personal intelligence and self-awareness. Gardner (1983) states:

the core capacity at work... is access to one’s own feeling life – one’s range of affects or emotions: the capacity instantly to effect discriminations among these feelings and, eventually, to label them, to enmesh them in symbolic codes, to draw upon them as a means of understanding and guiding one’s behavior. (p. 239)

Gardner explains that intra personal intelligence is a form of self-awareness where the individual is aware of his/her own emotions and how to manage them. Gardner (1983) believes that individuals with high interpersonal intelligence are acutely aware of other people’s feelings, as defined by their ability to “notice and make distinctions among other individuals, and in particular, among their moods, temperaments, motivations, and intentions” (p. 239). Also according to Gardner (1983), the personal intelligences are the oldest and most biological of all the domains, stating, “In some ways, the personal intelligences are as basic and biological as any intelligence considered” (p. 275).

These qualities, Gardner (1995) contends, form a composite of the overall levels of multiple intelligences that one can possess beyond traditional IQ. He argues that

nurturing all facets of multiple intelligence are part of the desired outcomes for school-aged children. Researchers draw parallels between Gardner's work and service-learning (Neal & Holland, 2005). Researchers have found direct links between service-learning and multiple intelligence development (Billig, 2010; Neal & Holland, 2005).

Service-learning and its Impact on Emotional Growth

The active participation in service-learning can positively affect cognitive, affective, and psychomotor development (Hamner, 2002). It can also promote communication and critical thinking skills in individuals (Fogarty, 1997). Turner (2005), as an example, found that teaching service-learning improved the emotional competence of her undergraduate students. By conducting a quasi-experimental study, she assessed her students using the Goleman, Boyatzis & Hay McKee Emotional Competence Inventory (ECI) using a pre-posttest design (Turner, 2005). Data from this study indicated an improvement in self-awareness, social awareness, self-management, and social skills in those students who engaged in service-learning activities. Notably, there was significant growth in the participants' ability to empathize.

Spencer (2009) examined how service-learning affected emotional intelligence in college students. In this study, 84 business and accounting undergraduates spent 8 to 12 hours during one semester as part of their required coursework working as volunteers in an assigned nonprofit agency such as The Women's Resource Center, Meals on Wheels, AlaMap, a retirement home, a food bank, the YMCA, and an after-school enrichment program. At the end of the semester, they took emotional intelligence questionnaires and wrote about their experiences. Spencer then conducted a qualitative analysis of the student responses for emotional intelligence themes.

The emotional intelligence questionnaire asked subjects to indicate, using a 7-point Likert scale, to what extent they felt their course-based academic service-learning experience increased their self-awareness, self-regulation, self-motivation, empathy, and social skill. The findings revealed item scores for self-awareness (4.6), self-regulation (4.3), self-motivation (5.2), and social skill (5.2), each higher than the aggregate means for those items (4.4, 4.2, 4.9, and 4.7). The aggregate results suggest that service-learning experiences had a greater impact on three of the five dimensions of emotional intelligence, self-motivation (5.2), empathy (5.0), and social skills (5.2), than those who did not engage in such experiences (Manring, 2012).

Manring's (2012) analysis of the participants' comments regarding their experience indicated an increase in EI in those participants. Research findings have linked service-learning with the EI development. Manring (2012) states that service-learning provides meaningful experiences that shift their perspectives to "other-centered self-definition, coupled with faculty-facilitated self-reflective processes, [which] seems to be key in helping to foster increased emotionally intelligent skills and behavior" (p. 178).

Service-learning Theory

The idea that service-learning as beneficial to whole child education can be traced by to the work of John Dewey, one of the forefathers of progressive educational theory. Dewey (1916) believed that children learned more effectively and became better citizens if they engaged in service-learning activities incorporated into their academic curricula. Service-learning did not formally appear in school curricula in America until the early 1970's. In the mid-1980's, service-learning in schools gained ground with the

establishment of organizations such as Campus Compact and Youth Service American (YSA), organizations that encourage national service for youth.

Today, many colleges and universities have enhanced their program offerings by requiring undergraduates to take courses in service-learning (Billig, 2010; Spring, Diets, & Grimm, 2006; Townsend, 2010). Tulane University made service-learning a requirement for all undergraduates in 2008 (Billig, 2010; Spring, Diets, & Grimm, 2006; Townsend, 2010). Additionally, religious-affiliated schools have integrated community into their curriculum. *Cura perosnalis* (care of the individual) is a founding ideal in all Jesuit College, in which they consistently have service-learning projects throughout their curriculum (Calabrese, Henry, & Wright, 2009). Unfortunately, public schools, specifically at the secondary level, have been inconsistent with the implementation of service-learning as an integrated part of educational programming.

Research indicates that young people who participated in service are more likely to continue on a pathway of lifelong civic engagement (National & Community Service, 2010). When educators tied curriculum service-learning to academic objectives, student achievement and socio-emotional growth occurred (National & Community Service, 2010). Service-learning promotes civic responsibility by requiring participants to form community partnerships and achieve academically through project-based learning experiences. To be authentic, educators must ground these learning experiences in reflective practices, which help students connect core content knowledge and its real world applications (Townsend, 2010). When high quality service-learning programs are implemented, they can improve test scores and student attendance as well as improve school culture and decrease the number of disciplinary referrals (Billig, 2010).

Furthermore, Billig (2010) states, “when done well, service-learning leads to greater student civic engagement, more socially responsible behavior, and greater self-efficacy” (p. 28).

The Corporation for National and Community Service (2004) compiled a summary which presented findings regarding service-learning that include ways that learning can be applied to real-life applications, ways to help teens feel that their schoolwork is significant, valuable, and worthy of their efforts, and opportunities to increase student choice in their own learning. Through project-based service-learning, teachers can assign challenging but achievable objectives, stimulate student curiosity about the topic studied, and design projects that allow young adults to share new knowledge with others’ learning (National & Community Service, 2004). Students involved in extending service-learning programs also reported an increase in civic and community engagement (Spring, Diets, & Grimm, 2006).

In order for service-learning to be effective, it must be linked to specific objectives, a content area, or academic purpose; if it is not, it might be considered as community service. In addition, it should address a real community need, so pupils see the fruits of their efforts. Service-learning goals must be measurable and the effects of student efforts must be quantifiable. Lastly, adolescents must be engaged in learning activities where they investigate community problems, identify which needs they should address, develop a plan, implement the service, and reflect on the impact they have made (Billig, 2010).

Kaye (2010) offers various examples of effective service-learning activities. At High Tech Media Arts high school in San Diego, CA, humanities and science teachers

instructed their students to conduct sophisticated water testing and to develop media campaigns to encourage greater public participation in water conservation and protection. In another example, Advanced Placement (AP) American History pupils in Albion, NY, dressed in period costumes and led 700 local residents on ghost tours in the cemetery to connect the past with present and build community knowledge and pride (Kaye, 2010).

In additional examples, high school teenagers prepared 600 tax returns for low-income families free of charge and maximized their “school to career” studies through community participation by developing a business plan with community partners to renovate and operate a local theater’s concession area that had sat idle for 20 years (Kaye, 2010).

In March 2006, researchers invited students from St. Lawrence University (Canton, NY) to Los Angeles to participate in an anti-bullying service-learning project. In this study, subjects spent three days training to facilitate bullying prevention and intervention in three inner city LA schools. Those subjects then worked with approximately 800 elementary school children on bullying prevention and school climate. The researchers of this study collected qualitative data. The data was collected through oral reports at the end of each classroom session with students the end of their program. The results indicated an improvement in EI in the participants, specifically in their abilities to empathize. The subjects also gained transformational leadership skills through the connection they made with the elementary students (Scharff, 2009).

Service-learning that is not linked to academic outcomes is not authentic and does not provide students opportunities to be involved in true civic engagement (Barton & Reed, 2010). According to Barton and Reed (2010), Levine, director of the Center for

Information and Research on Civic Learning and Engagement, also emphasized that service-learning need to be a planned activity and not simply a requirement. Barton and Reed (2010) contend that children perform better academically in school when they are exposed to civic engagement as part of the overall learning.

Teachers implement authentic service-learning in their classrooms when administrators and school leaders support their efforts through an allocation of resources and meaningful professional development. Administrators must support teachers in their exploration of service-learning and its potential for learning outcomes. Furthermore, school administrators must encourage reflective practices, since service-learning presents many hidden learning experiences for pupils and teaching staff. Administrators can also advance teacher practice by setting guidelines that help teachers understand how far children can grow emotionally when experiencing service-learning (Townsend, 2010). School administrators need to encourage professional development and collegiality and should provide opportunities for teachers to learn more about incorporating service-learning into the curriculum (Billig, 2010; Townsend, 2010). Lastly, Kaye (2010) offers an exemplar from Preble High in Green Bay, WI. In this study, teens wrote a book about their community and shared their narratives with a worldwide audience through *In Our Global Village*, an international program to increase awareness and tolerance.

The research in service-learning clearly indicates its value in promoting collaborations amongst students, in developing emotional capacities in young adults, and in providing opportunities for students to form strong bonds to the community. Researchers have linked socio-emotional development to service-learning outcomes in many of the aforementioned studies (Billig, 2010; Kaye, 2010; Townsend, 2010).

The National Youth Leadership Council (2008) indicates that teachers should implement service-learning projects that are long-term and aligned to academic objectives. Authentic service-learning should also foster reciprocal partnerships that build strong relationships and improve community relationships with the school. Finally, progress monitoring systems must also be embedded to help students track progress and to validate their work (The National Youth Leadership Council, 2008).

According to a report by the National Youth Leadership Council (2008), there is evidence that quality service-learning can contribute to civic literacy, the ability to participate in and contribute to the dynamics of a class, a neighborhood, or a community. Service-learning can also promote social literacy, the ability to differentiate appropriate behavior for a variety of settings and populations and cultural literacy, which is the ability to be tolerant and understand the similar and different behaviors and attitudes, backgrounds, and lifestyles (National Youth Leadership Council, 2008).

Summary

The literature supports a linkage between EI, academic achievement, and civic mindedness. Although there is evidence that service-learning can influence emotional development, studies on service-learning implemented at the middle and high school levels are limited. Research supports the assumption that service-learning can promote EI. In this companion dissertation, we examined the correlation between service-learning and its impact on EI in the middle and high school settings (Billig, 2010; Kaye, 2010; Townsend, 2010). In the next chapter, we present the methodological approach for this study.

Chapter III

Methodology

In this chapter, we provide the framework for the methodological approach as well as describe the research design, sampling schemes, data collection and analysis techniques, the instrumentation and its reliability, the settings, and curriculum design. We conducted this study as a companion dissertation using the *evaluation model*, which employs the same agenda per researcher but with varied samples. Additionally, the evaluation model allowed for the use of a common research design, instrumentation, and data analysis systems (McNamara et al., 2006). The purpose of this study was to determine the impact of service-learning on emotional intelligence. The research questions were as follows:

1. Is there a relationship between engagement in service-learning activities and EI development?
2. Is there a difference in EI development as a result of service-learning based upon gender?
3. Is there a difference in EI development as a result of service-learning based upon age?

Research Design

We conducted this study utilizing a quasi-experimental design with quantitative methodologies. To reduce threats to validity, generalizability, and reliability, a field-tested instrument was selected which utilized a nonequivalent multiple group design, which required a pretest, application of treatment, and posttest for control and treatment groups (Trochim, 2006). Further, we followed an interrupted time-series design,

involving multiple pretests and posttests at varying time intervals (see Table 1). The rationale for this design is to collect quantitative data to test our hypothesis while eliminating any internal invalidity threats due to the study design (Gay & Airasian, 2000).

Table 1: *Interrupted time series with non-equivalent multiple group design*

	Pre- Test Score	Pre- Test Score		X		Post- Test Score	Post- Test Score		
Experimental	0 ₁	0 ₂	0 ₃	0 ₄		0 ₁	0 ₂	0 ₃	0 ₄
Control	0 ₅	0 ₆	0 ₇	0 ₈		0 ₅	0 ₆	0 ₇	0 ₈

Note. Created based on design theories from *Experimental and quasi-experimental designs for Generalized causal inference* by Shadish, Cook, & Campell, 2011.

The purpose of this form of quasi-experiment is to control for history effects and regression toward the mean (Shadish, Cook, & Campell, 2011).

To further minimize threats to validity, the treatment was administered in two settings, one middle, and one high school site. The middle school researcher administered the pretest/posttest design at two time intervals to treatment and control groups for each site. The target size for each group was 20 participants. For the middle school site, four social studies classes were sampled, and for the high school site, five multi-grade art classes were sampled. Treatment groups were exposed to curricula that blended

philanthropic activities with the pre-established district course curricula. Teachers administered a pre and post emotional intelligence survey, TEIQue-ASF, at the onset and after participation in the service-learning activities. Additionally, teachers administered pre and post assessments to the control group for each course. These subjects did not participate in service-learning activities. We conducted this quasi-experiment using an interrupted time series during the first and second academic quarters in the fall of 2013. Treatment and control groups received the pre and post assessments concurrently, both before treatment and after the service-learning experience. Control groups at each site did not receive the treatment curricula, but rather participated in the traditional course content without the service-learning portion of this study.

Sample Schemes

By design, this quasi-experiment lacks random assignment of both the treatment and control groups. We used a simple cluster sampling scheme to select treatment and control groups, whereby specific groups, not individuals, were randomly selected from clusters of social studies and art course both the middle and high school sites (Gay & Airasian, 2000, p. 130). We selected this approach as a result of resources available to us and the accessibility of participants. To ensure validity, target sample size for each treatment and control group was 20 participants to enhance generalizability of study findings (Gay & Airasian, 2000). While we met the minimum number of participants in this study, generalizability of the findings must be approached with caution. These samples were selected because of accessibility. Content areas subject to high stakes testing such as mathematics, science, and languages arts were not available to us for the purposes of this study.

Participants

Participants for this study included a population of 110 middle and high school students, ages 13-18, who attend public school in a suburban and urban rim school setting in New Jersey. Sixty-three of the participants were female and 47 were male. Ten percent of the participants identify themselves as Asian, 24% as Black (not Hispanic), 8% as Hispanic, and 67% as White. Forty of the participants were in the control groups and 60 in the experimental groups.

Data Collection Methods

To gain access to student populations for data collection, we formally (in writing) approached gatekeepers of each site, e.g., building level administrators, superintendents, boards of education and parents (appendices C, D, and E). As per board policies, formal requests, in writing, were made to conduct research in the two sites. Once consent was given, parental consent was collected for all subjects. The questionnaires were distributed, administered, and collected by us, the researchers, during the art and history class sessions for each identified control and experimental groups. Student participants were instructed to record their names on the back of their questionnaires and were given brief instructions on how to complete the questionnaires. Student participants were given twenty minutes to complete the questionnaire.

After the first administration, each student was assigned a coded number and the researchers worked from coded sheets and surveys for data analysis purposes. The questionnaires were not discussed and collected at the end of twenty minutes administration. The data was entered into SPSS and sent to the Psychometric Laboratory at the University College London to be scored. For the second administration, the we

returned to the same class periods and re-administered the questionnaire, providing brief instruction and twenty minutes for completion. The questionnaires were not discussed and were collected at the end of administration. Students again recorded their names on the back of the survey for the second administration which were later coded for data analysis purposes. The data for the second administration was also entered into SPSS and sent to the Psychometric Laboratory at the University College London to be scored. Questionnaire results were provided to the subjects upon request. We worked from coded spreadsheets of the data to maintain confidentiality and validity of the study. This data collection protocol was selected as it is in alignment with Gay and Airasian (2000) in conducting research using a questionnaire, self-report instrument.

Instrumentation

We utilized the TEIQue-ASF (see appendix H), to measure emotional aptitude during the pre and posttest applications. TEIQue-ASF is a simplified version of the longer Trait Emotional Intelligence Questionnaire full form. TEIQue-ASF consists of 30 statements and measures global trait EI in adolescents target ages 13-17 (Frederickson, Petrides, & Simmonds, 2012, p. 165). This survey is comprised of 30 statements and items therein represent two each of the 16 facets in Table 1 (Petrides, 2009).

Researchers designed this instrument using trait EI theory, the paradigm of perceptions and dispositions of respondents (Petrides, 2009). TEIQue-ASF is a valid indicator of trait EI insofar as the respondents are truthful in their answers to items. The instrument requires subjects to respond to items based on a 7-point scale, which is “deemed desirable psychometrically” (Petrides, 2009, p. 9). The TEIQue-ASF survey has an adequate alpha in both male and female samples and adequate internal consistencies

according to Cronbach theories as cited by Petrides (2009), the overall “attenuated stability coefficient for the TEIQue-ASF was .79, $p < .01$ ” (p. 21). Much data have been accumulated that supports the validity of the TEIQue-ASF psychometric instrument (Ferrando et al., 2011; Hurry, Mikolajcza, & Petrides, 2009; Jellesma et al., 2011; Mavroveli et al., 2007; Williams, Daley, Burnside & Hammond-Rowley, 2009). This tool is widely used to measure trait EI in adolescents with high levels of validity and reliability in school settings.

Table 2: Domains of Trait Emotional Intelligence

Facets	High Scores Self-Perception in that they are:
Adaptability	Flexible and willing to adapt to new conditions.
Assertiveness	Forthright, frank, and willing to stand up for one's rights.
Emotional expression	Capable of communicating one's feelings.
Emotional management	Able to influence the feelings of others.
Emotional perception (Self and others)	Clear view of one's own and other's feelings.
Emotional regulation	Capable of controlling one's own emotions.
Impulsiveness (low)	Reflective and less likely to give in to urges.
Relationships	Capable of maintaining fulfilling personal relationships.
Self-esteem	Successful and self-confident.
Self-motivation	Driven and unlikely to give up in the face of adversity.
Social awareness	Accomplished networkers with superior social skills.
Stress management	Capable of withstanding pressure and regulating stress.
Trait empathy	Capable of taking someone else's perspective.
Trait happiness	Cheerful and satisfied with their lives.
Trait optimism	Confident and likely to "look on the bright side" of life.

Note. Reprinted from *Trait Emotional Intelligence Questionnaire (TEIQue) Technical Manual* by K. V. Petrides, p. 14.

The TEIQue-ASF can be administered in paper and pencil form or online.

Administration took approximately 20 minutes, and individual participants were

encouraged to complete the questionnaire quickly without giving extraneous thought to responses and in relative isolation from each other. In the case of multiple administrations, it is important not to discuss the questionnaire with the participants (Petrides, 2009). As a result, no counseling or discussion of the performance on the first administration occurred with participants in this study. Consistent with Fowler (1995), we also notified the guidance counselors at both school sites of survey administration so they can support students as needed and to be sensitive to any negative reactions to the statements in the instrument.

Ethical Issues

To protect the confidentiality of the participants and school sites, the names of participants and sample sites are not included in the description of this study. We conveyed in a letter to parents of the subjects that the identities of the subjects would not be revealed unless required by law. All data relating to this study was maintained in a password-protected file, on a password-protected computer, and in a locked file cabinet. Copies of student surveys were kept in a locking file cabinet and data in a password-protected computer. To maintain anonymity of the participants, a coding system was devised and we worked from coded spreadsheets. The original spreadsheets that contained participant information were destroyed prior to the second test administration and data analysis. We did not coerce subjects nor were their grades affected due to participation or opting out of this research study. Students who opted out of the study were provided alternative projects that were traditional in nature and not tied to service-learning activities nor did they take part in the pre and post surveys.

Data Analysis and Interpretation

As a result, data from the two sample sites were disaggregated to determine what gender and age differences can be identified. To test our assumption that there is a relationship between service-learning and trait EI we used inferential statistical analyses. We ran t-tests to determine the difference of the means of two populations. In the case of the sample groups, samples were paired to make comparisons. We examined the pre and post-global trait EI scores of each student in the control and treatment groups. Mandel (1964) recommends the matched t-test to compare two measurements taken on the same individual or dependent data sets. Data were collected from individuals in treatment classes and control classes taking a pre and posttests using TEIQue-ASF instrument. We ran additional t-tests to determine the difference in data in terms of gender and age. Excel was used to perform the t-test analyses. Further discussion of analysis and interpretation is provided in Chapter 4.

Middle School Sample Site

The middle school site was a grade 6-8 public school located in suburban, New Jersey. The school is located in a high achieving public school district. During the time of this study, the State of New Jersey classified public school districts by fiscal wealth of the community, called the District Factor Group (DFG). This is an ascending alpha rating system from A-I, with “A” being the most impoverished and “I” being the most affluent. The middle school site was an “I” district. Total school population is approximately 869 sixth, seventh and eighth graders. The demographic makeup of the student body is as follows: 8% Asian, 2% Black, 3% Hispanic, and 87% Caucasian; 48% are female and

52% are male. Only 1% of the population at the middle school receives free or reduced lunch (NJ DOE Report Card, 2012).

Team teaching is the cornerstone of academic programing at Suburban Middle school. Four core content area teams comprise each grade level and the teachers on those teams provide instruction in mathematics, science, language arts, and social studies. Team teachers also work collaboratively to provide instructional opportunities in socio-emotional learning and character education. Teachers deliver these lessons during an advisory period designed to involve middle school learners in activities that emphasize life skills like organization, decision-making, and civic duty. The middle school researcher purposefully selected treatment and control groups from eight team social studies sections for class size, teacher level of mastery, and ease of incorporating a service-learning component into the class curriculum. Teachers for the treatment groups implemented a service-learning curriculum that was designed with our collaboration using the UbD and service leaning frameworks. The middle school researcher worked in collaboration with the participating teachers to design curricula aligned to core content standards, content area standards, and the districts' pre-determined course content. Both the control and treatment groups received the pre and posttests. Data were collected over the 12-week cycle in the fall semester of 2013. Teachers administered the TEIQue-ASF instrument to 37 participants (18 males and 19 females) in the experimental group and 23 subjects (12 males and 11 females) in the control group. Teachers exposed only participants in the experimental group to the service-learning curriculum. Subjects were between the ages of 13 and 14.

High School Sample Site

The high school is a 9-12 public school institution located in an urban rim setting in New Jersey. The high School's DFG category is "DE" according to the NJ Department of Education Report Cards, which identifies a designation of "A" being the most economically disadvantaged of New Jersey Public Schools and "T" the most affluent (2012). The high School services grades 9-12. The total school population is approximately 1150 children. Fifty two percent of the student body identify Black, 34% as Caucasian, 11% identify as Hispanic, and 3% as Asian. 35% of the high School's population receives free or reduced lunch according to NJ Department of Education Report Cards (2012).

At the High School, the high school researcher sampled two Art I classes, grades 9-12. Urban Rim High has a traditional school configuration and academic programming and does not have advisory or character education as part of the school wide curriculum. She collected data for a 12-week cycle during the fall and winter semesters of 2013. Treatment and control groups were purposefully selected from two Art I class sections for class size, teacher level of mastery, and ease of incorporating a service-learning component into the class curriculum. Teachers instructed treatment groups using the service-learning curriculum while the other groups were not exposed to the service-learning curriculum. Both the control and treatment groups received the pre and posttests. The TEIQue-ASF instrument was administered to 27 participants (11 males and 16 females) in the control groups and 23 (4 males and 19 females) in the experimental groups. Teachers only exposed those students in the experimental group to the service-learning curriculum. Subjects were between the ages of 14 and 18.

Curriculum Design

The high school curriculum for this 12-week treatment was designed utilizing the principles of Wiggins and McTighe's (2011) *Understanding by Design* in collaboration with the classroom teachers implementing the curriculum. Understanding by Design (UbD) is based upon the ideology that curricula should be developed based upon theories of the centralization of teaching, learning, assessment and curriculum writing (Wiggins & McTighe, 2011). Principles of UbD include designing curriculum that encourages "purposeful thinking" and not rigid programmatic structures. The primary goal of curricula is to "deepen" student understanding and their ability to make meaning through the concept of "big ideas" that teach transferable knowledge, which can be transferred across content areas and have real world applications. UbD grounds learning goals in (core) content standards. Wiggins and McTighe (2011) contend that student understanding is measured and assessed through their participation in authentic learning activities that require them to apply learning in real world scenarios, specifically the learners' "capacities to explain, interpret, apply, shift perspective, empathize, and self-assess" as direct indicators of learning (p. 4).

Curricula designed using UbD, or "backward design", follow a three stage process: stage one is to identify the desired outcome, stage two is determination of evidence, and stage three is the planning of experiences and instruction to take place (Wiggins & McTighe, 2011). Educators call this methodology of curriculum writing UbD in that the curriculum developers begin the process at the end, identifying desired outcomes, and work backward toward activities that bring about these desired learning outcomes. Working in collaboration with the teachers, we planned lessons in *units*, larger

blocks of themed-based learning as opposed to the traditional week-to-week, day-to-day planning of learning. The UBD framework was selected as it was the board-approved model for both school sites, and the recommend model for the State of New Jersey. Examples of the service-learning activities are provided in appendices A and B.

Course Content

When educators use the UbD for curriculum development, they focus designing learning activities that help teens meet defined learning targets and acquire specific skills that are applicable to real world situations, defined as *transfer* (Wiggins & McTighe, 2011). Wiggins and McTighe (2011) state that, “transfer goals highlight the effective uses of understanding, knowledge, and skill we seek in the long run...what we want young adults to be able to do when they confront new challenges,” both in the classroom setting and beyond (p. 65). This is based upon the assumption that students construct meaning through their manipulation and or application of new knowledge and skills. Lattuca (2006) discusses how children learn by taking in new knowledge and transforming it in different and creative ways. This idea of constructivism also grounds what researchers define as meaningful or authentic service-learning experiences for teenagers.

Additionally, to truly assess or measure whether or not learners have attained new knowledge or skills, teachers must create assessments that require that pupils demonstrate what they learn in authentic ways that are project-based and solve real world problems (Wiggins & McTighe, 2011). Project-based learning must include the following components: in-depth inquiry guided by a driving question, relevance to students’ lives, the opportunity to express voice and choice, the opportunity to reflect and revise project goals, and a culminating final product that is published/presented to a public audience.

We designed the service-learning curricula using the tenets of UbD and service-learning theories, the core content standards as adopted by the New Jersey Department of Education as well as the state adopted Common Core Standards and 21st Century Skills (see Appendix F).

During the development of the service-learning activities, we used the five components of service-learning as defined by Stringfellow and Edmonds-Behrend (2013). This model state that service-learning should include investigation, planning, action on the part of students, reflection, and the demonstration and/or celebration of the activities' end (Stringfellow & Edmonds-Behrend, 2013, p. 44). Additionally, we made sure to design authentic service leaning linked to academic learning goals (Manring, 2012). These activities afforded students the opportunity to reflect on their learning, maintain their diversity and voices, form community partnership, and utilize progress-monitoring systems to determine their success.

Middle School Course Content

Participants in the experimental groups spent 52 minutes bi-weekly of class time engaging in service-learning over the course of 12 weeks during the first and second quarters of the 2013-2014 school year. Teachers implemented the service-learning curriculum to the 37 subjects. The middle school researcher worked in collaboration with two 8th grade social studies teachers on two separate academic teams to develop the service-learning curriculum. The middle school researcher selected a unit of study from the district's approved 8th grade social studies curriculum, which was a unit on the American Constitution. To ensure the participating social studies teachers did not veer from the pacing guide of the district, teachers agreed to work within the timeline of

curriculum implementation and to adapt/enhance the Constitution unit by including a culminating service-learning project that aligned with the course of study, New Jersey Core Content, 21st Century Skills and Common Core Standards.

A search of a national service-learning clearinghouse, SLICE, provided us with the framework for the service-learning project: a student designed and implemented Constitution Fair. Students created an interactive experience for youngsters in a nearby elementary school to teach the constitution and its current relevance to United States citizens. The social studies teachers continued parallel instruction of the Constitution to participants in the control groups without the implementation of the service-learning project. Thus, the control groups did not participate in the service-learning activities as a culminating activity but rather completed group research and presented via power point presentation to their classmates.

Based on the principles of service-learning design, teachers presented the subjects with the prospect of creating a Constitution Fair for the community as an alternative to the traditional long-term project. Participants were given the choice to present to community members (parents and seniors in the community), peers within their own school community (other 8th graders not participating in the study), or elementary children within the district. The 8th grade participants elected to create their Constitution Fair for local elementary fifth graders who would be learning about the constitution in the spring. In this way, the students provided a service to fifth graders who would be learning about the American Constitution in the spring of 2014. The participants also believed that they would be providing support to the elementary teachers by facilitating a preview, or pre-teaching of information to the younger children.

The eighth graders also took a Learning Styles Inventory (see appendix G). The teacher then followed the activities with a class discussion about their results, the diversity of their preferred learning styles, and the implications on the construction of a Constitution Fair for fifth graders. Next, subjects received some direct instruction regarding the formation of the Constitution. Through class lectures and independent research both within and outside of the classroom, students began to gather information that they needed. The teachers placed participants into collaborative groups and assigned a topic to teach. Subjects were required to determine their target audience within the community and to make contact with them, to identify needed supplies, and to create interactive booths/activities for the Fair. The participants decided to work in partnership with the smallest elementary school as they felt this would be the most manageable.

The subjects were required to provide the content and activities for the Fair while taking into consideration the variety of learning styles of the fifth graders. The teachers had participants plan their interactive booths using Bloom's Taxonomy, a hierarchy of low and high level learning. The subjects were encouraged to use the highest levels of Bloom's Taxonomy for their learning activities. Students also selected prizes and the overall layout for the Constitution Fair.

This activity required the subjects to empathize with their Constitution Fair participants. They were encouraged to recall how they were as fifth graders and what they found engaging at that age. They also needed to consider what the 5th grade teachers might want them to cover in their Fair and how the fifth graders would rotate through the experience. The day of the Constitution Fair, the fifth graders and their teachers were bussed from the nearby elementary school. Eighth Graders hosted and facilitated the

activities and booths in the Fair over a 52-minute timeframe. At the end of the Fair and once the fifth graders had departed, the eighth graders participated in a large group discussion during which they reflected on the experience. Many shared that they felt a sense of pride in their work, that they really needed to know the material in order to teach it to someone else, and that they could relate to how hard it was to be a teacher. Afterwards, teachers held a celebration in class in recognition of their accomplishments.

High School Course Content

Participants in the experimental groups spent 80 minutes bi-weekly of class time engaging in service-learning over the course of 12 weeks during the first and second quarters of the 2013-2014 school year. Teachers administered the service-learning curriculum to the 23 subjects. The high school researcher worked in collaboration with one art teacher to develop the service-learning curriculum. The teachers selected a unit of study from the district's approved high school crafts and ceramics curriculum to integrate the service-learning activities. To ensure the participating art teacher did not veer from the pacing guide of the district, the teachers agreed to work within the timeline of curriculum implementation and to adapt/enhance the art units by including a culminating service-learning project that aligned with the course of study, New Jersey Core Content, 21st Century Skills and Common Core Standards.

Empty Bowls, a national effort led by Artists to Feed the Hungry created by The Imagine Render group, provided us with the framework for the service-learning project, a student designed and implemented *Empty Bowls* luncheon. Although *Empty Bowls* provided us the framework, teachers designed the activities with the students' participation culminating activity in the luncheon. Participants created artwork to donate

during a luncheon in order to raise money for the hungry. Two different art teachers continued art instruction to subjects in the control groups without the implementation of the service-learning project. Thus, the control groups did not participate in the service-learning activities as a culminating activity but rather just learned about and created various pieces of artwork.

Based upon the principles of service-learning design, teachers presented participants with the prospect of raising money for the hungry. Subjects were given the choice to research organizations or countries in need of support, presented their ideas to the class, and voted on whom they wanted to donate the money. The students decided to donate their money to two organizations that feed the hungry: *Neighbors Together* in Brooklyn and *Syrian Expatriates* in Syria. In this way, the subjects provided a service to those that are in need of food and other provisions and are not part of their immediate community.

The high school subjects participated in a variety of activities. The first activity they did was to view media via YouTube and videos such as *Hunger No More*. Teachers facilitated Socratic seminars and open classroom discussions about the hungry and the essential idea of doing a service for others. In addition, they completed handouts and other activities that focused on the meaning of community service, service-learning, and empathy. They also participated in many days of research about the needy communities who suffer from hunger and poverty, which they shared with their classmates later. In conjunction with those activities, participants received some direct instruction regarding the elements and structure of Native American Art work and pottery.

In culmination, the subjects created handcrafted bowls, goblets, and other artwork in the style of the Native American tradition and chose their best pieces to donate to The *Empty Bowls* luncheon. Participants were responsible for the catering of the luncheon as well as set up and clean-up after the event festivities. Participants invited guests to a simple meal. In exchange for a cash donation, guests were asked to keep a bowl (or in this case, a bowl or another piece of artwork) as a reminder of all the *Empty Bowls* in the world. Participants then donated the money raised to an organization working to end hunger and food insecurity, accompanied by a letter from the students delineating their experiences about the process of raising and donating the money to the organization. Participants in this study raised over three hundred dollars during their luncheon.

Summary

Authentic service-learning must include opportunities for learners to find a problem in their community, create a solution, plan for the implementation of the solution, and present the solution to the community. We designed the service-learning activities for this study based on these components in mind. Additionally, teachers integrated the learning activities into the pre-existing course content in the schools, social studies, and art. In the next chapter, we discuss the data analysis and present the findings from this quasi-experiment.

Chapter IV

Results

For this study, we worked at a public high school and a public middle school site. We instructed the teachers on the principles of service-learning through presentations and article studies and co-wrote the curricula which they implemented in the classes identified as experimental groups. A cluster sample of class sections were selected from sections of social studies in a middle school and art in a high school setting. Teachers integrated the service-learning into the classroom experience for participants in the experimental groups. Subjects were exposed to service-learning during two 52 minutes biweekly sessions for 12 weeks at the middle school and 82 minute biweekly for 12 weeks at high school. The control group had no such instruction. In this chapter, we provide a review the methodology and data analysis process used for this study.

Methods

Two classes, taught by two different teachers, totaling 37 pupils at the middle school were randomly selected to receive the service-learning curriculum, and two classes, totaling 23 participants taught by the same two teachers, were randomly selected and not exposed to the curriculum. At the high school, two Art I classes, taught by one teacher, 23 participants received the service-learning curriculum. Two classes, totaling 27 participants taught by the same teacher, were randomly selected and were not exposed to the curriculum. Using the cluster sampling method, we isolated the population of interest and to divide it into smaller groups in both sites. A random sample of clusters was then selected from sections of art classes in the high school and social studies classes in the middle school.

Prior to the start of the Service-learning curriculum, participants took the TEIQue-ASF, the Trait Emotional Intelligence Questionnaire – Adolescent Short Form. The TEIQue-ASF is a scientific measurement instrument based on Trait Emotional Intelligence theory. Participants completed this 30 question “short form,” and an independent evaluator tabulated the results (The London Psychometric Laboratory). During the analysis, scores were averaged by student, and scores averaged for the control and treatment groups at both the middle school and the high school. Scores and specific domains of Emotional Intelligence (EI) that were calculated included global trait EI score, well-being, self-control, emotionality, and sociability.

After the conclusion of the 12-week service-learning treatment, the same participants retook the TEIQue-ASF. By tabulating these post-exposure scores for the same individual, we postulated that the global trait EI score would be most impacted by exposure to the curricula. Using of student identifier codes, we matched an individual student’s pre-scores with the corresponding posttest scores. Using this methodology, the data was examined for a statistically significant difference, or impact/change, in the subjects who engaged in the service-learning curricula versus those that did not.

Each student’s pretest score was subtracted from his or her posttest score, across the domains of trait EI that were analyzed, as well as a similar analysis of the total score differentials, global trait EI. Utilizing these differences, we ran statistical tests to assess whether the differences (Post-Pre) were statistically significantly different from zero (no difference). We compared the classes that were randomly selected to be exposed to the service-learning curriculum with those that were not exposed to this material in order to test the hypothesis that service-learning can influence EI in adolescents.

Results: Post-Pretest Inference Results

At a standard alpha value of 0.05, we looked for statistically significant t-test statistics. We also ran a series of t-tests comparing the differences between Posttest score and Pretest scores for the experimental group, the participants were exposed to the service-learning curriculum, and the control group, those who did not receive instruction in the curriculum.

Table 3: Comparison of Post-Pre Treatment Scores across Control/Treatment Groups

Average Differences Post - Pre	Global Trait EI	Well-Being	Self - Control	Emotionality	Sociability
Control Means	0.19	0.17	0.18	0.23	0.19
Treatment Means	0.02	(0.15)	0.18	(0.07)	0.12
Std Deviation of the Differences Post-Pre	Global Trait EI	Well- Being	Self- Control	Emotionality	Sociability
Control SD	0.45248	0.813643	0.684355	0.651879	0.605655
Treatment SD	0.435352	0.848513	0.74538	0.580377	0.782582
Total sample size	N				
Control	50				
Treatment	60				

We observed that the mean scores for the 50 participants in the control group (those not exposed to the curriculum) who completed both post and pretest assessment instruments *increased*. Furthermore, their scores increased across all domains of Emotional Intelligence. We cannot say the same for those in the experimental group. While there was an increase in the global trait EI scores of the experimental groups, this increase was not significant (0.02). In the domains of Well-Being and Emotionality, a decrease in the TEIQue-ASF average scores were observed.

Table 4: Analysis of Post-Pre Test Control and Treatment Groups

CONTROL GROUP:

Average Differences Post - Pre	Global Trait EI	Well-Being	Self-Control	Emotionality	Sociability
Control Means	0.19	0.17	0.18	0.23	0.19
Control Standard Deviations	0.45248	0.813643	0.684355	0.651879	0.605655
T-Statistic (two-tailed)	2.97	1.48	1.86	2.49	2.22
P-Value	0.004*	0.15	0.069	0.016*	0.031*

Note. Statistically significant results $\alpha = 0.05^*$

TREATMENT GROUP:

Average Differences Post - Pre	Global Trait EI	Well-Being	Self-Control	Emotionality	Sociability
Treatment Means	0.02	(0.15)	0.18	(0.07)	0.12
Treatment Standard Deviations	0.435352	0.848513	0.74538	0.580377	0.782582
T-Statistic (two-tailed)	0.3558	-1.37	1.87	-0.934	1.19
P-Value	0.72	0.176	0.066	0.354	0.24

Among the control group, the total differences, as well as the differences in the domains of Emotionality and Sociability, saw a significant increase. We cannot attribute this increase to random variation.

Among the treatment group, those who received the service-learning curriculum, increase in total TEIQue-ASF scores was found, as well as the scores in the domains of Self-Control and Sociability, although these increases were insignificant. We noticed a decrease (posttest – pretest) in the scores over the domains of Well-Being and Emotionality. None of these changes, however, were statistically significant, unlikely to occur by chance, $\alpha = 0.05$, and therefore may be merely attributable to random variation.

Thus, we observed that the control group arithmetic mean score differences on the assessment instrument differed from zero in both total score, and in two of four domains of emotional intelligence in a statistically significant way. The treatment group observed no such meaningful differences. Next, the data was disaggregated and analyzed by age and gender.

Comparing Groups: Treatment vs. Control across Strata – Schools

We observed a statistically significant increase in the mean scores on the assessment instrument among the control group and no such increase in the group exposed to a service-learning curriculum. We identified trends and significant differences by comparing the change in (post – pre) test scores between the two groups through a series of two-sample t-tests. This test compared means and considered whether the difference between the scores were statistically significant, meaningfully different from zero.

Table 5: Average and Standard Deviation of Differences Post-Pre

Average Differences Post – Pre	
Control Means	0.19
Experimental Means	0.02
Std Deviation of the Differences Post-Pre	
Control SD	0.45248
Experimental SD	0.435352
Total sample size	N
Control	50
Experimental	60
Two Sample T-Statistics	
T-Statistics ($df = 102.90$)	1.996
p-value	0.049

We observed that with a statistically significant p-value ($\alpha = 0.05$), there was a difference between the control group and the treatment group. The difference observed between the two-group responses on the assessment instrument indicated a significant increase (posttest – pretest scores). The control group not only scores higher; this difference cannot be attributed to random chance. Next, we considered the differences in the statistics by breaking the data down into sub-groups, or strata. Among the high school students, there was almost no difference between the posttest – pretest scores between the two groups.

Table 6: *High School Post-Pretest Comparison*

High School Students (n=50):		
	Control Group	Treatment Group
Mean	0.041851852	0.043913
Variance	0.211105413	0.131729

Among the 50 high school students in the study, there was a nearly identical increase of about 0.04 in TEIQue-ASF scores over the period of the study. This result is not statistically significant, two sample t-test p-value = 0.986. Analysis of the treatment group indicated no significant change.

Table 7: *Middle School Post-Pretest Comparison*

Middle School Students (n=60):		
	Treatment Group	Control Group
Mean	0.005675676	0.367246
Variance	0.229544361	0.146744

Note. Two sample t-test p-value: 0.00167

In contrast to the sample of students from the high school, among the middle school students, we saw a statistically significant difference. An increase in the average score difference among the control group was found and no such difference among those in the group exposed to the curriculum at the middle school. An interpretation of this p-

value, of a two-sample t-test, is that there is a 0.00167 probability, less than two tenths of one percent likelihood, that we would observe a difference such as the one observed.

For the high school students in the treatment group, some domains of emotional intelligence saw increases in TEIQue-ASF as compared to those students in the control group. Others saw decreases, or small increases. As mentioned above, the overall mean difference was not significant.

Table 8: *High School Students TEIQue-ASF Difference across EI Domains*

	Global Trait EI	Well-Being	Self-Control	Emotionality	Sociability
Average Difference					
Control Group	0.04	(0.00)	0.01	0.08	0.04
Average Difference					
Experimental Group	0.04	(0.02)	0.14	0.03	0.20

Among the middle school students, the control group’s difference in scores exceeded the treatment group’s differences by a significant amount, in two cases showing a statistically significant *increase* while the treatment group showed a significant *decrease* in two domain, Well-Being and Emotionality.

Table 9: *Middle School Students TEIQue-ASF Difference across EI Domains*

	Global Trait EI	Well- Being	Self-Control	Emotionality	Sociability
Average					
Difference					
Control Group	0.37	0.37	0.38	0.41	0.36
Average					
Difference					
Experimental					
Group	0.01	(0.23)	0.20	(0.14)	0.07

The distinctions between the changes in the domain of Well-Being and Emotionality before and after the treatment indicates significant decrease.

Comparing Groups: Treatment vs. Control across Strata – School & Gender

We analyzed the data for differences in gender. The mean scores for boys and girls at the high school and the middle school both for control and treatment groups were compared (see table 10).

Table 10: Average Difference Stratified for Gender

	Tot Diff.	Well - Being Diff.	Self- Control Diff.	Emotionality Diff.	Sociability Diff.
Average Diff. Control					
MALE	0.07	0.06	0.16	0.03	(0.05)
Average Diff. Control					
FEMALE	0.02	(0.04)	(0.10)	0.11	0.11
Treatment MALE	(0.12)	(0.13)	0.04	(0.34)	0.29
Treatment FEMALE	0.08	0.01	0.17	0.11	0.18

Note: High school average differences (posttest – pretest) stratified by gender.

Table 10: Average Difference Stratified for Gender (continued)

	Total Diff.	Well- Being Diff.	Self- Control Diff.	Emotionality Diff.	Sociability Diff.
Average Diff. Control					
MALE	0.37	0.42	0.38	0.31	0.50
Average Diff. Control					
FEMALE	0.36	0.30	0.39	0.57	0.15
Average Diff. Exp.					
MALE	0.15	(0.07)	0.41	(0.07)	0.21
Average Diff. Exp.					
FEMALE	(0.13)	(0.38)	0.01	(0.20)	(0.06)

Note. Middle school average differences (posttest – pretest). Stratified by gender.

When stratified by gender, the student’s test EI scores on the TEIQue-ASF assessment were consistent with the combined scores. Consistently, the students in the control group, those not exposed to the Service-learning curriculum, out-scored, and showed a higher positive post-pretest difference for participants in the treatment group. In many cases, the scores of the pupils who were not in the treatment group increased, while those exposed to the curriculum decreased. This is true for the middle school boys and girls and for the high school boys. However, when segregated, the high school girls saw an increase.

Table 11: *High school Average Difference (Posttest-Pretest)—Female*

	Total Diff.	Well-Being Diff.	Self -Control Diff.	Emotionality Diff.	Sociability Diff.
Average Diff. Control					
FEMALE	0.02	(0.04)	(0.10)	0.11	0.11
Average Diff.					
Treatment FEMALE	0.08	0.01	0.17	0.11	0.18
		Control Group		Treatment Group	
Mean		0.024791667		0.07807	
Variance		0.298524398		0.107118	
Observations		16		19	

Note. Results of two-sample t-test. High school females only control means vs. treatment means. (Posttest – Pretest scores) T-statistic (DF = 33) = -0.356, p-value = 0.3619 (not statistically significant)

While the sample sizes were relatively small, 16 high school girls in the control group and 19 who exposed to the curriculum, the differences were not statistically significant at any reasonable α -level. Unlike every other group in the study, the average difference of their assessment scores *increased* for those exposed to the service-learning curriculum, whereas those who were not exposed to the curriculum uniformly increased *less*, and in two domains of EI, actually *decreased* –again, this decrease was not significant.

Comparing Groups: Treatment vs. Control across Strata – Child’s Age

For the final comparative analysis, we stratified the student’s data by age. While the individual mean results were not conclusive, looking across the ages, a distinct pattern emerges, as the children get older. We did not consider school for this grouping. There were 14-year-olds in both school’s sample, and one 15-year-old in middle school (the rest were from the high school population). All 13-year-olds were in middle school. All 16 through 18-year-olds were in high school.

Table 12: *Comparing Groups across Strata—Age*

	Total Diff.	Well- Being Diff.	Self- Control Diff.	Emotionality Diff.	Sociability Diff.
Average Diff					
Control	0.38	0.32	0.43	0.43	0.34
Average Diff					
Treatment	0.04	(0.13)	0.27	(0.15)	0.13
N = 20 control. N = 25 treatment					

Note. 13-year-olds average difference (pretest-posttest).

Table 12: *Comparing Groups across Strata—Age (continued)*

	Total Diff.	Well- Being Diff.	Self- Control Diff.	Emotionality Diff.	Sociability Diff.
Average Diff.					
Control	0.08	0.30	0.21	(0.10)	0.11
Average Diff.					
Treatment	(0.06)	(0.44)	0.06	(0.08)	(0.06)
N = 11 control. N = 11 treatment					

Note. 14-year-olds average differences (pretest-posttest)

Table 12: *Comparing Groups across Strata—Age* (continued)

	Total Diff.	Well- Being Diff.	Self - Control Diff.	Emotionality Diff.	Sociability Diff.
Average Diff.					
Control	(0.11)	(0.38)	(0.09)	(0.03)	0.21
Average Diff.					
Treatment	(0.02)	(0.08)	(0.28)	0.09	0.00
N = 6 control. N = 7 treatment					

Note. 15-year-olds average differences (pretest-posttests).

Table 12: *Comparing Groups across Strata—Age* (continued)

	Global Trait EI	Well- Being	Self- Control	Emotionality	Sociability
Average Diff.					
Control	0.10	(0.05)	(0.03)	0.27	0.12
Average Diff.					
Treatment	0.09	0.11	0.23	0.04	0.18
N = 13 control. N = 17 treatment					

Note. 16, 17, 18-year-olds average differences (pretest-posttests).

The 13-year-olds in the control group scored consistently, higher both on the total score difference (Post-Pretest) and across the four examined domains of Emotional Intelligence. The same goes for the 14-year-olds, although the difference is a bit less pronounced.

Among the 15-year-old group, we observe the experimental group actually scored a bit higher, with a higher score increase, than the control group. However, the difference is not significant, and we cannot conclusively make a statement about whether 15-year-olds are meaningfully different from their peers at different ages. For the 16 to 18-year-old group, the “older teen” group, we saw no significant change.

While the differences are not statistically significant, no pattern was seen. If adolescents across different ages experience a service-learning curriculum similarly, we did not expect that these teens of different ages would assess themselves similarly. We

found that while some age groups experienced an increase in EI scores, some saw a decrease.

Notably, among older subjects, those in the treatment group saw a significant increase in their scores. In the control group, we observed a steady decrease. The gap in EI change is significant among 13-year-olds.

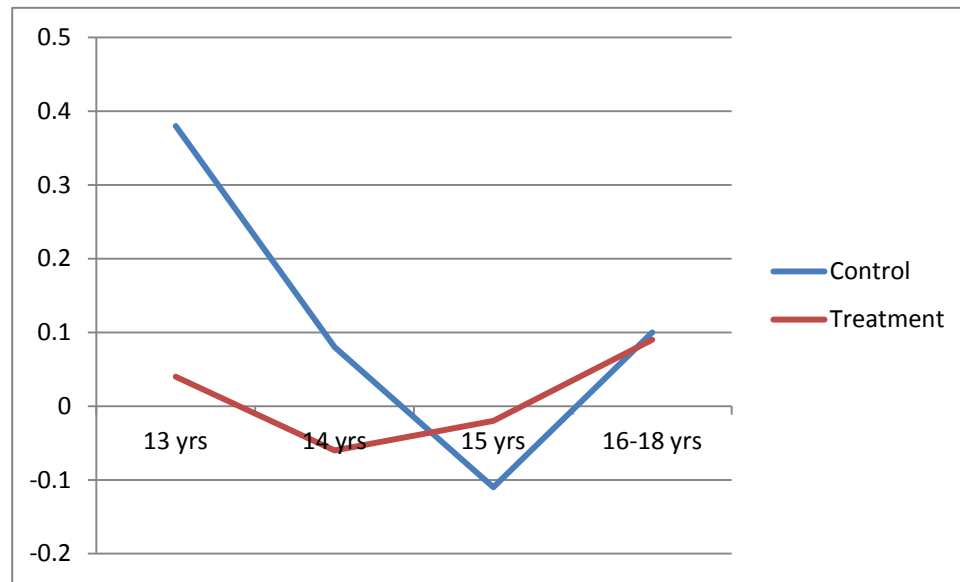


Figure 1: *Chart of Total Differences—Age Group Analysis*

Note. Chart of total differences (pretest-posttest) among four age groups analyzed. We observed a steady increase in the treatment Posttest scores among older subjects. Among the control group not exposed to the curriculum, we observed the opposite trend.

Summary

In summary, among middle school students, we found there was no meaningful distinction between the differences in the data by gender. Boys and girls from the control group scored uniformly higher than boys and girls in the treatment group. Among high school students, the difference in the scores of the boys, control vs. treatment, was insignificant. Among the girls however, the treatment group scored higher than the control group. While not statistically significant, this was the only strata, of the four broken down by gender and school, in which the treatment group outscored the control group. We observed higher overall scores for older children. In chapter five, we present our interpretation of the results of the data analysis and implications for future research, policy, and teacher practice.

Chapter V

Summary, Conclusions, and Recommendations

In this companion dissertation, we examined the impact of service-learning on emotional intelligence (EI) development in middle and high school students. Our intent was to address the problem of a deficiency in EI development in teens ages 13-18 and a lack of curricular programs designed to promote emotional growth in middle and high schools (ASCD, 2007; Charbonneau & Nicol, 2002; Ogunyemi, 2010). EI has become widely considered a predictor for workplace readiness, academic performance, and pro-social behavior in individuals (Goleman, 1998; Petrides, 2011; Mayer et al., 2004). Goleman (1998) suggests that public schools, fixated on academic performance, give little attention to teaching the whole child through meaningful emotional learning activities. Through this study, we examined service-learning as a possible treatment to increase EI in students. The research questions that guided this research were as follows:

1. Is there a relationship between engagement in service-learning activities and EI development?
2. Is there a difference in EI development based upon gender?
3. Is there a difference in EI development based upon age?

This work was conducted in a quasi-experiment, which included the implementation of a 12-week service-learning curriculum in Art and Social Studies. The TEIQue-ASF, a self-reporting emotional intelligence inventory, was used to measure EI growth in the subjects, adolescents between the ages of 13 and 18 years of age. The total sample size for this study was 110 participants. We compared pre and posttests of the subjects in order to identify changes in their global trait EI scores after applying the

treatment of the service-learning. Although the study did not find a correlation between service learning and emotional intelligence, we conclude that school practitioners need to continue to study the benefits that integrating service learning goals into pre-existing curricula may have on enhancing academic achievement and emotional aptitude in adolescents.

Discussion of Findings and Conclusions

The purpose of the study, to determine if there is a relationship between service-learning and EI in teens, was the result of apparent deficits in EI in some of the students we encountered during our time as vice principals. The survey of the literature supported this endeavor as theorists contend there is a correlation between academic achievement, workplace readiness, and the development of emotionally healthy individuals through the vehicle of service-learning (Barton & Reed, 2010; Billig, 2010; Kaye, 2010; Scharff, 2009). Although the findings suggest the need for further research, it is our belief that our findings contribute to the conversation among scholars and educators on EI development and service-learning in the public school setting.

Research Question One

The first research question was to determine if there was relationship between service-learning engagement and EI development. The findings were incongruent with the literature review, which implied a positive relationship (Astin & Sax, 1998; Astin et al, 2000; Barton & Reed, 2010; Billig, 2010; Kaye, 2010; Scharff, 2009; Markus, Howard & King, 1993; Strage, 2000). We saw no significant change in the global trait EI scores of the students at the middle or high school for the treatment group as a result of their engagement in service-learning activities. In some instances, as indicated by the

middle school data, we saw a significant decrease in two domains. The control groups at the middle school saw significant increases in global trait EI for those not exposed to the treatment. The only experimental group that scored higher than their control group was in the high school; however, these increases were insignificant. One rationale for this finding may be the duration of engagement in the service-learning activity. Turner's (2005) work indicated that students who engaged in service-learning for a sustained period of time did increase their emotional intelligence aptitude. Some differences in Turner's research design and our own, e.g. duration of treatment and implementation over multiple cycles, may explain these findings. Service-learning must be implemented over long periods of time in order to promote sustainable change in the participant (Search Institute, 2000).

The Turner (2005) study which employed a similar quasi-experimental design was implemented over a full course of a semester over multiple cycles utilizing the Goleman, Boyatzis & Hay McKee Emotional Competence Inventory (ECI) before and after they engaged in their service-learning projects, which showed promising results in the development of self-awareness, social awareness, self-management, and social skills. In the Turner study (2005), there was significant growth in participants' ability to empathize. Although the increases in the high school treatment group were insignificant, we did note an increase in self-control and sociability, which reflect social awareness, social skills, and self-management and is consistent with Turner's research. This indicates that engagement in service-learning increased the ability for participants to be aware of their emotions and those of others.

While we feel that the quantitative findings on this research question did not fully capture the impact of service-learning on the participants, the informal verbal debrief preceding the Constitution Fair and *Empty Bowls* with the students and teachers indicated an increase in student engagement and higher retention of the course content which they attributed to engagement in the service-learning activities. Likewise, Turner collected statements from her participants based on their change in perception after the service-learning experience which provided additional insight into the impact on the study participants. Adding multiple cycles and qualitative data collection to our protocol may have provided a clearer picture of the participants' growth in emotional aptitude as is suggested for future researchers.

Research Question Two

The second question was to determine if service-learning had an impact on EI development based upon gender. The findings, when the data were disaggregated, were consistent with the literature, with girls showing higher EI growth than boys (Glennon, 2000; Gorostiaga et al., 2011; Thayer, Rossy, Ruiz-Padial, and Johnsen, 2003.) Among High School students, the difference in the scores of the boys (control vs. treatment) was insignificant. Among the girls, however, the treatment group scored higher than the control group. While not statistically significant, this was the only strata of the four broken down by gender and school that the treatment group outscored the control group. While it was not a significant difference, we expected that there may be a higher response in girls versus boys based upon prior research (Glennon, 2000; Gorostiaga et al., 2011; Thayer, Rossy, Ruiz-Padial, and Johnsen, 2003.) However, the fact that it was not a

significant difference may imply that boys can equally be affected by exposure to service-learning experiences as are girls and conversely that girls can benefit as well.

Research Question Three

The third research question was to determine if service-learning had an impact on EI development based upon age. Incongruent with previous research findings, we observed higher overall scores for older children. This finding was in conflict with the assumption that the impact would be greater in younger subjects than older (Chapman & Hyslip, 2006; Goleman, 1995; Elias et al., 1997; Mayer, Salovey, & Caruso, 2004). The group *not exposed* to the service-learning curriculum increased in the domains of “well-being” and “emotionality.” These findings were not reflective of our literature review which suggested that EI becomes static as individuals age (Barton & Reed, 2010; Billig, 2010; Kaye, 2010; Scharff, 2009). We believe these findings are encouraging in that there is indication emotional intelligence can be successfully impacted at multiple age ranges. Our findings also suggest intervention might even be more impactful for older students than younger populations. This might be a result of the complexity and critical thinking required to engage in authentic service-learning experiences. Students must be able to apply skills across content areas, e.g. language arts for the writing and speaking to various audiences, mathematics for budgeting and computation, and social studies and science to address identified community needs. Students must also be able to create complex project designs that require extensive planning, problem-solving, collaboration, and coordination of knowledge and resources. We do not contend that younger populations will not benefit from service-learning experiences, but that age appropriate

exposure over time can perhaps show a greater impact toward growth in EI in older student rather than younger populations.

Implications of the Study

This study offers insight for teaching practices, policies for school curriculum development, and further research in the areas of EI and service-learning. Although no direct relationship between service learning and emotional intelligence was found, there may be other benefits for students when teachers integrate service- learning projects into the standard curriculum such as student engagement, a variable not directly measured during this study and an area for future exploration. Also, many research design enhancements are offered to improve the quality of data sampling and data collection process for future researchers to glean a stronger interpretation of how impactful service-learning can be on EI development.

Practice

This work provides additional support for further exploration in EI development in adolescents at the middle and high school levels. The positive response garnered from students and teachers during this study indicates that the experience and exposure to service-learning was a positive one. Teachers stated that students who were disengaged and off-task prior to the service-learning activity were more engaged in the content during the experience and demonstrated higher retention rates of the material as a result of the experience. Students also expressed that they felt more empathetic toward their classmates and teachers after their experience designing their own service-learning projects. The act of developing and implementing a service learning project required these students to think critically about their own learning and the needs of others leading

to some academic growth in the student participants. Teacher participants also embraced the idea of service-learning as beneficial and malleable to the district curricula, increasing their willingness to take risks and to implement like projects in the future.

Based upon our findings, it is evident that students benefit both emotionally and academically from learning experiences that are “authentic”, like those provided through service-learning. As teachers consider instructional design, they should plan authentic learning activities that allow students to construct their own meaning, engage in disciplined inquiry, and participate in learning that has value beyond the school setting (Jackson & Davis, 2000, p. 69). *Understanding by Design*, the instructional design tool used by many schools in New Jersey and for the curricula design in this study, offers specific guidelines to teachers to use when preparing units of study for students. The guidelines require that teachers specify the learning goals, have a “hook” or way to grab the learners attention, equip the learner with necessary skills to explore the subject matter, and afford the learner opportunities to reflect and to evaluate their results (Wiggins & McTighe, 2011, p. 52). Based on our experience in this study and our work with teachers, we believe that service-learning is something that can be easily integrated in a public school curriculum.

Policy

As noted, the duration of the treatment may have been insufficient to impact emotional growth. The rationale for the 12 week treatment for this study was the direct result of the limited time teachers felt comfortable with moving away from the course content to include service-learning as part of their students’ learning goals. What they later learned was that both can be accomplish simultaneously. Our research indicated that

it was possible to integrate service-learning without sacrificing the integrity of the pre-existing curricula, and in this case improved the experience for the learner.

Supervisors and school principals must provide teachers in their schools the flexibility to implement service-learning projects as a compliment to core content studies. Indeed, as explored in study, work in service-learning is not contrary to the goals set forth by the Common Core Standards, which raise the bar for students to integrate knowledge and skills to complete performance tasks that require them to think critically, solve problems and create original products as a result. Service-learning can provide a vehicle to help teachers and students meet that goal. Policies that shift teachers' focus away from instructional design toward accountability for high stakes tests often hinder the ability for teachers to implement authentic instructional practices, like service-learning, in their classroom. The alternative, implementing community service projects, does not provide a viable option in that it does not reach the full potential of academic and emotional impact as does service-learning. As demonstrated by this research, authentic service-learning requires students to think critically, improves their engagement, and improves the quality of their work output. This shift will also return the focus back toward the whole child development students need and is so lacking from the 21st Century learning experience.

Research

Although this work did not indicate a clear relationship between service-learning and emotional development, it did add to the body of research in EI. We still contend that this work can provide a roadmap for future research. For example, it became evident after the data analysis that the middle school control group consisted of a large number of high-level learners while the treatment group did not. Additionally, for the high school

sample, there was a gender imbalance. The experimental groups contained more females and the control group contained more males.

Future samples must include a cross-section of a larger population with multiple grade levels 7 through 12. If possible, future researchers should select all sections of a course content area such as mathematics, language arts, science, or social studies and avoid class in which student self-elect to take like exploratory courses, e.g. Art, Music, and technology courses. Additionally, researchers should conduct this work as a longitudinal study across multiple grade levels to help yield more conclusive findings in regards to service-learning's impact on sustainable emotional intelligence growth in youths over time.

An introduction of qualitative data collection with, "direct quotes capturing the people's perspectives and experiences" would have provided more information (Gay & Airasian, 2000, p. 205). The collection of qualitative data would have provided additional understandings as to the impact of the service-learning experiences on the participants. Gay and Airasian (2000) encourage an introduction of qualitative data collection with the use of "direct quotes capturing the people's perspectives and experiences" which would have enhance our findings for this study (p. 205). The implementation of an interview protocol would be beneficial to truly capture the impact service-learning on the study participants. Based upon what we have learned from this study, practitioners and researcher are encouraged to consider a mixed method study for future work. This work should take place in public schools so that researchers can begin to measure and determine the real benefits of service-learning for adolescent student from a variety of

backgrounds and ethnicities as private school often times is limited in diversity of student populations.

Limitations

This study is limited in that it provides only a cursory look at service-learning as a treatment for EI deficits. Since the groups examined were different in terms of access to resources, curricular experiences, demographics, and age, generalization of the findings must be approached cautiously. While we sought to determine if service-learning makes a difference in EI development, it is limited by the characteristics and size of the student population. A larger scale study would be necessary to generalize results.

To help reduce validity threats, this study required at least 20 participants per treatment and control group with a total target population of approximately 90 teenagers. This was done through administrator-selection, meaning the researcher selected the target populations. While the participants in this study were randomly selected using a classic cluster sampling scheme, the course content areas in which the treatments were administered were not. Due to history effect, particularly the different curricular experiences outside of the realm of the study, there may have been confounding variables that could have influenced student performance on emotional intelligence assessment tools. For example, the middle school site has implemented a monthly advisory period that offers some character development activities embedded in overall school experience that the high school site did not.

A classic cluster sample technique was employed for consistent and appropriate sampling models to select the samples at the middle school. Although the middle school sample was randomly selected using cluster methodologies, the small population size

made it difficult to limit the chances of selecting homogenous class samples (pupils who exceeded academically). The population was disproportionately comprised of honors students while one of the treatment classes was an inclusion class, with special education students. As a result, an unintentional bias resulted.

In the case of the art classes, an unintentional bias also might have been introduced to the sample. Students who self-selected to take art might have provided a composite of individuals with a certain emotional proclivity and/or gender. The goal, to infuse a service-learning experience into pre-existing curricula without disrupting the pacing of each school's curriculum implementation, provided much of the thrust for these selections. Due to these limitations, we are not purporting that findings in this report can be generalizable for every high school or middle school context, although the researcher can draw some conclusions.

A reexamination of the research design, sampling scheme and data collection protocol revealed unforeseen threats to internal validity. Finally, TEIQue-ASF was the instrument used to measure EI in this study. While this tool is certainly a well-researched and vetted tool, we suggest that a qualitative data analysis protocol be added to triangulate findings. Another strategy would be to administer the TEIQue-ASF in combination with an instrument that requires a third party observer who collects data on student emotional capacity (Mayer et al, 2004). Only trained practitioners in the field of psychology should administer these tools. Since we were not trained to administer such instruments, a tool was selected that could be used within the time constraints of this study, by those at our level of expertise, and appropriately in a public school setting. The

instrument used in this study is self-reporting which relies on subjects' self-perceptions only.

The middle school second test administration occurred after a major event that occurs annually for eighth graders, Challenge Day. Facilitators led Challenge Day as a team building experience in order to promote anti-bullying in schools (challengeday.org). Some of the students participated in Challenge Day during the course of this study. We also found that the high school's experimental group received the first inventory among students who were not participating in the study. During the inventory, students in the experimental groups were not given privacy to complete their survey, whereas, the students who participated in the control group were provided privacy. These confounding variables could have affected the findings of this study.

Recommendations

We contend that further qualitative work is necessary to triangulate and fully capture the effects of service-learning on EI development in teens. Informal discussion with participants after the service-learning activities revealed descriptive data that could have offered understandings about the setting, activities, and feelings of the participants. For instance, participants shared their feelings of pride at creating a product that helped others. Teachers also shared that student engagement and time on task improved for the students in the treatment groups. These findings suggest that an interview protocol and a qualitative analytical approach would be beneficial in the future; thus, we recommend a mixed methods approach for further research (Gay & Airasian, 2000).

Since teenagers' self-perceptions may vary over a period, it is possible that their views of their EI abilities could have changed during second testing administration;

therefore, we recommend that a third party instrument be administered in conjunction with a self-reporting instrument. For example, the service-learning project that the pupils experienced could have led them to judge themselves more harshly than their counterparts as to how well they truly empathized with others. Conversely, it is common for teens to carry false self-perceptions. Gamble et al (2012) reported findings that self-reporting instruments can be negatively affected by students' false perceptions and beliefs.

The unintentional biases caused by the sampling errors in this study, speaks to the need for more stringent strategies for future research. To avoid homogeneous populations or gender imbalances a stratified sampling strategy might be more appropriate. This technique would allow for a proportionate representation of the total school population (Gay & Airasian, 2000).

Self-reporting tools may leave opportunities for self-deception or impression management as well, the conscious or unconscious drive to impress others, in the subject (Sjöberg & Engelberg, 2004). Did the students in the middle school control groups, who were high performing students, have proclivity toward impression management versus the experimental group? Did the experimental group, after experiencing service-learning and Challenge Day, report more authentically the second time around? We may have answered these questions through qualitative research methodologies as done in previous work at the higher education levels (Billig, 2010; Townsend, 2010). Lastly, we collected the data for this study immediately following the 12-week treatment, which may or may not indicate true sustainable change. To truly change behavior, future researchers must

apply a longer application of the treatment and time between measurements is suggested (Redman, 2013).

Conclusion

It is still our position that service-learning can provide a solution to EI deficits in adolescents. While this work raised more questions than answers, we have gleaned some insights on how to conduct future research on using service-learning to promote EI. Researchers in the future should conduct this research in a longitudinal mixed method study to both observe EI development over time and triangulate findings. As previously stated, teacher and student perceptions must be recorded to fully capture the effects of service-learning. We suggest that measuring EI growth and the impact of service-learning should be conducted using both self-reporting and performance based instruments with a qualitative data collection and analysis protocol to triangulate findings. In addition, a stratified sampling strategy may provide a more proportionate representation of the study population. Finally, we place emphasis on the importance of teacher collaboration. Curriculum writing should focus on project based learning experiences that integrate service-learning activities that promote citizenship, community, and teamwork, all essential to EI development. It is evident that instructional designs that include service-learning as a model is aligned to our work to prepare 21st Century learners for the workforce and higher education. Teachers and school leaderships are encouraged to engage in conversations as to how service-learning can be implemented at the secondary level. This study offers a contribution to that conversation.

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Appendix A: Service-learning Unit using UbD design Middle School

Unit topic: U.S. Constitution Subject(s): Social Studies Grade(s): 8-12

Timeframe: 12 weeks

Stage 1—Desired Results	
Transfer	
<p><i>Students will be able to...</i></p> <ul style="list-style-type: none"> • Understand and explain the components of the U.S. Constitution and how it relates to their lives today. 	
Meaning	
<p>UNDERSTANDINGS</p> <p><i>Students will understand that...</i></p> <p>6.1 U.S. History: America in the World: All students will acquire the knowledge and skills to think analytically about how past and present interactions of people, cultures, and the environment shape the American heritage. Such knowledge and skills enable students to make informed decisions that reflect fundamental rights and core democratic values as productive citizens in local, national, and global communities.</p> <p>Colonization and Settlement (1585-1763)</p>	<p>ESSENTIAL QUESTIONS</p> <p><i>Students will keep considering...</i></p> <p>How does the Constitution divide power among the national government and state governments?</p> <p>How are the purposes of government, as defined in the Preamble to the Constitution, still important to people? How can citizens take part in our American constitutional government?</p> <p>How has the United States changed in your lifetime? What is patriotism?</p>

<p>6.1.8.A Civics, Government, and Human Rights</p> <p>6.1.8. A.3.b Evaluate the effectiveness of the fundamental principles of the Constitution (e.g., consent of the governed, rule of law, federalism, limited government, separation of powers, checks and balances, and individual rights) in establishing a federal government that allows for growth and change over time.</p> <p>6.1.8. A.3.c Determine the role that compromise played in the creation and adoption of the Constitution and Bill of Rights.</p>	
Acquisition of Knowledge and Skill	
<p><i>Students will know...</i></p> <p>Key facts and vocabulary related to the establishment of the new government.</p> <p>The Constitution is the basic law of the United States.</p> <p>How the Constitution is organized and its purpose.</p> <p>How the Constitution divides power among the national and state governments.</p> <p>What is the Bill of Rights and why it was</p>	<p>Students will be skilled at...</p> <p>Recognize, define, and use vocabulary related to the establishment of a new government.</p> <p>Read & interpret a population map to study the changes in the population map in the 1700's.</p> <p>Use research skills (with guidance) to find out about important people involved in the establishment of the new government.</p> <p>Explain the importance of the Great</p>

<p>added to the Constitution.</p> <p>The role of the Constitutional Convention and its members in developing the Constitution.</p> <p>The purpose of the Great Compromise.</p> <p>The powers of the federal government and the roles of the three branches.</p> <p>The role of the President of the United States and his/her cabinet.</p>	<p>Compromise.</p> <p>Compare and contrast the three levels of government in the United States.</p> <p>Compare & contrast the powers and functions of the three branches of government; and explain the system of checks and balances.</p> <p>Explain what is guaranteed every citizen in the Bill of Rights.</p> <p>Identify the principles of a constitutional government.</p>
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Stage 2—Evidence

Evaluation Criteria	<i>Students will show their learning by...</i>
<p>Teacher designed rubric, formative/summative assessment(s).</p>	<p>Create a mobile/poster or other project presentation representing the three branches of government and the system of checks and balances.</p> <p>Role playing a debate of the Constitutional Convention its issues and compromises.</p> <p>Creating a Current Events News Program on the Bill of Rights and how it affects our everyday lives in the 21st Century.</p> <p>Holding a mock election</p> <p>Researching and report on the branches of government and their current members</p> <p>Illustrating an editorial cartoon describing the opinion of a delegate to the Constitutional Convention.</p> <p>Analyzing a problem and apply the problem solving process to resolve a conflict relevant to the class.</p> <p>Writing a set of classroom rules that illustrate the ideas of the Constitution.</p>

	<p>Designing a poster that honors the Bill of Rights. List the first 10 amendments, and add pictures of freedoms that you enjoy.</p> <p>Testing, quizzes and written response assessment.</p>
Stage 3—Learning Plan	
Summary of Key Learning Events and Instruction	
See Attachment on Constitution Fair	

Section 1: Project Name and Participants

Instructor:	2 Social Studies Teachers	School:	Middle school
Period(s) Participating:	4, 5, 5, & 7	Grade Level(s):	8
Project Name: Service-learning Project Integration to Constitution Curriculum entitled “Constitution Fair”			

Section 2: Project Description

Students created a “Constitution Fair” for a nearby elementary school or other classes at the middle school. This Fair will be set up in the media center or one of the house centers based on availability. The Fair will include booths with information about each part of the Constitution and how it applies to current events. At each booth, elementary and/or middle school students will learn about a part of the constitution. This information may be conveyed orally, with display boards, using games, or any way the students deem effective and/ or engaging. Handouts will be given at each booth. A short quiz may lead to prizes at the end of the Fair.

Section 3: NJ Core Content Standards and Common Core Standards

- CCSS.ELA-Literacy.SL.8.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 8 topics, texts, and issues, building on others’ ideas and expressing their own clearly.

- CCSS.ELA-Literacy.SL.8.1a Come to discussions prepared having read or researched material under study; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion.
- CCSS.ELA-Literacy.RL.8.1 Cite the textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences drawn from the text.
- CCSS.ELA-Literacy.W.8.2a Introduce a topic clearly, previewing what is to follow; organize ideas, concepts, and information into broader categories; include formatting (, headings), graphics (, charts, tables), and multimedia when useful to aiding comprehension.
- CCSS.ELA-Literacy.W.8.2b Develop the topic with relevant, well-chosen facts, definitions, concrete details, quotations, or other information and examples,
- CCSS.ELA-Literacy.SL.8.4 Present claims and findings, emphasizing salient points in a focused, coherent manner with relevant evidence, sound valid reasoning, and well-chosen details; use appropriate eye contact, adequate volume, and clear pronunciation.
- CCSS.ELA-Literacy.SL.8.5 Integrate multimedia and visual displays into presentations to clarify information, strengthen claims and evidence, and add interest.
- CCSS.ELA-Literacy.SL.8.6 Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate. (See grade 8 Language standards 1 and 3 here for specific expectations.)

Section 4: Rationale

Many students have limited knowledge of the constitution. Their interest in current issues and civic engagement is limited by the amount of constitutional knowledge they possess. The study of the constitution is a major unit of study in grade 8 social science with some introduction in grade 5. This work provides students opportunities to teach others and also to increase their own knowledge through their active engagement in designing learning experience about the constitution for others.

Section 5: Community Partner(s)

Constitutional Rights Foundation, Center of Civic Education, PTO, and New Jersey Council for Social Studies.

Section 6: Student Voice

- Students will decide what section of the Constitution they wish to highlight.
- Students will decide the most interesting ways to present the information.
- Student will design motivational techniques to get Fair visitors to learn the material.
- Student will design the arrangement of booths.

Student will determine what information will go into the handouts.

Section 7: Project Components

- Students research the key sections of the Constitution and select those they believe are most important.
- Students will be divided into groups. Each group will plan a booth for the Fair centered on an important part of the Constitution.
- Students will design booths and handouts.
- Student will write brief presentations they will give to the participants who visit their booths.
- Students will contact and invite guests to the Fair.
- Students will design games and motivational strategies to get visitors to learn about the constitution.
- Students will set up and conduct Fair.
- Students will write a reflection on what they learned about the Constitution and what they accomplished by holding the Fair.

Section 8: Reflection Prompts

- Students will write an essay about how their knowledge of the Constitution was increased.

Student will write a reflection evaluating the effects on the students who attended the Fair.

Section 9: Outcomes and Assessments

- Students will demonstrate an understanding of the Constitution by creating informative and creative displays and handouts.
- Students will exhibit organizational skill by planning and conducting the Fair.
- Student will display an ability to communicate clearly in writing and orally by creating clear and concise handouts and oral presentations about the Constitution.

Section 10: Accommodations/Support for Diverse Learners

- Appropriate tasks will be assigned to *all* students
- Student will be encouraged to work collaboratively and respect the talents of each of the members of their group.
- Fair locations will be accessible to *all* students (e.g., handicap accessible)
- Each member of the group will have an equal opportunity to make significant contributions to the project.
- Students with IEPs who are working on the project will be identified and individual needs of those students will be met in the classroom.

Lesson adapted from Service-learning Ideas and Curriculum (SLICE), National Service-learning Clearinghouse at www.servicelearning.org/slice.

Appendix B: Service-learning Unit using UbD design High School

Unit topic: Native American Art

Subject(s): Crafts

Stage 1—Desired Results	
Transfer	
<i>Students will be able to...</i>	
Understand Native American art and create Native American artwork.	
Meaning	
UNDERSTANDINGS	ESSENTIAL QUESTIONS
<ul style="list-style-type: none"> • Native Americans invented and perfected valuable functional art. • Native Americans were treated unjustly by European settlers. • There are and were many different tribes that had different strengths and weaknesses. • The Navajo tribe is very well known for their hand-woven blankets. • Basket weaving was a very popular form of art work.... 	<ul style="list-style-type: none"> • How were the Native American different from the European settlers? • Why was Native American art so important to their culture? • How do you plan to know that visual arts have a history, purpose and function in all cultures? • How do you plan to identify specific works of art as belonging to particular cultures, times and places?
Acquisition of Knowledge and Skill	
<i>Students will know...</i>	<i>Students will be skilled at...</i>
<ul style="list-style-type: none"> • How various cultures express everyday life and traditions through crafts with a Focus on regions studied in Social Studies. • Compare and contrast various art projects through different tribes. • Compare and contrast ancient Native American cultures verses contemporary American culture. 	<ul style="list-style-type: none"> • Develop knowledge and create sand art paintings, clay coil vases, mandala Weavings, beading and jewelry. • Demonstrate and use the elements of art and principles of design in crafts. • Analyze how viewers respond to crafts. • Recognize that crafts are created

<ul style="list-style-type: none"> • Articulate an understanding of various craft processes and communicate knowledge to others. 	<p>through personal, social, historical, and cultural perspectives.</p> <ul style="list-style-type: none"> • Identify the materials to make Native American artwork. • Identify things about Native American art work that you can see and name with certainty. • Demonstrate craftsmanship in all steps of the project.
<p>Stage 2—Evidence</p>	
<p>Evaluation Criteria</p>	<p><i>Students will show their learning by...</i></p>
<ul style="list-style-type: none"> • Quizzes and tests on each Native American Project • Critiques on finished art forms through knowledge of the art elements and design principles • Group discussion and written reflection • Student questions/comments 	<ul style="list-style-type: none"> • Sand art on wood/Mandela radial symmetrical design • Dream catchers and their significance/medicine wheel • Coil clay vase • Beading on looms and leather jewelry designs and construction
<p>Stage 3—Learning Plan</p>	
<p>Summary of Key Learning Events and Instruction:</p> <p>See Attached</p>	

Unit topic: Ceramic Bowls and Goblets

Subject(s): Ceramics II

Grade(s): 9-12

Timeframe: 12 weeks

Stage 1—Desired Results	
Transfer	
<p><i>Students will be able to...</i></p> <p>Throwing and hand building are at the core of all studio ceramic tactics and to create ceramic artwork such as bowls and goblets.</p>	
Meaning	
<p>UNDERSTANDINGS</p> <p><i>Students will understand that...</i></p> <ul style="list-style-type: none"> • There are many ways to create personal expression with clay. • All-wheel-made forms are based on a cylinder. • Manipulating the clay on the wheel requires practice and patience. • Trial and error are part of the learning process. • Understand the mastery in formulating and applying basic glazes. • Understanding the difference between decorative and utilitarian ceramic pieces. • Understand that to throw the clay you have to bend it between your finger joints. • Understanding the similarities and differences between hand-formed and wheel thrown ceramics. • Understand that people have used molds to shape clay objects for millennia. • Understand throwing on the wheel is all about balance. • The speed at which the wheel revolves and the moisture content of the clay are the most important variables in throwing. 	<p>ESSENTIAL QUESTIONS</p> <p><i>Students will keep considering...</i></p> <ul style="list-style-type: none"> • How does the use of the potter’s wheel affect the shape and form of pottery? • What skills are necessary to create pottery on the wheel? • How does this method differ from the other methods of building? • What are the three types of molds used with soft clay slabs? • Can abstract clay work be functional?

Acquisition of Knowledge and Skill	
<p><i>Students will know...</i></p> <ul style="list-style-type: none"> • Knowledge of all safety rules and regulations pertaining to ceramics and • Demonstrate the safe use and care of materials. • Knowledge of the vocabulary necessary and useful for creating, discussing and/or writing about ceramic pieces. • Knowledge of finishing techniques, including glazing recipes, principles, and properties. • Knowledge related to the preparation and treatment of ceramic items before firing in the kiln takes place. • Almost anything with a firm surface can act as a mold if its angles are not too sharp or pointed. • A molded piece can be changed by carving or by altering its shape. 	<p>Students will be skilled at...</p> <ul style="list-style-type: none"> • Demonstrate craftsmanship (craft quality) and apply evaluation criteria at the advanced level. • Application of principles of design to ceramics works. • Produce works in clay that utilize higher order thinking skills in terms of expressing thoughts, ideas, feelings, and attitudes. • Develop the ability to become more informed about how arts and crafts were created and their place in our history and culture. • Utilize self-critique to modify structure during construction. • Implement the proper steps in creating a piece on the wheel. • Compare/contrast ceramic works completed using different media skills. • List the three different types of molds that are easy to use with clay slabs.
Stage 2—Evidence	
<p>Evaluation Criteria</p>	<p><i>Students will show their learning by...</i></p>
<ul style="list-style-type: none"> • Use the wheel to throw a symmetrical form and then modify it by adding/subtracting to create an asymmetrical, complex form. • Create a series of three repeated wheel-thrown 	<ul style="list-style-type: none"> • Produce sketches of various patterns to be incorporated into an original ceramic design. • Observe demonstration of technique by the teacher and take notes. • Glaze their work in order to enhance structure. • Self-critique while planning and executing their projects.

forms of matching size and decorative finish. <ul style="list-style-type: none"> • Use piercing or create openwork as a decorative finish. 	<ul style="list-style-type: none"> • Create ceramic bowls and goblets.
Stage 3—Learning Plan	
Summary of Key Learning Events and Instruction	

Section 1: Project Name and Participants

Instructor: 1 Art Teacher	School: High school Site
Period(s) Participating: 2 & 4	Grade Level(s): 9-12
Project Name: <i>Empty Bowls</i>	Number of Students:

Section 2: Project Description

“*Empty Bowls*” is an international grassroots effort to fight hunger and was created by The Imagine Render Group. The basic premise is simple: Potters, artists, educators, and others work with the community to create handcrafted bowls and other artwork. Guests are invited to a simple meal. In exchange for a cash donation, guests are asked to keep a bowl (or in our case, a bowl or another piece of artwork) as a reminder of all the *Empty Bowls* in the world. The money raised is donated to an organization working to end hunger and food insecurity. The high School’s Ceramics and Crafts class created bowls, goblets, and Native American artwork for this project. Students researched an area of poverty that they wished to donate money to. The two organizations they researched and donated the money to be: Neighbors Together, which feed the hungry in Brooklyn, NY, and Syrian Expatriates, which helps to feed destitute Syrian children. Students raised over three hundred dollars during their luncheon.

Section 3: NJ Core Content Standards and Common Core Standards

- 1. Q.2.D.1 – Identify the basic elements of art and principles of design in diverse types of artwork.
- 1.1.2. D.2 – Identify elements of art and principles of design in specific works of art and explain how they are used.

- 1.1.5. D.1 – Identify elements of art and principles of design that are evident in everyday life.
- 1.3.2. D.1 – Create two and three dimensional works of art using the basic elements of color, line, shape, form, texture, space, as well as a variety of art mediums and application methods.

Section 4:

This study allowed students to understand the fundamentals of art such as 2-D and 3-D projects. It also allowed them to enhance their knowledge of art elements and principles.

Section 5: Community Partner(s)

Staff and community members were allowed to participate in the culminating luncheon of the *Empty Bowls* project.

Section 6: Student Voice

- Students decided which area of poverty they will donate the money from the project to.
- Students decided what piece of art they would create and donate.
- Student designed motivational techniques to get people to participate in the luncheon.
- Student designed the arrangement of the luncheon.
- Students contributed food to the luncheon and helped to clean up.

Section 7: Project Components

- Students research in groups (in the library) the area of poverty they want to donate the money to.
 - Students created presentations about the area of poverty they picked and voted on where the money is donated to.
 - Students watched media that depicted poverty and the hungry.
 - Students will learned about community service through a Socratic seminar.
 - Students designed artwork.
 - Student created the luncheon by donating food, helping with the set-up, and advertising it to t others.
- Students reflected on the project.

Section 8: Reflection Prompts

- Students reflected about the project through whole group discussion.

Section 9: Outcomes and Assessments

- Students demonstrated an understanding of the art fundamentals through their designed project.
- Students exhibited organizational skill by helping to design the luncheon.

Section 10: Accommodations/Support for Diverse Learners

- Appropriate tasks were be assigned to *all* students
- Students were encouraged to work collaboratively and respected the talents of each of the members of their group.
- Each member of the group had an equal opportunity to make significant contributions to the project.
- Students with IEPs who worked on the project were identified and individual needs of those students were met in the classroom.

Lesson adapted form Service-learning Ideas and Curriculum (SLICE), National Service-learning Clearinghouse at www.servicelearning.org/slice.

Appendix C: Parent Letter and Consent Form

September 9, 2013

Dear Parents:

My name is Rosetta Treece, and I am currently a Vice Principal/Supervisor of Exceptionally Able K-8 for [REDACTED], as well as a Doctoral student at Rowan University. I will be conducting a research project under the supervision of Dr. Hector Rios as part of my doctoral dissertation. This letter serves to request the participation of your child in my research. I am conducting a study to determine the impact of service-learning on emotional intelligence in middle school aged students. Emotional intelligence is defined as how well one perceives, integrates, and manages his/her own emotions.

With your permission, your child will complete a short survey, TEIQue-ASF, an instrument designed to assess emotional intelligence in youths. The TEIQue-ASF survey will take 15 minutes for each administration. Your child will participate as part of the control group, which means they will not participate in the service-learning portion of the study, but will be asked to take the TEIQue-ASF survey twice over a period of 12 weeks.

Your child's participation in this study is completely voluntary and will not affect his/her grades in any way. Your child may quit this study at any time by simply writing on the questionnaire "Stop" or "I do not wish to participate." The study will be conducted from September 23rd through December 13th, 2013 during his/her social studies class. There are no known risks involved in this study, and your child will not receive any compensation for his/her participation. To protect your child's confidentiality, the survey will not be shared with anyone, unless required by law. The results of this questionnaire will be maintained in a password protected folder, using a password protected computer, and/or in a locked file cabinet. If you have any questions, or if you would like to receive the results of your child's individual scores on the TEIQue-ASF survey, please contact me at [REDACTED].

This letter will serve as a consent form for your child's participation and will be kept in a locked file cabinet. If you have any questions about this study or your child's rights as a participant, please contact me at [REDACTED] or the building principal [REDACTED] at [REDACTED].

If you have any question about your child's rights as a research subject, you may contact the Associate Provost of Research at:

Rowan University Institutional Review Board for the Protection of Human Subjects

Office of Research

201 Mullica Hill Road
Glassboro, NJ 08028-1701
Tel: 856-256-5150

You may also contact Dr. Hector Rios at [REDACTED] or [REDACTED].

Kindly have your child return this form to his/her social studies teacher by Friday, September 13th, 2013.

Sincerely yours,

Rosetta D. Treece

Statement of Consent

I read the above consent form. The nature, demands, risk, and benefits of the project have been explained to me. I am aware that I have the opportunity to ask questions about this research. I understand that I may withdraw my consent and discontinue my child's (ward's) participation at any time without penalty. In signing this form, I am not waiving any legal claims, rights, or remedies.

Child's Name

Signature of Legal Guardian

Date

-To be completed by research-

I certify that I have explained to the above-named individual the nature and purpose, the potential benefits and possible risks associated with participation in this research study. I have answered all questions that have been raised by this parent. These elements of Informed Consent conform to federal guidelines and to Rowan University's on the use of Human Subjects. I have provided the participant's legal guardian with a copy of this signed consent form.

Researcher

Date

Appendix D: Student Letter and Assent Form



September 9, 2013

Dear Student:

My name is Mrs. Treece. I am currently a Doctoral student at Rowan University. I am asking you to participate in a survey that examines if service-learning has an impact on emotional intelligence. My project looks to see if service-learning improves students' emotional intelligence. Emotional intelligence is defined as how one perceives, integrates, and manages his/her emotions.

I am asking you to complete a short survey that will take about 15 minutes. This survey will be completed twice within a 12-week span—once before and once after you complete a service-learning activity in your social studies class. Your parents or legal guardians will have to give permission for you to participate in this study and you do not have to participate if you choose not to.

You may quit this study at any time by simply writing on the questionnaire “Stop” or “I do not wish to participate.” Your participation in this study will not affect your grades in any way. There are no known risks involved in this study, and you will receive nothing for your participation. To protect your confidentiality, the survey will not be shared with anyone unless required by law or requested by your parent/guardian. The results of this survey will be maintained in a password protected folder, using a password protected computer, and/or in a locked file cabinet. If you have any question about this study, please see Mrs. Treece or your social studies teacher.

Sincerely yours,
Rosetta D. Treece

Student Assent Form

Agreement

I agree to participate in this research project and I have received a copy of my rights and the details of this study.

Student's Name (Please Print)

Date

Student's Signature

-To be completed by Mrs. Treece (the researcher)-

I have explained to the above-named individual the nature and purpose, benefits and possible risks associated with participation in this research. I have answered all questions that have been raised and I have provided the participant with a copy of this form.

Researcher

Date

Appendix E: Permission to Use School Site Letter

2/19/2013

Dr. [REDACTED], Superintendent
[REDACTED]
[REDACTED], New Jersey [REDACTED]

RE: Permission to Conduct Research Study

Dear Dr. [REDACTED] and Board of Education:

I am writing to request permission to conduct a research study at _____ Middle School. I am currently enrolled in a Doctoral Program at Rowan University in Glassboro, NJ, and am in the process of writing my Dissertation. The study is entitled The Impact of Service-learning on Emotional Intelligence.

This letter serves as a request for school central and building level administration to allow me to conduct a survey using two social studies classes of mixed ethnicity, gender, and age from the middle school. A survey will be administered to students before and after they participate in a service-learning project in the social classes to determine the impact service-learning may or may not have on emotional intelligence. Pre and post surveys will be administered to two social studies classes, one that will, and one that will not participate in the prescribed service activities. Interested students, who volunteer to participate, will be given both an assent form and a consent form to be signed by their parent or guardian (copies enclosed) and returned to me at the beginning of the survey process.

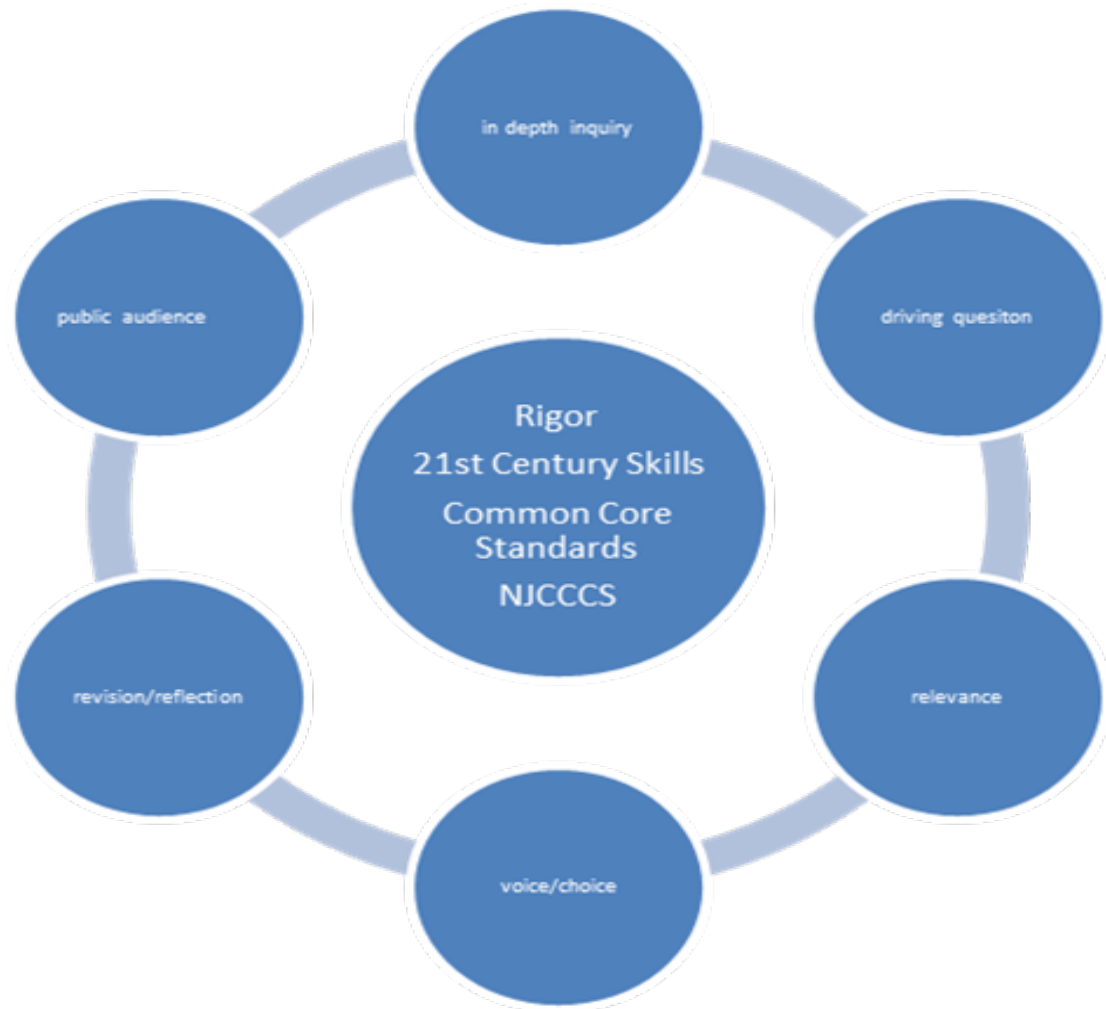
If approval is granted, student participants will complete the survey in their classroom. The survey process should take no longer than fifteen minutes. The survey results will be pooled for the thesis project and individual results of this study will remain absolutely confidential and anonymous. Should this study be published, only pooled results will be documented. No costs will be incurred by either your school/center or the individual participants.

Your approval to conduct this study will be greatly appreciated. If you agree, kindly submit a signed letter of permission on your institution's letterhead acknowledging your consent and permission for me to conduct this survey/study at your institution.

Sincerely,

Rosetta D. Treece, M.Ed.
Vice Principal
Supervisor of Exceptionally Able K-8

Appendix F: Project Based Learning Diagram



Appendix G: Learning Styles Inventory

This exercise is intended to help you understand how you learn best and to help with ideas about approaching coursework based on those strengths. To better understand how you prefer to learn and process information, print out this page and place a check in the appropriate space after each statement below.

	Often	Sometimes	Seldom
1. I can remember best about a subject by listening to a lecture that includes information, explanations, and discussion.			
2. I prefer to see information written on a chalkboard and supplemented by visual aids and assigned readings.			
3. I like to write things down or to take notes for visual review.			
4. I prefer to use posters, models, or actual practice and other activities in class.			
5. I require explanations of diagrams, graphs, or visual directions.			
6. I enjoy working with my hands or making things.			
7. I am skillful with and enjoy developing and making graphs and charts.			
8. I can tell if sounds match when presented with pairs of sounds.			
9. I can remember best by writing things down several times.			
10. I can easily understand and follow directions on a map.			
11. I do best in academic subjects by listening to lectures and tapes.			

12. I play with coins or keys in my pocket.			
13. I learn to spell better by repeating words out loud than by writing the words on paper.			
14. I can understand a news article better by reading about it in the newspaper than by listening to a report about it on the radio.			
15. I chew gum or snack while studying.			
16. I think the best way to remember something is to picture it in your head.			
17. I learn the spelling of words by "finger spelling" them.			
18. I would rather listen to a good lecture or speech than read about the same material in a textbook.			
19. I am good at working and solving jigsaw puzzles and mazes.			
20. I grip objects in my hands during learning periods.			
21. I prefer listening to the news on the radio rather than reading about it in the newspaper.			
22. I prefer obtaining information about an interesting subject by reading about it.			
23. I feel very comfortable touching others, hugging, handshaking, etc.			
24. I follow oral directions better than written ones.			

Scoring Procedures

DIRECTIONS: Place the point value on the line next to the corresponding item below. Add the points in each column to obtain the preference score under each heading.

OFTEN = 5 points

SOMETIMES = 3 points

SELDOM = 1 point

VISUAL	AUDITORY	TACTILE
NO. PTS.	NO. PTS.	NO. PTS.
2 ____	1 ____	4 ____
3 ____	5 ____	6 ____
7 ____	8 ____	9 ____
10 ____	11 ____	12 ____
14 ____	13 ____	15 ____
16 ____	18 ____	17 ____
19 ____	21 ____	20 ____
22 ____	24 ____	23 ____

VPS = ____

APS = ____

TPS = ____

VPS = Visual Preference Score

APS = Auditory Preference Score

TPS = Tactile Preference Score

If you are a VISUAL learner, by all means be sure that you look at all study materials. Use charts, maps, filmstrips, notes, videos, and flash cards. Practice visualizing or picturing words and concepts in your head. Write out everything for frequent and quick visual review.

If you are an AUDITORY learner, you may wish to use tapes. Tape lectures to help fill in gaps in your notes. But do listen and take notes - and review your notes frequently. Sit

in the lecture hall or classroom where you can hear well. After you have read something, summarize it and recite it aloud. Talk to other students about class material.

If you are a TACTILE learner, trace words as you are saying them. Facts that must be learned should be written several times. Keep a supply of scratch paper on hand for this purpose. Taking and keeping lecture notes is very important. Make study sheets. Associate class material with real-world things or occurrences. When appropriate, practice role playing.

Appendix H: TEIQue-ASF Instrument

TEIQue-ASF

Instructions: Please answer by putting a circle around the number that best shows how much you agree or disagree with each sentence below. If you strongly disagree with a sentence, circle a number close to 1. If you strongly agree with a sentence, circle a number close to 7. If you're not too sure if you agree or disagree, circle a number close to 4. Work quickly, but carefully. There are no right or wrong answers.

	Disagree Agree						
1. It's easy for me to talk about my feelings to other people.	1	2	3	4	5	6	7
2. I often find it hard to see things from someone else's point of view.	1	2	3	4	5	6	7
3. I'm a very motivated person.	1	2	3	4	5	6	7
4. I find it hard to control my feelings.	1	2	3	4	5	6	7
5. My life is not enjoyable.	1	2	3	4	5	6	7
6. I'm good at getting along with my classmates.	1	2	3	4	5	6	7
7. I change my mind often.	1	2	3	4	5	6	7
8. I find it hard to know exactly what emotion I'm feeling.	1	2	3	4	5	6	7
9. I'm comfortable with the way I look.	1	2	3	4	5	6	7
10. I find it hard to stand up for my rights.	1	2	3	4	5	6	7
11. I can make other people feel better when I want to.	1	2	3	4	5	6	7
12. Sometimes, I think my whole life is going to be miserable.	1	2	3	4	5	6	7
13. Sometimes, others complain that I treat them badly.	1	2	3	4	5	6	7
14. I find it hard to cope when things change in my life.	1	2	3	4	5	6	7
15. I'm able to deal with stress.	1	2	3	4	5	6	7
16. I don't know how to show the people close to me that I care about them.	1	2	3	4	5	6	7
17. I'm able to "get into someone's shoes" and feel their emotions.	1	2	3	4	5	6	7
18. I find it hard to keep myself motivated.	1	2	3	4	5	6	7
19. I can control my anger when I want to.	1	2	3	4	5	6	7
20. I'm happy with my life.	1	2	3	4	5	6	7
21. I would describe myself as a good negotiator.	1	2	3	4	5	6	7
22. Sometimes, I get involved in things I later wish I could get out of.	1	2	3	4	5	6	7
23. I pay a lot of attention to my feelings.	1	2	3	4	5	6	7
24. I feel good about myself.	1	2	3	4	5	6	7
25. I tend to "back down" even if I know I'm right.	1	2	3	4	5	6	7
26. I'm unable to change the way other people feel.	1	2	3	4	5	6	7
27. I believe that things will work out fine in my life.	1	2	3	4	5	6	7
28. Sometimes, I wish I had a better relationship with my parents	1	2	3	4	5	6	7
29. I'm able cope well in new environments.	1	2	3	4	5	6	7
30. I try to control my thoughts and not worry too much about things.	1	2	3	4	5	6	7