1-1-2011

The Relationship between Emotional Intelligence and Literacy Achievement of Secondary Students

David P. Jones
Walden University

Walden University

College of Education

This is to certify that the dissertation by

David P. Jones

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

Review Committee
Dr. Linda Crawford, Committee Chairperson, Education Faculty
Dr. Daniel Salter, Committee Member, Education Faculty
Dr. Toni Di Dona, University Reviewer, Education Faculty

Chief Academic Officer
Eric Riedel, Ph.D.

Walden University
2013

Abstract

The Relationship between Emotional Intelligence and Literacy Achievement of

Secondary Students

by

David P. Jones

MA, Marygrove College, 2004

BS, The College of New Jersey, 1992

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Education

Walden University

June 2013

Abstract

Proficiency in language arts and communication skills is essential to success in the global workforce. Most states assess students in language arts literacy (LAL) through standardized tests that assess a student's ability to read, interpret literature, and write expressively. Although educational reformers strive to improve the foundations that prepare students in literacy, reforms have not fully incorporated the theory of emotional intelligence (EI), which explains a student's ability to use, understand, perceive, and manage their emotions in order to think critically, make decisions, and solve problems. Although it is not known whether EI directly correlates to literacy, emotional skills are an integral part of literacy, linguistics, and overall cognition. The purpose of this quantitative study was to determine whether a correlation existed between EIQ (measured by the Mayer, Salovey, and Caruso Emotional Intelligence Test), and LAL (measured by the High School Proficiency Assessment) in literacy, for secondary students. The multiple regression model included 2 control variables: gender and grade point average. The findings of the primary analysis demonstrated positive correlations between EIQ and LAL scores. Upon further analysis, the relationship between EIQ and LAL remained positively significant in the regression model. Emotional intelligence, and associated improved literacy skills, may positively influence social change by helping secondary students to develop a broader repertoire of skills necessary for communication and problem solving later in life.

Abstract

The Relationship between Emotional Intelligence and Literacy Achievement of

Secondary Students

by

David P. Jones

MA, Marygrove College, 2004

BS, The College of New Jersey, 1992

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Education

Walden University

June 2013

UMI Number: 3565426

UMI

Dissertation Publishing

UMI 3565426

ProQuest®

Dedication

I dedicate this work to my daughters: Mackenzie Laine and Rylee Peyton.

Acknowledgments

I would like to thank my parents and siblings for their support. To my father Robert: you offered sound advice and encouragement. To my brother Robert: you read so many drafts and offered great support and suggestions. Thank you to my brother Jeff and my mother Janet for your patience and helpfulness.

I would also like to thank my committee. Dr. Linda Crawford and Dr. Daniel Salter, I thank you for taking on my project around your busy schedules. Linda, your reputation speaks for itself, but experiencing your expertise first hand was a gift to me and I have learned so much. Daniel, your mini-lectures at residencies were inspiring and I am pleased that I actually met you in this crazy web-based environment. Your sense of humor around brilliance helped ease the painful process of dissertation writing and I am very appreciative.

Finally, I would like to thank Dr. Robert Keenan. Dr. Keenan, your experiences with Walden University provided you with a gift for me: empathy. We tend to see things eye-to-eye, and I am thankful for meeting you so many years ago before either of us ever conceptualized a possibility of achieving a prestigious academic status. I appreciated your support in every way.

Table of Contents

List of Tables

Chapter 1: Introduction to the Study

During the last 25 years of the 20th century, school reformers in the United States approached change with a Cold War-influenced isolated and nationalistic competitiveness rather than with global systems thinking. The Cold War era mindset has been apparent in the modern world, as stakeholders have relied on national standardized tests in Math, Literacy, Science (Zhao, 2007). Rather than focusing on science, technology, engineering, and mathematics (STEM), stakeholders must continue efforts furthering testing to include an eclectic gamut of assessments (Marzano, 2001). Testing in a variety of areas could support a balanced education system. Education of STEM is necessary, but creativity is an equally important instructional area in language arts, linguistics, the arts and humanities, and social and emotional skills. A holistic approach may promote creativity from multiple perspectives. Students' learning abilities associated with outward and inward perspectives may have implications for global competitiveness as students use creative strategies to solve problems (Gardner, 1983, 2006; Zhao, 2007).

The influence of emotion on academic achievement is a small but significant area of research. Some research has been conducted to clarify the implications of emotional intelligence (EI) for academic achievement. The problem is that experts either do not agree or have not tested for a correlation between EIQ and LAL among secondary students (Dardello, 2007; Holt, 2007; Mendes, 2002; Szuberla, 2005). The purpose of this multiple regression study was to examine the relationship between literacy skills and emotional intelligence, while controlling for gender and GPA at two New Jersey public schools.

Background

In the U.S., the Progress in International Reading Literacy Study (PIRLS) (2007),
showed only a marginal growth of children's literacy rates over five years as compared
with their international peers. Reports such as PIRLS and Adult Literacy and Life skills
Survey (ALL) have created a situation where the supporters of education have begun to
question the effectiveness of the educational system. Increased awareness of failing
intervention methods, in turn, created a state of increased scrutiny of pedagogical
techniques that hypothetically supported literacy and literacy improvement programs. As
educational researchers considered the value of educational initiatives focused on
literacy, a dichotomy emerged between the types of pedagogical methods and strategies
(here on known as an intervention) that researchers have claimed to improve learning and
reported test results (Marzano, 2007; Wiggons & McTighe, 2005; Winters & Green,
2005). Literacy teachers began to employ interventions based on research that supported
methodological shifts from traditional practices, yet few international and U.S. reports
showed significant improvement. These comparisons have also suggested that global
competition among U.S. graduates could be jeopardized (Lemke, Miller, & Johnston,
2005; New Jersey High School Redesign Steering Committee, 2008; Winters & Green,
2005), thus heightening the problem even more.

The literacy problem has prompted stakeholders to propose a variety of
interventions to improve academic success. Over the past 10 years, one type of
intervention, which seemed to hold noticeable potential, was predicated on the assumed
positive relationship between emotional intelligence and literacy (Elias, Arnold, &

Hussey, 2003; Mayer, Salovey, & Caruso, 2002, 2004; New Jersey High School Redesign Steering Committee, 2008). The general definition of emotional intelligence is a person's ability to perceive, understand, use, and manage emotions in order to think critically, make decisions, and solve problems (Mayer et al., 2002, 2004). The relative handful of studies has provided promising, yet limited information regarding the potential effects of emotional intelligence on literacy.

School reform efforts, especially literacy initiatives, and the emerging application of emotional intelligence theory has implications for secondary students who embark on postsecondary schooling, work training, or seek to join the entry-level workforce (Elias et al., 2003; Mayer et al., 2004; New Jersey High School Redesign Steering Committee, 2008). The application of emotional intelligence skills in the classroom may actually include emotional intelligence training such as self-reflection and emotional scenario assessment. As mentioned above, research on the merits of emotional intelligence that supports literacy is limited. To address these differences, and to contribute to the knowledge regarding the relationship between emotional intelligence and literacy, I examined the predictive relationship of emotional intelligence scores with literacy scores among secondary students. Understanding the strength of a potential relationship and predictive influence of emotional intelligence may support further inquiry into the notion that high emotional intelligence may improve students' interpretations of literature and precision of expression in their writing.

Historically, educational stakeholders in the U.S. have considered its public education system to be one of their most valued investments (Brimley & Garfield, 2005;

Winters & Green, 2005). This ascribed value, seen most clearly in federal aid policies and grants included initiatives that sought to improve public school children's literacy. The Elementary and Secondary Education Act of 1965 and the No child Left Behind Act of 2002 are testimonies to the political support for education, and they continue to inform nationwide educational initiatives in literacy, math, and science. The public's continued support of local school budgets also represents beliefs that public education is a valuable asset in which they should invest (Brimley & Garfield, 2005; Chirot, 1994).

A nation's educational values resonate through both the voices of citizens, who vote to pass school budgets during pressing economic times, and its educational leaders, who posit ideas for educational reform and proposals for federal grants, such as Race to the Top and i3 (Brimley & Garfield, 2005; McNeil, 2010a, 2010b). In general, people support public education because they want their children to have the opportunity for growth and general success as contributing adult citizens in a global workforce (Brimley & Garfield, 2005; Chirot, 1994). When financial resources begin to shrink, researchers, policy makers, and practitioners, must thoroughly investigate every viable method to improve academic achievements. Unfortunately, in spite of the on-going support and investment, U.S. students have begun to slip behind their peers from other countries (Provasnik, Gonzales, & Miller, 2009). One particular area of concern is literacy (Baer, Baldi, & Ayette, 2007), which is the focus of this research study.

Improvement of students' literacy skills will ultimately improve the preparedness of students to enter the workforce and/or to extend their education beyond high school (Brimley & Garfield, 2005; New Jersey High School Redesign Steering Committee,

2008). Few research reports, that included information regarding emotional intelligence and academic success, actually delineated a focus on literacy (Holt, 2007, Kvapil, 2007; Papadogiannis, Logan, & Sitarenios, 2009; Szuberla, 2005). Although the studies did not specifically investigate the relationship of emotional intelligence and literacy, the general relationship between emotional intelligence and academic success appears to be a promising concept (Holt, 2007; Kvapil, 2007; Mayer et al., 2002, 2004; Szuberla, 2005).

The lack of focus on literacy is unfortunate because emotional intelligence training is potentially a didactic intervention, in which instructors and students teach and learn emotional skills respectively. As an intervention, emotional intelligence instruction for students could improve literacy and communication in postsecondary experiences. Emotional intelligence training could be especially impactful when one considers the potential emotional and academic growth for students who have difficulty expressing themselves in dialogue, let alone written form.

Inquiry into the impact of emotional intelligence, on a variety of skills, has been increasing worldwide (Eynde & Turner, 2006; Gardner, 1999; Zhoa, 2007). Researchers have noted that people who have low emotional intelligence also often have problems including relationship difficulties with coworkers, weak abilities when creating product solutions, and inabilities of problems solving around global issues (e.g. Elias et al., 2003; Li, Yang, & Shen, 2007; Mayer et al., 2004; Zhao, 2007). The effects of interpersonal problems align with baseline skills necessary for proficiency in literacy. For the purpose of this dissertation, baseline skills include two-way communication and expressions.

Considering emotional intelligent preparedness, students who do not understand emotions may not be able to manage their emotions for personal growth, in areas such as literacy (Mayer et al., 2008). The complex problem of improving literacy and communication skills within the educational community could have a simple solution. That is, the use of a socially and emotionally enriched curriculum within secondary schools' instructional infrastructure holds great potential to improve literacy (Elias et al., 2003; Gardner, 2006; Goleman, Boyatzis, & McKee, 2002). Although the contemporary definition of emotional intelligence theory in this study is based on Mayer, Salovey, and Caruso's (2002) four-branch model of emotional intelligence, Gardner (2006) grounded the emerging definition of intelligence and seemingly initiated ideas around emotion in his discussions regarding personal intelligences.

Delving Gardner's (1993, 1999) multiple intelligence theory and Mayer, Salovey, & Caruso (2002, 2004, 2008) emotional intelligence theory, logic suggested that a person's literacy skills may improve when they enhance said skills with emotional intelligence. It is important to study the relationship between emotional intelligence and literacy to determine the strength of the assumed positive relationship and provide explanation when confounding variables are included in the analysis. Gardner (2006) specifically noted the great interest among social scientists in an area of personal intelligences. Although emotional intelligence did not fall under Gardner's definition of an intelligence, the Mayer et al., (2008) four-branch theory of emotional intelligence is similar to Gardner's (1983, 2006) definition of personal intelligence. The underlying

applications of these theories have potential implications on student success via literacy interventions.

Students who demonstrate expertise using the perception, understanding, use, and management of emotions may be better equipped than their peers may. For example, students who have strong emotional skills may be more efficient over emotionally weak peers when they make informed decisions, create useable products, or form creative solutions to pressing social issues when they enter society and the workforce (Gardner, 2006; Mayer et al., 2008; Zhoa, 2007). The hallmarks of success, which may include leadership experiences and winning team membership, align with the emotional skills necessary for potential growth and success in communication and literacy (Gardner, 2006; Senge, 1990; Senge, Smith, Krushwitz, Laur, & Schley, 2008). Prior to entering the workforce, however, at what point and to what degree must students engage in learning about emotion as it relates to communication and literacy?

U.S. high school graduates who enter college or the workforce will need sharpened communication skills in a variety of work responsibilities that require communication among peers or coworkers (Rosenbaum, 2007). Peoples' verbal intelligence skills generally grow with their ability to express themselves using higher literacy skills, such as interpretation, analysis, and expression (Gardner, 1999, 2006; Baer et al., 2007). Theoretically, if a person's personal skills and verbal skills interact in order to develop efficient communication (Gardner, 1983, 1999) and at the same time, it is true that all humans have basic emotional expressions such as happiness, then high emotional intelligence may predict the ability to express oneself at higher literacy levels. Simply,

the personal skills that are associated with emotional intelligence could be the common link to improving students' literacy abilities (Gardner, 1983, 1999, 2006; Mayer et al., 2008). Literacy skills are so critical to communication that the U.S. Department of Education has employed national surveys to identify literacy trends in efforts to determine areas for improvement.

Progress in International Reading Literacy Study (2007) indicated that strong literacy skills related to a person's ability to interpret and make sense of text (Baer et al., 2007). Further, the bridge that connects higher levels of literacy skills occurs when a person can "interpret complex information from different parts of text" as well as "integrate ideas across text to provide interpretations about…feelings and behaviors" (Baer et al., 2007, p. 4).

Holt (2007) and Szuberla (2005) found some degree of evidence that in general, emotional intelligence scores correlate with academic achievement. Academic achievement could be considered a student's grades or how often the student has a discipline referral. Academic achievement has been loosely defined, and this lack of clarity caused a gap in emotional intelligence literature. Inquiry, into the possible relationship between emotional skills and literacy, may provide understanding and guidance for further investigation of solutions to the ongoing literacy problem (Papadogiannis et al., 2009).

To address the literacy problem among U.S. students, interventions have been trialed. Unconfirmed effects of instructional interventions seem to compound a broad focus of diagnostic tools to improve literacy. The implication of emotional intelligence as

an instructional intervention has not been clearly identified; meanwhile, student literacy

scores remain stagnant when compared with global counterparts (Baer et al., 2007;

Provasnik et al., 2009). Although some studies have observed correlation between

general academic achievement and emotional intelligence (Holt, 2007; Kvapil, 2007,

Szuberla, 2005; Papadogiannis et al., 2009), the gap seemingly widens, without a clearly

delineated focus on the potential influence of emotional intelligence on literacy (Elias et

al., 2003; Goleman et al., 2002). In this study, I sought to clarify the nature of the

relationship regarding emotional intelligence and literacy among secondary students.

Problem Statement

For more than a decade, literacy skills of children and adults have tended to

remain unchanged or worsened (Baer et al., 2007; Lemke et al., 2005). The literacy

problem is important to study to understand factors that may influence the development

of literacy skills. Generalized to school aged and adult populations of the United States,

international studies showed that the U.S. only out performed a few countries (Baer et al.,

2007; Lemke et al., 2005). Reports such as ALL and PIRLS have educational

stakeholders concerned. Organizations have also expressed concerns that secondary

students were underprepared for higher education or postsecondary job placement (NJ

High School Redesign Steering Committee, 2008). Low literacy skills contribute to under

preparedness for life after secondary school (Baer et al., 2007; Lemke et al., 2005).

These findings suggested that steps need to be taken in order to improve literacy rates

and, in turn, improve the global competitiveness of these students (Baer et al., 2007;

Lemke et al., 2005). In spite of decades of educational research and reform efforts,

however, the best methods to address these concerns have not emerged and student achievement appears to be worsening or unchanged on a global comparison (Baer et al., 2007; OECD, 2010).

Emotional intelligence training appears to be, an unexplored, but viable strategy to address this challenge in education. Limited evidence on the relationship of emotional intelligence and literacy prevents the effective implementation of this approach. Hence, gaining a better understanding of the relationship of emotional intelligence to literacy skills appeared to be a necessary way to address this problem. This study contributed to the body of knowledge needed to address this problem by studying the extent of the relationship between emotional intelligence scores (EIQ) and High School Proficiency Assessment for Language Art Literacy scores (HSPA-LAL) on a state standardized test, while controlling for gender and grade point average (GPA).

Purpose Statement

The purpose of this multiple regression study was to examine the relationship between literacy skills and emotional intelligence, while controlling for gender and GPA at two New Jersey public schools. Emotional intelligence, the predictor variable, was reported as a total score, indicating a person's overall EIQ or emotional skills. Literacy, the criterion variable, was reported as a total HSPA-LAL score, LAL measured a student's literacy skill. I selected gender and GPA as control variables to account for potential effects on the criterion variable. Understanding the relationship between literacy and emotional intelligence was important to this study because there is potential influence

of emotional intelligence on literacy skills that have implications of the intervening

methods applied to teaching literacy.

Research Question

My primary research question was: Is there a correlation between EIQ and the

HSPA-English-LAL scores of secondary students, after accounting for the effects of

gender and GPA?

Hypotheses

H_0. There is no correlation between the EIQ and HSPA English-LAL scores of

secondary school students, after accounting for the effects of gender and GPA.

H_a. There is a positive correlation between EIQ and HSPA English-LAL scores

of secondary school students, after accounting for the effects of gender and GPA.

Nature of the Study

In this quantitative study, I examined the strength of a predictive relationship

between EIQ and literacy, while controlling for the effects of gender and GPA. I

considered a mixed method approach because that type of analysis would increase the

amount of rich, descriptive data; however, I rejected this design due to the complexity

and time constraints. A qualitative study would negate efficient use of quantitative tools

that seemed to be reliable measurement instruments. Additionally, the use of interval

tools was an attractive element to use for the prediction model and accompanying

regression statistics. Therefore, I also rejected a qualitative approach.

After I randomly selected my sample, I worked with an external agency that

administered and scored the MSCEITs, while I collected the HSPA LAL scores. After I

completed collection of the HSPA LAL scores, as well as control variable data, then I ran statistical analyses. Employing multiple regression statistics, the statistical software package (SPSS), showed the predictive ability, in terms of emotional intelligence and success on HSPA scores, controlling for the effect of gender and GPA, at the secondary school level.

It was appropriate to control for gender because girls are likely to score higher than boys on literacy tests (PIRLS, 2006). Controlling for this effect would explain that a relationship is due more directly to strong correlation between MSCEIT scores and literacy scores (e.g., Baer et al., 2007; StatSoft, 2011). If boys scored high on the MSCEIT and on the HSPA, this correlation may again provide explanatory power for girls, in general, who score high on literacy tests. Because girls mature earlier than boys do (both physically and verbally) and women place more consideration on interpersonal characteristics (Gardner, 1999), logic suggests that girls would be able to express themselves more efficiently and earlier than boys would.

Considering general academic achievement, students who perform well on tests will likely have a higher GPA. That is, those students who scored well on the MSCEIT and HSPA would also have a high GPA. Controlling for the effect of GPA and discovering a strong correlation between MSCEIT and HSPA scores would attribute the result more directly to that relationship (e.g., StatSoft, 2011). Explained further in Chapter 3, multiple regression was the statistical procedure that I used to determine if a relationship existed between the predictor variable, emotional intelligence, and the

criterion variable, a student's LAL test score while controlling for the effects of gender and GPA.

Theoretical Perspective

The grounding theory in this study was the Mayer, Salovey, and Caruso (2002, 2004) four-branch model of emotional intelligence. The theorist believed that people have a total emotional intelligence quotient that indicates the strengths or weaknesses of how a person can use, understand, perceive, and manage their emotions in order to think critically, make decisions, and solve problems (MHS, 2002; Mayer et al., 2002, 2004). Seemingly, the theory is an extension of Gardner's (1983, 1999, 2006) work regarding multiple intelligences and Darwin's (1872) position on the expression of emotion in man.

Gardner (1983, 1999) actually categorized two subtypes of personal intelligence called interpersonal intelligence and intrapersonal intelligence. Similar to versions of emotional intelligence, interpersonal intelligence is a person's ability to understand others, and intrapersonal intelligence "involves the capacity to understand oneself…." (Gardner, 1999, p. 43). Delving further into the components of these intelligences, each person's ability to communicate lies within his or her ability to perceive and use emotions to make informed decisions that ultimately solve problems or create usable products (Mayer et al., 2008). For example, employers believe that soft skills (such as communication, ability to perceive emotion, and expression), build the framework for success. Employers thought, logically, that the application of soft skills improved the profits of the company (Brimley & Garfield, 2005; Olson, 2007). Further, logic suggests that a person may apply soft skills only if they develop them in the first place. Therefore,

the foundations of literacy, emotional skills, are at the crux of proficient reading and writing.

Many iterations of emotional intelligence theory have occurred (e.g., Goleman, 1995), but the basic concept has remained largely the same. Mayer et al. (2004, 2008) created a construct that reasonably measured emotional intelligence using the MSCEIT version 2.0 and administered through Multi Health Systems (MHS). The test is comprised of participants' over-all emotional intelligence score or EIQ. Multi Health Systems also report two area scores and four branch scores that measure specific constructs of the Mayer et al. (2002, 2008) four-branch model.

Emotional intelligence is not a new idea, and appears to date back to one of Darwin's (1872) less publicized theories regarding the idea of innate expression and emotion. Darwin posited that humans are born with basic emotions expressed innately using facial expressions such as a frown or a smile. In the late twentieth century, Goleman (1995) popularized emotional intelligence with his publication entitled *Emotional Intelligence: Why it can matter more than IQ*. The book made the bestseller list and prompted many social scientists to analyze the theory for applicable uses and implications on behavior and learning (Gardner, 1999). For example, Maul (2008) studied the MSCEIT for validity and reliability of the scores. Dardello (2007) investigated the implications of emotional intelligence training and predictive ability on behavior. Holt (2007), Kvapil, (2007) and Szuberla (2005) studied the strength of correlation between emotional intelligence training and academic success in elementary,

secondary, and post secondary schooling. None of these studies, however, specifically focused on the possible relationship between EIQ and literacy.

The Mayer, Salovey, and Caruso (2004) theory used in this study parallels the criteria of intelligence that Gardner (1983, 1999, 2006) posited in his original work. Mayer et al. (2004, 2008) characterized intelligence as ability based because people make decisions to solve problems and create usable products. Those skills are of value to the culture (Gardner, 1999; Mayer et al., 2004, 2008). In this study, I determined the degree of correlation between EIQ and literacy achievement by comparing scores from MSCEIT and HSPA-LAL portion. Researchers have agreed that the theoretical perspective regarding emotional intelligence is a viable explanation for academic achievements but few studies delved into literacy.

Definition of Terms

Academic achievement: The score on the English portion of the High School Proficiency Assessment will serve as a proxy of academic achievement (New Jersey Department of Education, 2006).

District Factor Group: The New Jersey Department of Education (NJ DOE, 2006d) identifies a District Factor Group or DFG by grouping similar demographic characteristics and approximate socio economic status (SES). The NJDOE uses the DFG system as an analysis tool for investigations in areas, such as student assessment and student achievement.

Emotional intelligence: Emotional intelligence (EIQ) is the predictor variable as measured by the MSCEIT. Mayer, Salovey, and Caruso defined emotional intelligence as

the capacity to reason about emotions, to accurately perceive emotions, and to use emotions that facilitate critical thinking and problem solving. It includes the ability to understand emotions in an interpersonal context and to manage emotions that promote personal and intellectual growth, such as creating products and improving literacy (Mayer et al., 2004, 2008). Note that EI and EIQ were used in this dissertation. EIQ was used to imply a person's EI skills and actual MSCEIT score. EI was used to describe general emotional intelligence.

Instructional intervention: A pedagogical method or strategy used to instruct students with the intent to improve knowledge and skills (NJDOE, 2008).

Literacy: English Language Arts Literacy (LAL) is a student's ability to comprehend what they read and then write responses to testing prompts. Their answers to test questions will be in the form of selected response as well as writing in the form of paragraphs. Their paragraphs should demonstrate their ability to understand, analyze, and evaluate literally as well as inferentially. Their constructed paragraphs should also demonstrate persuasive writing skills as outlined in the New Jersey Core Curriculum Content standards (HSPA guide, 2006, p. 3, NJDOE, 2008).

Secondary school: In the New Jersey public school system, secondary school teachers instruct students in grades 9-12 according to the New Jersey Core Curriculum content standards (NJDOE, 2009). Private schools were not included in this study.

Stakeholder: An education stakeholder is a person who influences or makes decisions that affect public education. The influences occur during the decision-making processes of schools on a micro or macro level. Federal and state government, board of

education, administrators, teachers, parents, students, and educational researchers,

influence the decision making process or actually make decisions and, therefore, are all

stakeholders.

Assumptions

I based the procedures of this study on three assumptions. First, I assumed that the

specific measurement tools had best-fit applications. Completing the MSCEIT online,

rather than paper and pencil, is easier for a researcher to administer and more convenient

for the participant (Holt, 2007; Kvapil, 2007). Additionally, the online test provided data

in a cost-effective manner and decreased the time spent on data collection. Second, I

assumed that participants would provide honest answers on the self-reported online

MSCEIT because they had the opportunity to complete the assessment with the assurance

of anonymity (Johnson & Christenson, 2004; Leedy & Ormrod, 2005). Third,

participants were familiar with selected-response testing procedures. For example, most

of the participants that I included in this study had taken state standardized tests in

Grades 6, 7, and 8, prior to taking the Grade 11 state mandated HSPA. I randomly

selected participants and invited them to participate in the study. The students who chose

to participate received parent consent and assent forms prior to completing the online

MSCEIT. Included in the directions, the participants were encouraged to take the

MSCEIT at any computer that had access to the Internet and at their convenience.

Limitations of the Study

Emotional intelligence is one component of many variables that influence

performance in a person's daily routine, such as at work and school (Mayer et al., 2002).

Based on the theoretical ideas of emotional intelligence, I intended to investigate the specific relationship predictability of EIQ on literacy rather than general academic success. The predictability of EIQ on literacy limited the study to generalization of the students of the same age and demographic background. Second, strategies to reduce measurement error included: (a) providing a safe testing environment for administration of the HSPA, (b) encouragement of participants to take the MSCEIT in a private testing environment, (c) elimination of test administration for the MSCEIT, and (d) required training for administrators of the HSPA. MHS and NJDOE analyzed the MSCEIT and HSPA respectively for reliability, however, participants' observed scores and true scores may have fluctuated (e.g., Salter, 2005), and thus generalization was limited to the observed scores in the data analysis.

Delimitations of the Study

Generalizations, without considering more than the two control variables (gender and GPA), may have implications on a larger population; however, an investigation with the use of additional control variables, was outside of the scope of this study. For example, teacher and parental influence on a student's emotional skill may have implications on the student's expression and literacy (Evans, 2002; Holt, 2007; Mendes, 2002). I did not have the time or resources to extend the study to a larger population. Additionally, it was not my aim to predict teachers' influence on a student's emotional intelligence in this study. Although evidence exists that people influence other people's learned emotional skills, such as a teacher's influence over students, the scope of this study did not include data collection from teachers. While planning this study, I decided

to focus on the problem of literacy by understanding the potential implications of the relationship between overall EI skills and literacy skills among secondary students (Holt, 2007; Kvapil, 2007). My aim for this study was to focus on secondary students because social and emotional lessons in school tend to decline as students enter secondary school (Elias et al., 2003). I have limited the study to include New Jersey students simply because I only had access to those participants.

Similar to the scenario above, I did not attempt to assess parents' influence on their child's emotional intelligence. Although there may have been explanatory power from the participants' family backgrounds and experiences, these data are often broad and potentially difficult to interpret. Also mentioned above, choosing to include many predictor variables can be an attractive choice of a researcher, but too many variables may create a statistical problem when using a multiple regression model. The odds of finding a group of predictor variables that stay close to the regression line increase, but may not be accurate when coupled with smaller samples (StatSoft, 2011). Family backgrounds and recorded detailed experiences may be a better fit for a qualitative study.

Significance of the Study

The significance of this study is the contribution to the empirical literature regarding emotional intelligence and literacy among students. Focusing this study on the literacy problem was important because the results provided additional synopsis that either defended or refuted previously reported correlation between EIQ and academic success, especially literacy. This study may help guide future researchers to include separate control variables as they develop studies that investigate emotional intelligence

and literacy. For example, researchers have linked cultural characteristics and low literacy scores when considering race and income (Johannessen, 2004). However, there is limited information that investigated levels of emotional intelligence while also considering race, income, and prediction of literacy.

My interpretations of these data from this study supported the importance in delving into larger-scaled and true, experimentally designed studies that include a treatment group. Researchers may theorize about the emotional causes of the strengths and weaknesses of literacy skills if treatment groups were accessed. Identifying cause and effect factors within the classroom and on a large scale can be problematic for researchers when considering logistics, yet researchers have noted that inquiry into this idea is important. Nelis, Quoidbach, Mikolajcak, and Hansenne (2009) began to investigate causal notions of EIQ with a small group, thus this investigation is timely.

Social Contribution of the Study

The implications of the effects of emotional intelligence on the social aspects of a global workforce provided rationale for emotional intelligence interventions that schools may implement to improve literacy, and thus the opportunities of children. Literacy interventions may include screening for emotional deficits, emotional intelligence training, or both. As studies emerge around improving emotional intelligence, opportunities for prosperity, career opportunities, and socioeconomic status may also improve for secondary students (Nelis et al., 2009). If the schools' social infrastructures that connect educational staff, students, and their families improve, then increased opportunities for improved literacy and communication skills by using collaborative

efforts may be gained (Bergen & Fromberg, 2009; Gardner, 1983; Holt, 2007; Jacobson, 2007; Kvapil, 2007). A collaborative mindset is a paradigm shift similar to the framework of European educational models, such as, Regio Familia Schools in Italy and Montessori Schools, in the United States (Jacobson, 2007). Students can accomplish improved literacy and communication skills by sharpening the way they interact with family and teachers using their perception, use, understanding, and managing of their emotions in order to make multiple perspective decisions (Mayer et al., 2004, 2008; Zhao, 2008).

Additionally, this study contributes to positive social change by furthering the scholarly information regarding human behavior and emotional growth among teenagers, as they transition to post secondary school endeavors. The applicable aspects of this study provide a rationale for improving the understanding of the role of emotional intelligence in schools, rather than maintaining the current standards. The social implications are relevant to both the organizations and the people who comprise those organizations, with a focus on the teaching and learning process of students (Freire, 1970 & 1998; Senge, 1990). When considering STEM (Science, Technology, Engineering, and Mathematics), which are the core classes of academics, then the application of EIQ interventions may improve communication and literacy across all classes. With this in mind, then both the students and the organization may flourish (Marzano, 2007; Senge, 1990).

Summary

While completing this quantitative study, my objective was to determine if a significant positive relationship existed between students' scores on the MSCEIT (2004, 2008) and academic achievement in English literacy. The psychological and behavioral epistemologies of Darwin (1872), Gardner (1983, 2006), and Mayer et al. (2008) grounded the study. I describe these theories in greater depth in Chapter 2, the literature review.

As I introduce in Chapter 2, facial expressions, common to all people, evidenced the idea that every human has basic emotions (Darwin, 1872). I explore the ideas of facial expressions that overlap the ideas regarding multiple intelligences such as the concepts of linguistic intelligence, interpersonal intelligence, intrapersonal intelligence, and emotional intelligence. As these ideas overlapped, I developed a hypothesis that the communication skills expressed in literacy may improve as a person's EIQ increases.

In Chapter 3, I present the study design and methodology of the study. I explain the administration of the MSCEIT to a group of students, and how I made a comparison of their EIQ with their HSPA LAL scores to determine if a positive relationship existed(while controlling for the effects of gender and GPA). The discussion includes an explanation of the data collection tools, as well as the statistical procedures that determined if a correlation existed. I also provide further information regarding multiple regression statistics that I used on the controlling predictor variables. In Chapters 4 and 5, I present the statistical analysis, findings of the study, and discuss ideas for social change.

Chapter 2: Literature Review

As I explained in Chapter 1, some research has been conducted to clarify the

implications of emotional intelligence (EI) for academic achievement, but the problem is

that experts either do not agree or have not tested for a correlation between EIQ and LAL

among secondary students (Dardello, 2007; Holt, 2007; Mendes, 2002; Szuberla, 2005).

According to Mayer et al. (2008), "Since 1990, EI has grown into a small industry of

publication, testing, education, and consulting. . . . Yet the apparent size of the field

dwarfs what we regard as relevant scientific research in the area" (p. 503). The

implications of EI for individual and group performance has reached into the area of

business and business leadership, health care and nursing, clinical psychology and

neuropathology, education and academic achievement, and sports management and

athletic performance (Farrelly & Austin, 2007; Grisham, Steketee, & Frost, 2008; Lane et

al., 2009; Pishghadam, 2009; Walpole, Isaac, & Reynders, 2008).

The organization of this literature review includes research related to secondary

students who are underprepared for the workplace and the relationship between EIQ and

literacy. I introduce the historical ideas around educational reform and discuss ideas

related to contemporary educational methods and strategies. The review also includes

information regarding multiple intelligence theory with a focus on the Mayer et al. (2004)

four-branch model of EI theory, which is associated with Gardner's (1993, 1999) theories

on personal and linguistic intelligences. In the literature review, I also discuss prior

studies focused on EI and the implications on academic success. The rationale for the

current study regarding EI, and related linguistic intelligence, set the stage for a critique

of current psychometric measurement tools such as the Bar-On Emotional Quotient

Inventory (EQ-i,) and the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT).

Finally, I revisit the research variables and methodology that I introduced in Chapter 1,

and present the rationale for using the MSCEIT over the EQ-i. The research strategies

that I employed in this literature review included: (a) book reviews that I used for

preliminary research related to multiple intelligence theory and subsets such as linguistic,

personal, and emotional intelligence; (b) peer reviewed journals found in electronic

archives such as Ebsco and ProQuest; (c) published dissertations found in Dissertation

Abstracts International; and (d) search engines on the Internet such as Google. I used

search terms and derivatives such as: (a) emotional intelligence, (b) literacy, (c) emotion,

(d) writing, (e) expression, (f) intelligence, (g) emotional skills, and (h) teacher training.

The Cold War Mindset and a Nation under Reform

At the local level, individuals who comprise a Board of Education often govern

the school. A problem in education is that many governing leaders maintain a Cold War

mindset, noted in *A Nation at Risk* (1983) and evidenced with a focus on standardized

tests. This report noted the condition of America's public schools and recommended

deep reform. Although the *Nation at Risk* (1983) cohort's vision included global

consideration, they framed it as national competitiveness against other nations rather than

firmly positioning the United States for the future of a globalized world:

> If an unfriendly foreign power had attempted to impose on America the mediocre
>
> educational performance that exists today, we might well have viewed it as an act
>
> of war. As it stands, we have allowed this to happen to ourselves. We have even

squandered the gains in student achievement made in the wake of the Sputnik

challenge. (para. 1)

The report provided examples of the competition, including Japan's auto industry,

South Korea's steel milling industry and efficiency, and Germany's expertise of

machining tools. Similar reports supported reform efforts of the time because of the poor

condition of the nation's public education (Boyer, 1983; Goodlad, 1983). Much reform

literature, especially *A Nation at Risk* report (1983), lacked empirical data, but provided

rich discussion based on normative data. The strong language of the report indicated the

18-member cohort's experience and attitude about society, economics, policy, science,

and higher education. They positioned the recommendations for improvement and needs

for children to grow and learn in an increasingly globalized world. For students to

function in a globalized world they will need mastery of knowledge and skills that spread

faster and on a larger scale, than past commerce ideas such as blue jeans and

pharmaceuticals drugs. Further, students will need spiritual strengths ("A Nation at Risk,"

1983).

This fundamental and necessary approach to collaborate within a global arena is

not only overlooked in theory and practice in the current state of education, but

educational leaders overlook social and emotional support and learning by the time

students reach secondary school (Elias et al., 2003). This problem extends to other areas

of academia. According to Chirot (1994) and Zhao (2007), the recommendations for all

Americans to receive a global education by the year 2000 outlined in the Nation at Risk

(1983) report have fallen short. The report indicated an imperative to provide the millions

of new workers who enter the workforce each year an opportunity to "further education and retraining if they--and we as a Nation--are to thrive and prosper" (para. 3).

The cold war mindset is in contrast to what many social scientists believed. Chirot (1994) and Zhao (2007) believed that successful schools must provide American teachers and their students the autonomy and skills that will help them support and motivate the whole child through creativity. Creative classrooms inherit basic intelligences such as voice and emotion (Freire, 1970; Gardner, 1993; Wiggons & McTighe, 2005). Even 20 years ago, and after *A Nation at Risk* (1983) reported that American public schools were in need of reform, the United States has remained a competitive and leading industrious nation, both traditionally and contemporarily. By chance, rather than by design, the autonomy observed in some classrooms allowed teachers in the United States to promote dynamic and creative approaches toward solving problems. Those instructional approaches provided opportunities for global competiveness (Chirot, 1994, p. 113).

Competitiveness among secondary school students observed in class ranking and overall school rankings supports the theory that students must practice in their daily routines creative learning and delivery through written and spoken word. Written and spoken words are students' developmental skills and they should practice using those skills by engaging in emotionally stable and reflective dialogue every day. Despite this knowledge, Zhao (2007) pointed out that "current reforms are undermining the nation's competitiveness by squelching creativity, squeezing out space for intelligences and talents that are truly needed in the global economy, and taking resources away from

students" (p. 10). On the other hand, U.S. counterparts in Singapore a half a world away, noted the importance of flexibility, autonomy, and creativity and they acted upon it by implementing career and technology education programs. The programs have American policy makers and educational leaders intrigued (Cavanaugh, 2009).

Elias et al. (2003) and Zhao (2007) believed educational leaders should include space in curriculum content for flexibility such as EI, rather than suppressing it, because secondary school students as well as 4-year college students need it desperately. Job market employers, according to the New Jersey High School Redesign Steering Committee (2008) contended similarly; entry-level employees need a good foundation in emotional skills that support communication, a sub skill of literacy. Zhao further contended that a globalized economy is also an economy that cultivates a diversity of skills, but what often happens is students are trained like robotic STEM machines lacking the lubrication needed to keep running smoothly and under prepared for life outside of school.

Zhao maintained that business leaders who require science and math as a requisite for their jobs, more times than not, outsource to another person who will work for less in another country; there is no commitment to U.S graduates. In a terrible yet redundant cycle, students often do not extend their communication skills, literacy, and thus practice their EI as they focus on mastery of science and math without practice communicating through written and spoken word in these areas. Communication gaps occur, and as these gaps in communications widen, when the emotional sensitivity of interpersonal and intrapersonal conflict as well as group conflict occur (Gardner, 1999; Covey, 1989). All

of these areas, such as intrinsic motivation, communication, and emotion, fall under a specific psychological entity first identified by Gardner (1983). In a commentary, Gardner (2008) addressed the implications of communication on society:

> In the past 150 years, each new medium of communication – telegraph, telephone, movies, radio, television, the digital computer, the World Wide Web – has introduced its own peculiar mix of written, spoken and graphic languages and evoked a chaotic chorus of criticism and celebration. (p. 3)

Although only predictions can be made about new discoveries or inventions for media, such as the wireless telephone or internet, people will continue to communicate largely through voice and writing. It is for this reason that the culture of learning must continue to support literacy found in the linguistic intellectual capacities of each individual and supported by EI (Gardner 1993, 2008; Mayer et al., 2008). As Gardner (1993, 1999) illustrated, linguistic skill includes much more than speech itself. Communication includes all aspects of the way people convey messages to one another. Communication may include written text and symbols, verbal sounds and speech, pantomime motions, facial expressions, gestures, and body language as well as drawings and other sounds taken in singularity or in multiple avenues.

A Closer Look at the Theory of Multiple Intelligences

Students develop and possess culturally important skills while attending American schools. As Collins (2001) found by using longitudinal strategies, he revealed a variety of fundamental work skills and decisions that are critical to success in corporate America. Those work habits overlap with the skills associated with multiple intelligence

theory. From corporate America to educational reform, qualitative strategies such as

action research projects, exit interviews, and questionnaires, help researchers to

investigate commonalities among the problems in which they are interested

(Lindenbaum, 2009). Vinella (2007) explained that school reformers must consider trends

in the workplace. Reformers and researchers may address those trends by revising

curriculum, assessment, and instructional methods and strategies (Marzano et al., 2001).

For example, a solar engineer will not only need improved skills in technical areas such

as picoseconds and spectroscopy, they will also need to be able to collaborate in face to

face working relationships, as well as in written forms via internet emails, real time

medias like IMs, text messaging, and chat rooms. The gamut of work force skills that

workers need to master include intrapersonal skills, such as individual responsibility,

self-management, and self-efficacy, as well as a mix of interpersonal and linguistic skills

like communication, conflict management, and teamwork (Collins, 2001; Gardner, 1999;

Vinella, 2007).

Linguistic Intelligence

Communication includes both verbal and nonverbal methods to express one's

ideas, thoughts, feelings, desires, and needs. People may communicate using typical skills

such as verbal language and sounds or atypical pantomime skills such as movements with

their hands or body. Further, written words and universal symbols help to limit language

barriers. With such a need for strong communication among people, it is not surprising

the emphasis placed on learning and applying communicative skills in culturally

important arenas that begin in the classroom between students and teachers. Gardner

(1979) emphasized that "a human intellectual competence" such as linguistic or personal:

> must entail a set of skills of problem solving-enabling the individual *to resolve*
>
> *genuine problems or difficulties* that he or she encounters and . . . to create an
>
> effective product . . . must also entail the potential for . . . *creating problems* . .
>
> .for the acquisition of new knowledge." (p. 61)

People may demonstrate having a strong linguistic intelligence by using methods

to communicate to solve problems or create products that are culturally valuable, such as

the advancements made in the area of communication with infants. Many infants as

young as 12 months do not typically have the muscular control of their voice, mouth, lips,

or tongue and cannot speak, but do produce elementary communicative signs with their

hands (Gardner, 1993). Such discoveries may diverge into creative ideas and

advancements in communicative technology such as computerized logic that increases

both the speed and the precision of decision-making, (decision-making that people often

cloud with emotional uncertainty). For example, people show uncertainty during

decision-making processes used in automobile safety. Recent examples of real-time

automobile safety technologies include preventative technology such as all wheel

steering, automated headlight power and direction, anti-locking breaking systems (ABS),

as well as global positioning systems (GPS). Additionally, scientists and engineers

developed automated airbags and on-board automated telephone calls to 911 or an

operator as reactionary decision-making devices to improve automotive safety. These

concrete areas simultaneously shine light onto the limits between computerized (non-

emotional) communications and the spoken word that humans employ, especially

teachers who stray little from the lecture line. Emotionally perceptive people notice the

use of intonation, volume, pitch, and speed, and they become sensitive to the meaning of

words. An "individual appreciates the subtle shades of difference between spilling ink

'intentionally,' 'deliberately,' or 'on purpose'" (Gardner, 1993, p. 77).

Additionally, distinctions among and knowledge attainment of four linguistic

competencies influence a person's use of language and may heighten their level of

linguistic intelligence. Linguistic competencies include areas such as rhetoric, mnemonic

strategies, explanation, and language analysis and these competencies are all-necessary in

order to acquire overall intellectual strength in oral and written forms of language. The

emotional connection in this area is the ability to perceive emotions and use emotions to

analyze language in written and verbal forms. Merriam Webster (2005) defined rhetoric

as "The art of using words effectively, especially in prose composition" (p. 553).

Further, Gardner (1993) explained that rhetoric is an individual's ability to use language

to convince others of a course of action. The use of rhetoric is apparent, methodically, in

many persuasive speeches. For instance, a senator may employ these strengths when he

addresses the House to move on a bill, or an attorney may use rhetoric as she litigates in

the presence of a jury who she tries to persuade to move on a decision. Mnemonic skills

help people remember, organize, sort, prioritize, and list anything from recalling the

letters of the alphabet using song, to rebuilding a gas-powered engine by memorization of

the engine parts and the order in which they reattach them to the engine. The third area of

language, explanation, occurs often when a person uses language in oral and written form

to describe a concept or give instruction. The hard sciences rely on language in textbooks to clarify difficult concepts rather than using logical-mathematical reasoning or symbol systems.

Additionally, the use of explanatory strategies is a skill often employed as people participate in a teaching and learning environment (Gardner, 1993). Pragmatically, explanation is the skill most widely used by teachers who rely on traditional pedagogical strategies such as question and answer, lecture, or as contemporary pedagogical strategies such as the new American lecture series, which highlights the most important concepts or subcategories within the main objectives of lesson or lecture. Finally, a profound use of language occurs when students redirect their peers or themselves to reflect on the prior use of language. Simply, people use language "to explain [their] own activities" (Gardner, 1993, p.78). Gardner illustrated, "We can see intimations of this capacity in the youngest child who says, 'Did you mean X or Y?'-thereby redirecting his addressor to reflect upon a prior use of language" (p. 78). Further, as a person observes and analyzes language (language analysis), the choice of words used in prose or as an orator becomes evidently necessary to convey the most accurate and persuasive message in order to explain the sought activity. Gardner (1993) explained, "The goal of the scholar is to describe with accuracy a problem or a situation that he had elected to study; and to convince others that his vision, his interpretation of the situation, is appropriate and accurate" (p. 96). Collectively, the four linguistic competencies combined with the use of tone, expression, and gesture increases the power, precision, and overall use of communicative skill in written and verbal form.

Children and teens experiment with skills such as expressive rhetoric as they develop vocabulary. These experiences facilitate the use of words with similar meaning yet emphasize specific nuances in the delivery of their writing and through an active voice. Children and teens go so far to create words such as "phat" meaning impressive, extraordinary, or great. An example described on the Merriam-Webster Online dictionary (2007) demonstrated rhetoric in a contemporary on-line era. W00t, spelled with two zeros is a multifaceted interjection (if that term exists) that indicates expression of joy and is similar in use to the word "yay." The word took top honors from thousands of votes online and advertised as Merriam-Webster's word of the year for 2007. The website indicated the origin and meaning of the word:

The word you've selected hasn't found its way into a regular Merriam-Webster dictionary yet—but its inclusion in our online *Open Dictionary*, along with the top honors it's now been awarded—might just improve its chances. This year's winning word first became popular in competitive online gaming forums as part of what is known as l33t ("leet," or "elite") speak—an esoteric computer hacker language in which numbers and symbols are put together to look like letters. Although the double "o" in the word is usually represented by double zeroes, the exclamation is also known to be an acronym for "**w**e **o**wned the **o**ther **t**eam"— again stemming from the gaming community.   (http://www.merriam-webster.com/info/07words.htm)

The use of one, single word may be multifaceted. There is an obvious regression to phonic language. The implementation and inclusion of numbers in a word

acknowledges the complexity of linguistic intellect and still the simplicity and enthusiasm of the people who created the word. When considering W00T can be used as an interjection as well as an acronym, the usage illustrates the speed at which people can express themselves in written language, as well as live voice using a single word in a one-two punch. Merriam-Webster (2007) supported this concept, "the vast majority of you chose a small word that packs a pretty big punch" (http://www.merriam-webster.com/info/07words.htm).

With the fast pace at which the people of the information era interact during their work, play, or dialogue, it is easy to understand another, supporting, yet separate intellect referred to as personal intelligence. When an individual employs the linguistic skills such as the competencies and delivery strategies listed above with expressive rhetoric, readers and listeners may experience feelings of emotion. Emotion has some strands leading to the fabric of the personal intellect that will be the focus of the next section.

Personal Intelligence

Personal intelligences actually describe two subcategory intelligences that represent a person's extroverted and introverted skills. Gardner (1993, 1999, and 2006) identified interpersonal and intrapersonal skills as the two general areas where a person's skills can lead him or her to solving social issues, problems, and phenomena. Additionally, the person may employ personal intellect to facilitate meaningful opportunities to create culturally valued products such as the recent surge of self-help books that promote self-efficacy and strategies to improve insight into health and

wellness or specific diagnostic treatments in psychosocial sciences for patients who need support in strengthening or developing self-esteem.

As the layers of this particular aspect of multiple intelligences peel away, I recognize this category of intelligence as necessary and fundamentally important and as a precursor to support the development of a strong linguistic intelligence. Similarly, the two intelligences complement the other so closely that a person may strengthen their overall competencies in one area simply by improving in the other. Further, it is possible that correlations between the two represent synergistic gains rather than merely additive gains alone. Gardner (1999) exhaustively analyzed and separated his choices of seven intellectual areas on the "basis of parsimony and usefulness" (p. 103).

As a starting point for a holistic gamut of intellectual skills, Gardner (1999) also acknowledged the nuances of each intelligence, thereby demonstrating each area as dependent or independent and illustrated an abyss of possibilities of sub intelligences. He claimed that "it might turn out empirically that certain intelligences are more closely tied together than are others, at least in particular cultural settings" (p. 102). While writing this analysis, I considered the culturally important aspects and skills that teachers develop and possess while working in American schools and particularly focused on the implications of linguistic and personal intelligences on mentor programs and the professional development of novice teachers.

Intrapersonal intelligence. In the previous section, I explored the power of a person's linguistic intelligence. Particularly emphasized were the four competencies: mnemonic, rhetoric, explanation, and word analysis-the action and reflection of word use.

Additionally, the way in which a person used words in both verbal and written form were

drawn upon and the author discussed possible correlations between a person's linguistic

strengths and the expressive rhetoric strategies employed such as facial and hand

gestures, pantomime and body language, volume and tone, as well as silent noise.

Educational stakeholders like teachers and students double as orators and they often

describe their perspectives about their work as personally important and meaningful.

Educators represent the students, parents, and community members because it is

important to their beliefs, values, and judgments as a whole community. Teachers may

describe their commitment to their work as enjoyable because the underlying feelings of

passion and enthusiasm provide them with internal drive and ambition. Freire (1998)

found that teaching was inseparable from learning and "its very nature a joyful

experience…the more methodologically rigorous I become in my questionings and in my

teaching practice, the more joyful and hopeful I become as well" (p. 125). Similarly,

students who experience the feelings of joy from participating in the teaching and

learning cycle may utilize their emotional perceptions to improve their decisions and

thought processes, and this is the heart of the emotional aspects of personal intellectual

capacities. Gardner (1999) explained that any person who can recognize and reflect their

internalized feelings has the skill to use their knowledge of self. The capacity to access

feeling includes "one's range of affects or emotions: the capacity instantly to effect

discriminations among these feelings and, eventually, to label them" (239). In essence,

"intrapersonal intelligence amounts to little more than the capacity to distinguish a

feeling of pleasure from one of pain and, on the basis of such discriminations, to become

more involved in or to withdraw from a situation" (p. 239). These experiences provide the person with an additive effect in which the person may become wise with age and act on prior experiences when placed in similar situations.

Both Friere (1970, 1998) as well as Dewey (1910, 1938) supported experiential situations and posited that a person holds control over their experiences thereby reacting to stimulus by choosing to participate or abstain. Gardner (1999) triangulated this position, one who holds intrapersonal skills, may draw upon them "as a means of understanding and guiding one's behavior" (p. 239). Freire (1970, 1998) supported this concept and claimed that the knowledge of self is at the core of human function and the essence of our liberties such as the freedom of speech and right for an education. The person who gains the skills to react with insight and personal reflection may develop a heightened sense of intrapersonal intelligence and according to Gardner (1993), may facilitate self initiated opportunities to exercise their ability to "detect and to symbolize complex and highly differentiated sets of feelings" (p. 239). Teachers, who employ these skills while they are engaged in dialogue with their students, insightfully express themselves using rhetoric, explanation, and analysis as well as presentation skills. Acutely and continually, they reflectively check their own feelings and outwardly emphasize feeling within their dialogue in order to strategically assess and intuitively choose the next action or word in the conversation (Gardner, 1993, 1999).

A skilled teacher may bait a student or entire class into a learning environment so well that the student may forget they are engaged in a lesson. Moreover, the skilled teacher who practices an eclectic approach with their students, one that includes true

dialogue may find themselves in a learning environment that is balanced with the give and take experienced in close relationships and respectful conversations where participants accept the value of others opinions, positions, and perspectives. These are the skills related to EI skill and the idea is a paradigm shift from the traditional ways in which students learn and practice their communication, literacy, and therefore their emotional intelligence.

  Interpersonal intelligence. As I described in the section above, a person may visualize a politician, a teacher, or a parent as a leader who develops expert linguistic skills and the sub skills of the personal intelligence known as intrapersonal skills. Similar to intrapersonal intelligence, Gardner (1993), explained that while intrapersonal intelligence explains the skills that focus on the insight and reflective ability to assess feelings, affect, and emotion, interpersonal intelligence on the other hand, "turns outward to other individuals" (p. 239). Students must refine this skill as they employ this intelligence toward their peers and respond to their teacher in an effort to perceive emotions such as moods, temperaments, ambitions, and goals. According to Gardner (2006), one of the leading causes for mind change is to "discriminate among persons, figure out their motivations, work effectively with them, and, if necessary, manipulate them" (p. 39). Highly skilled individuals will rely on their abilities to use reflective thought about their own positions, feelings, and motives in their efforts to scale each other from head to toe, back to front, and inside to outside. Consider a master teacher, they employ advanced interpersonal skills to "read the intentions and desires—even when these have been hidden—of many other individuals and, potentially, to act upon this

knowledge—for example, by influencing a group of disparate individuals [such as students] to behave along desired lines" (p. 239). Teachers learn and sharpen personal skills much like parents who learn about the nuances that each of their children possess and react to, but for a teacher it is their business—their professional goal.

Although Gardner (1999, 2006) does not concede that emotion is a skill within itself to warrant a separate intelligence, he does note the importance of emotion and its role within the personal intellectual domain. For example, emotions, both inward and outward, that students employ may help or hinder their progress toward the skills and knowledge necessary to be successful society members. People who insightfully identify overt and covert emotion subsequently and skillfully anticipate emotion within themselves and of the relationships with people such as coworkers, teachers, parents, etc. These people are decidedly more prepared to maintain and facilitate a nonstop flow of open dialogue, thought, and decision making with a person or group of people (Mayer et. al., 2004). These compounding experiences set the framework for a cyclical pattern that include Gardner's (1983, 1999, 2006) theory of multiple intelligence and Mayer et al. (2004, 2008) theory of emotional intelligence.

The Connection to Emotion

Mentioned in the section above, Vinella (2007) stated that "Cooperative skills, individual responsibility, self management, self-esteem, interpersonal skills, communication, conflict management, problem solving, critical thinking, adaptation to change, and teamwork are the work-related skills and attitudes necessary in today's workforce" (p. 2). Gardner (1999) focused interpersonal and intrapersonal skills as a

unique intelligence called personal intelligence. When one aligns the subcomponents of Gardner's personal intelligence with Vinella's list of essential work-related skills, one will notice the skills in common, notably focusing on personal skills such as communication and problem solving.

Contemporary experts such as Elias et al. (2003), Gardner (1999), and Goleman et al. (2002) believed that interpersonal and intrapersonal skills encompass the emotional skills. They contended that EI not only regulates all of the skills listed above but also act as a catalyst and precursor within the system of teaching and learning. Eynde and Turner (2006) agreed that a student's ability to regulate both their emotional skills and intellectual skills will further enable them to become successful in the classroom and therefore in the work place. Eynde and Turner maintained that the emotional system involved in learning is deeper than what many people perceive from a surface observation,

> …we argue that holding a perspective on emotions as processes composed of multiple component systems that mutually regulate each other over time and within a particular learning context…pushes educational research to a more detailed understanding of what constitutes emotions and the intricate relationship emotions have with cognitive and cognitive process….underneath the, at first sign predominately cognitive nature of learning, emotional as well as cognitive processes are very much present and co-directing the learning process. (p. 363)

Collectively, existing literature supports inquiry of EI and promotes researchers to seek clarity of EI rooting deep in linguistic and personal intelligence and implications on

secondary school academic achievement (Holt, 2007; Kvapil, 2007). Although, linguistic and personal intelligences are two intelligences that Gardner (1993, 1999, 2006) popularized, these two intelligences articulate with the epistemological axioms that Darwin (1872) maintained and the distinct differences that Mayer et al. (2004, 2008) believed to set emotion as an intelligence in its own right. Emotional intelligence falls under the eight or nine on Gardner's revised set of intelligences that each person possesses. Intelligence, is any skill that, when employed, allows a person to solve a problem or create something new (Gardner, 2006; Mayer et al., 2008).

The idea that intelligence may be identified, sharpened, and cultivated in a way that will synergistically foster many explicit and implicit skills and outcomes is the premise for a sound teaching and learning praxis. In order to understand this praxis one must understand underlying roots of the problem in American secondary schools absent of emotional intelligent enriched curricula.

Implications of Existing Emotional Intelligence Data

According to Szuberla (2005), the social implications that result from a deep understanding about school success is imperative. Szuberla maintained,

> In light of a nationwide movement toward improving student performance in an era of increasingly constrained budgets, the need for psychological studies to investigate how school success is related to the emotional state of students has become even more pronounced. (p. 105)

Szuberla added, "This information suggests that early intervention and training in EI is a major ingredient in any program designed to foster student success" (p. 1). It is important

to consider Szuberla's findings at the framework of a process that begins with the students' learning in mind. Szuberla found significant evidence that students have higher academic achievement when either they have a higher EIQ or who were supported to improve their emotional intelligence.

Similarly, Kvapil (2007) found significant correlations between low verbal abilities and low emotional intelligences in students who were at risk. Considering the variables that were tested (verbal scores, academic achievement through GPA, behavioral issues, and English classes), clearly there are strands that anchor to Gardner's (1993) multiple intelligence theory including linguistic and personal intelligence as well as, Mayer et al. (2008) emotional intelligence theory.

Yost (2006) supported EI teaching and learning processes when she found that "teachers were highly successful in resolving academic and behavioral challenges using a model of critical reflection introduced to them in their teacher education programs" (p. 73). These recent studies put the philosophical positions of traditional and contemporary authors into conceptual and concrete ideas that may improve students' emotional skills, which in turn, may correlate with academic achievement in linguistic areas such as literacy. Szuberla (2006) marked emotion as a specialized skill, "Emotional reasoning begins with perceiving emotions accurately" (p. 3).

In light of Gardner's (1983, 1999, 2006) work, Owen and Solomon (2006) and Szuberla (2006) both aligned their studies based on the null premise that emotional skill does not significantly influence the success of students and teachers. There is promising evidence that EIQ does have influencing factors related to academic success however,

many school districts drop social and emotional curricula when students reach secondary school. Emotional development does not cease to improve during the high school years and "the influence and availability of external support systems becomes ever more critical for youth during their high school years" (Bennett, 2006, p. 50). This information substantiates further inquiry necessary to support or refute the research questions and hypotheses outlined in chapter one of this study. With that in mind, to what degree does EIQ correlate with academic success? With what instrument do researchers support their findings?

Measuring Emotional Intelligence

Experts agreed that when researchers employ quantitative measurement tools with statistically supported validity and reliability scores, both efficacy of the methods and the degree in which one variable has influencing effects on another variable reduce the area for critics to scrutinize (Leedy & Ormrod, 2005). Gardner (1999) explained that since Goleman's (1985) publication, "there have been dozens of efforts to create tests for emotional intelligence" (p. 209). The difference between self reported inventories, tests that measure personality, and tests that measure emotional ability are at the center of debate (Grub & McDaniel, 2007; Lindenbaum, 2009; Mayer et al., 2004). Mayer et al. (2004) commented on the gamut of tests: "These popularizations equated EI with everything from 'zeal and persistence' to general 'character'" (p. 197). Grub and McDaniel contended that "as the use of emotional intelligence tests in industry continues to increase, the debate over the validity of emotional intelligence tests continues as well" (p. 43). In light of this idea, I considered the available technical data and existing studies

of EI measurements and narrowed the scope to the MSCEIT (EIQ) and the Bar-On

Emotional Quotient Inventory (EQi) as potential tests to use in the current study.

Bar-On EQ-i v. MSCEIT 2.0

Buros Mental Measurements Year Book and the Consortium for Research on

Emotional Intelligence in Organizations (2009) recognized the Bar-On EQ-i and the

MSCEIT as sound measurement tools for emotional intelligence. The Bar-On EQ-i, has

been in existence for 20 years and according to the publisher, Multi-Health Systems

(2009), the "Early versions of the EQ-i were completed by 2,868 subjects in six

countries….The final 133-item version of the EQ-i boasts a normative database of nearly

4,000 participants, ranging widely in age and ethnicity" (MHS, 2009, para. 1-2). The EQ-

i leans toward the business side of EI testing and MHS (2009) offers packages that

include reports focused on business, business leadership, and higher education. Cox

(1997) reviewed the test and the "internal consistency and test-retest reliability estimates

appear to be adequate" (p. 1) Cox (1997) also reported, "The instrument has an average

internal consistency coefficient of .76," while "Average test-retest coefficients are .85

and .75 for 1- to 4-month time periods" (p. 1). The EQ-i can be used in a variety of

settings mentioned in the section above; however, the test's author recommended that the

administrator or researcher employ an eclectic approach (MHS, 2009; Cox, 1997).

Collecting measures from multiple inventory scales such as the EQ-i, will clearly identify

a total emotional intelligence. Cox (1997) contended, "The measure would appear to be

of limited value when used in isolation in clinical settings, particularly where individual

selection, placement, or prediction of behavior are important clinical decisions" (p. 1).

Still, the main purpose for using the Bar-On EQ-i, is due to a better fit in business model research rather than educational research (MHS, 2009).

According to Lindenbaum (2009), the EQ-i model focused on "self reported measures…and assesses typical or preferred modes of behavior," while the MSCEIT uses ability measures that include four subsets or branches (p. 226). Ability based EI testing assesses the participant's ability to use and understand emotions in life scenarios such as determining how another person feels, how oneself feels, and considering emotions while making decisions and solving problems. Mayer et al. (2004) denoted the total EI score as EIQ.

To provide descriptive meaning to the EIQ total scores and sub scores on the MSCEIT, the authors aligned ordinal scores with the interval scores. For example, an interval score of 69 or less was labeled "consider development," while a score of 130 or more was labeled "significant strength" (MHS, 2009). However, the statistical inquiry used in this study negates the applicable use of ordinal scales.

Several emotional intelligent based studies reported the reliability and validity of the MSCEIT scores (Dardello, 2007; Holt, 2007; Mendes, 2002; Szuberla, 2005). The authors (Mayer et al., 2004) and the publisher Multi-Health Systems Incorporated (MHS) of the MSCEIT also cited technical information regarding the background of the test collection and described the procedures employed to run statistical measures of reliability and validity. MHS (2009) compiled normative data from three samples. MHS explained:

> The combined total of these samples creates a normative base of 5,000
>
> respondents that is representative of the US general population in terms of gender,

age, ethnicity, and level of education. Collecting normative data is an important

part of test development. Norms establish a baseline against which all subsequent

results are compared, and they enable the test developer to capture the

characteristics of an 'average' respondent. Norms indicate the average

performance on a test and the frequency of deviation above and below the

average. The larger and more representative the normative database, the more

accurate and indicative the results. (Para. 2, 3)

According to Mayer, et al. (2008) the statistical evidence supported the very high test-

retest reliability (in the high .80s) and shows very good validity evidence for measuring

EIQ in adults when using the MSCEIT or Four Branch Model (p. 510). Leung (2002)

agreed, "In general, Branch score internal consistencies were adequate (.79-.91).

Adequate test-retest reliability (at 2 weeks) was reported for the full scale ($r = .86$)…" (p.

1).

Additionally, Leung (2002) said, the "correlation between MSCEIT scores and

scores from a number of personality instruments were mostly in the low to moderate

range," supporting the MSCEIT as an ability-based model over the EQ-i (p. 1). In light of

the information that indicated emotions govern and signal responses to various life

scenarios, then it is important for researchers to be able to measure an emotion. Before

taking this discussion to the critics of the MSCEIT, consideration of documented EI

measurements will further the rationale for MSCEIT used in the current study.

Considering the collective evidence regarding the reliability, validity, and critical

reviews mentioned in the section above the construct is different from surveyed tests.

Mayer et al. (1999, 2004, 2008), constructed a practical and conceptual tool that closely

resembles a test of real life emotional scenarios rather than the self-reported mixed model

that incorporates personality. It is an ability based model that "divided the abilities and

skills of into four areas: (a) perceive emotion, (b) use emotion to facilitate thought, (c)

understand emotions, and (d) manage emotion" (p. 199). Linking each branch with two

scales, the authors constructed the Mayer-Salovey Emotional Inventory Test (1990) and

its successor, the MSCEIT (2004). Using analytical and statistical applications, this

information demonstrates strong evidence that the tools, when used correctly, correlate

with the four branches that it tests. To increase validity constructs and reduce threats,

Mayer et al. (2003, 2004) cited published studies and theses where thousands of

participants took the MSCEIT. In these studies, researchers measured EI in various

populations such as preschooler's social competence, work satisfaction among employees

who have supervisors with high EIQ, and predicting academic performance and problem

solving of students. Although, Mayer et al. (2008) described additional metrical tools that

they felt meet muster, this research study includes the skilled based model of the

MSCEIT. In adolescent populations, the authors supported "paradigms that employ

cognitive models of the processing of EI (like the Emotional Stroop) and/or situational

judgment tests based upon the processing of emotional cues…" (p. 110).

Significance of the Mayer, Salovey, Caruso Emotional Intelligence Theory

Mayer and colleague's emotional theory and MSCEIT V2.0 (Four Branch Model)

served as the framework for this study. As I considered the growth of statistical evidence

regarding emotional intelligence, a potential relationship became apparent; EIQ scores

might significantly predict behaviors. Two important aspects increase pragmatic implications and further support inquiry as to determine the degree in which EIQ influences academics. First, studies show that as MSCEIT scores rise, so does academic performance and sometimes indirectly the ability to communicate motivating messages (Mayer et al., 2004, 2008; Kvapil, 2007). Mayer et al. (2004) agreed, "part of interpersonal relationships involves motivating others" (p. 209). In practical terms, it is logical to say that if students increased their EIQ, the byproduct could be two fold.

First, the increased EIQ could help students increase their intrapersonal skills such as intrinsic motivation. Intrinsic motivation may directly help students to study longer and indirectly improve their literacy skills. Second, improved EIQ could help students increase their communicative abilities and their overall test scores may increase, but more specifically in language arts and literacy. Increased academic scores occurred in Szuberla's (2005) study where a "significant correlation between cumulative standardized test scores and emotional intelligence scores" was found (p. 66).

On the other hand, when EI decreases, problem behaviors such as violence and drug use tend to increases (Claros, 2010). Logically, problem behaviors interrupt the teaching and learning process. For example, a teacher may remove a student from a classroom, a student may increase absenteeism, or a student may shut down emotionally after they use negative behavior. This evidence provides reason to believe that a teacher who increases their EIQ can also learn to help students improve their EIQ and collectively the two will improve the student's overall school performance.

In light of recent NCLB (2001) goals, EI inclusion may be particularly relevant for students who fall on the academic assessment line such as a high-level yet non-proficient student. If school leaders and teachers were able to assess students' EIQ levels then they may be able to improve in specific areas or branches of EIQ and then target nonproficient academic areas. Justice and Espinoza (2007) found just such a tool, "the Emotional Intelligence Scale provides authentic assessment of the current levels of development over ten powerful, emotional skills" (p. 460). Considering the correlation between problem posing, critical reflection, and problem solving a person may logically reason Justice and Espinoza's position: "If beginning teachers knew what skills they could apply when they face challenges, then this could possibly keep them in the classroom longer than five years" and logically their students would be the primary beneficiary" (p. 461).

If high EI supported the teaching and learning process, does the lack of EI hinder teachers and their students? Teacher attrition is a current problem in the education systems worldwide (Ingersoll & Smith, 2003; Li, Yang, & Shen, 2007). For example, Chinese researchers attribute aspects of teacher attrition with novice teachers who feel isolated from colleagues both physically and emotionally. The emotional issues extend to isolation experiences with their students as well (Yong & Yue, 2007). "Excessively long hours of work, heavy workload, and excessive work intensity" distress novice teachers to the point that they never realize their potential or effectively carry out their duties before they leave the profession (Yong & Yue, p. 79). The same scenario occurs to students

when teachers follow the *Nation at Risk* (1983) recommendations to increase the amount of homework assigned to students. Isolation increases for the students as well.

Expert Views Regarding Emotional Intelligence

In contemporary literature, there are many definitions regarding emotional intelligence. Goleman (1985) popularized the idea that EI had strong implications around an individual's opportunity for success even more so than IQ. Goleman acclaimed that the affective domain, emotions, significantly influenced success and learning over cognitive ability by an 80% to 20% margin.

Although Gardner (1999) refused to concur with Goleman (1985) on the idea of emotion as intelligence, he noted that psychometric tests should seek to measure real-life situations, "where they have to be sensitive to the aspirations and motives of others" (p. 208). Eynde and Turner (2006) defined emotion as "a relatively brief episode of coordinated brain, autonomic, and behavioral changes that facilitate a response to an external or internal event of significance for the learner" (p. 362). Elias et al. (2003) provided a comparative definition: "If IQ represents the intellectual raw material of student success, EQ is the set of social-emotional skills that enables intellect to turn into action and accomplishment" (p. 4). Perhaps most pointedly, Mayer et al. (2004) considered EI as the "capacity to reason about emotions, and of emotions to enhance thinking" (p. 197).

Considering the core areas of systems theory and systems thinking application, a person's ability to use emotional intelligence, while working within a system, is a quintessential element that grounds normative and personal behavior within a causal

open-loop social system such as a classroom or workplace. If a person considers the

dynamic relationships between coworkers, managers, and supervisors within a

department or the dynamics of a class of 30 students and a teacher, then it is easy to

understand the axioms that researchers have posited as EI, as well as the variables that

play within a system. Mayer et al. (2004) supported this thinking: often our "emotions

govern, and often signal, motivated responses to situations" (p. 198). With implications

for EI in mind, it is imperative for teachers and students to maintain and improve their

emotional skills because they will be able to glean information while engaged in either

high or low emotional situations. Further, the information will serve as a synergistic

catalyst, in turn; this function will provide potential work products that include positive

solutions to pressing issues within the educational system.

According to Elias et al. (2003), Gardner (1999), Mayer et al. (2004), and Senge

(2008), players can frame potential work products only when they engage in emotionally

intelligent best practices in order to identify and act upon systemic problems. Experts

agree that a person's EI has significant attributes on such as predictive abilities, as well as

correlating and causal elements with, life experiences and emotional development

(Goleman et al., 2002; Mathews et al., 2006; Mendes, 2002). Additionally, when

considering the dynamic elements such as feelings and thought, experts quickly point out

that current research efforts seek to refine the nuances of emotional intellectual theory

and practice (Elias et al., 2003; Mayer et al., 2004). These research efforts, as well as the

gaps in literature, help to narrow the scope of an existing phenomenon regarding

problems such as job and school satisfaction, teacher retention versus attrition, students'

literacy skills, as well as, academic achievement. For example, Eynde and Turner (2006) spoke about the important balance between affective and cognitive domains of learning. They contended that "underneath the, at first sight predominately cognitive nature of learning, emotional, as well as, cognitive processes are very much present" and co-direct the learning process (p. 363). Teachers who are skilled in directing emotional processes will become more efficient when organizing and planning instructional strategies and successfully improve all students' achievement (Eynde & Turner). A positive antagonistic result could be students' improved efficiency in organizing and planning as well as improved academic achievement.

The experiences of children and teachers in classrooms depend on both external and internal sources to manage. Our emotional connections and interactions with the people around us are the same as an open-loop limbic system of the physiological combinations in a person's body (Goleman et al., 2002). These combinations include emotional and intellectual skills. Contemporary researchers contended that elements within the personal intellect, such as a person's emotions, influence behavior and decision-making (Mayer et al., 2004).

Critics of EI Theory and Measurement Instruments

It is important to consider the theoretical aspects and psychometric alternatives of EI from the critics' perspective. Mayer et al. (2008) said that lay critics of EI theory, acted surprised that emotions actually transmit information "at all….Emotions often are viewed as irrational, will-o'-the-wisp states-even pathological in their arbitrariness" (p. 506). Many scholarly critics voiced their concerns regarding EI as a skilled intelligence

(Gardner, 1999; Palmer, 2005; Zeidner, Roberts, & Matthews, 2002). They thought that efforts to single out emotion as an intelligence was too broad. Critics described EI as all encompassing skills and aptitudes with so many variables that it was difficult to defend as intelligence in its own right (Zeidner et al., 2002). However, many social scientists who critiqued past research found that researchers used loosely designed studies and included metric tools riddled with validity threats. Further, there is a void of devoted studies to emotional skills in the first place (Mathews, Roberts, & Zeidner, 2003; Mayer et al., 2008). According to Gardner (1999), social and emotional theories regarding aptitude and intelligence have existed for several decades. However, Zeidner et al., (2002) contended that EI is "a relatively new and growing area of investigation that has, virtually since its inception, generated controversy both in the scientific community and in the popular media" (p. 215). Varying definitions and significant findings of fragmented studies that included broad variables and grand claims that attributed success stories to EI have caused an uphill climb for the ring of scientists who support delineated EI theories. While, Gardner (1999) stood firm refusing to recognize Goleman's (1995) claim that EI was more important than IQ, Mayer et al. continued to investigate the power of EI.

Specific to the MSCEIT, critics Maul (2008) and Palmer, Gignac, Monocha, and Stough (2005) raised controversy regarding the factor design, specifically questioning whether the test actually scored the skills of emotion that are the theoretical basis that gauge emotion as an intelligence. Maul (2008) raised concerns regarding the aspects of expert and consensus scoring used on the MSCEIT and noted the associated weaknesses of using experts who may rely on "societal views, opinions, and interpretations" to score

the tests rather than developing a rubric that will help scorers define the degree in which a question is correct. Maul (2008) also contended that the scores taken in isolation of each branch might be more indicative of a true score rather than rating a person's EI based on the entire test. Maul said, "There still may be much to be gained from an item-level perspective on the MSCEIT" (p. 131). Although Maul made many recommendations to improve the MSCEIT such as excluding the "using emotions branch and associated tasks from a test of emotional intelligence" (p.130), he contended that the predictive ability of EI held muster in the area of evidence based on relations to other variables.

Specific to the Bar-On EQ-i, Grubb and McDaniel (2007) posited that since the EQ-i was a mixed model that measured not only emotional ability but also non-cognitive capabilities and because it is a self-report measure, it "may help identify why some individuals are more successful than others" (p. 45). Grubb and McDaniel believed the mixed model measurements and self reports, like the EQ-i, were more vulnerable to faking the answers; "because the items are transparent and cognitively challenging, respondents may easily determine how to respond to the items to inflate their score" (p. 46). Grubb and McDaniel sought to determine if their hypothesis held water. In their study, 251 respondents completed the EQ-iS (short form) and after pulling tests for various validity threats, the total analysis sample was 229. Respondents tested twice within a two-week interval. Randomly selected, the researchers divided the respondents into two groups for clarity group A and group B. During the first week, group A took the test honestly, "even if the responses would not seem positive or flattering" (p. 48). Simultaneously, group B was "instructed to respond to the questions as if they were

applying for a job they would like to get and to respond in such a way they believed would guarantee that they are offered the job" (p. 48). The groups received the opposite directions for the second week testing session. Grubb and McDaniel found that even after following the administrators testing manual screening techniques, many respondents significantly raised their faking score from their honest score without detection. The researchers found that the test was very similar and in some cases redundant to the Big Five personality test and therefore fail to support existence of EI construct, for not only the EQ-i, but also "potentially all mixed models of emotional intelligence" (p. 57).

Rationale for the Critics

While considering the strengths and weaknesses of EI construct, logical inquiry begs to understand why some students become linguistically proficient and emotionally strong while others have varying degrees of each. From a system approach, consider that some students, over time of experiences, reflection on those experiences, and early intervention at the primary school level, improve their EIQ earlier than their peers do. This type of student learns and adapts from his experiences and he may become academically successful with an increased EIQ, while others get lost in the transition of adolescence, teenager, and young adult; a tremendous growth within their four-year tenure at secondary school. Secondary students, given the support to improve the skills associated with higher levels of EIQ, may improve their linguistic intelligence and these successes may snow ball into other areas within academia and life. There is a gap in literature to prove or negate this position.

On the other hand, secondary schools without a focus on growth in EI may have a pool of students who experience enough emotional situations where they must manage their feelings while collaborating or working individually in an effort to create alternative decision within a framed model that provides solutions to solve real problems. These students may also score proficient or high on an EI test because they experienced the emotional aspects that are necessary to improve one's emotional intelligence. However, what about the students who fail? Elias et al. (2003) raised a similar question. Can true academic and social success exist without emotional skills? According to Elias et al. in effective middle schools,

> …the common denominator among the schools was they had systematic procedure in place for addressing children's social and emotional skills. There were school wide mentoring programs, group guidance and advisory periods, modifications of the usual discipline systems, and classroom programs that allowed time for group problem solving and team building. (p. 5)

If research supports correlation among the variables in this study, then school leaders may decide to balance the cognitive STEM type curriculum by increasing the affective EI enriched curriculum.

Early researchers and practitioners who explored relationships between high EIQ and academic success failed to show consistency between the findings. Jaeger and Eagan (2007) posited that such inconsistencies among the reported findings "may be the result of methodological problems of narrowly defining emotional capabilities and/or assessing academic success over very short time periods" a weakness that Mayer et al. (2008) noted

as well (p. 518). Understandably, these weaknesses provide rationale for opponents of EI who "argue that schools need to concentrate efforts on academic achievement because there is simply not enough time to address other topics, regardless of their merit" (Zeidner et al., 2002). However, the positive attributes of these critical comments emerge as one considers well-documented social science studies that delve into compounding implications regarding personal intelligence and linguistic intelligence, which trickle into the ideological roots of EI (Kvapil, 2007; Szuberla, 2005). The gap of scientific evidence specific to the degree of correlation between students' EI and literacy strengths may demonstrate that there exist improved decision-making and communicative responses during emotional states where people exhibit higher emotional intelligence. Uncovering this information can be invaluable for students and supports the focused inquiry of this study. Mayer et al. (2008) supported this position:

> The EI concept further incrementally increases our clarity in understanding why certain people-those who score higher on EI scales-are more successful in their relationships at home and at work. These higher EI individuals are better able to recognize and reason about their emotions, as well as about the emotional consequences of their decisions, and the emotions of others. Together, the empirical and conceptual increments indicate that EI is a useful variable for study. (p. 513)

With this in mind, this study posits that an emotionally intelligent person may be able to use emotions to facilitate thinking rather than deter thinking and the person may be able to communicate more effectively through language and writing if they understand

emotions, "emotional language, and the signals conveyed by emotions" (Mayer et al.,

2008, p. 507).

Jaeger and Eagan (2007), substantiated rationale that supports EI training for

novice-teachers through a simple yet essential approach, since "most common predictors

of academic performance do not fully explain why some students are successful and

others are not, additional research is warranted. Furthermore, research addressing

EI…requires additional examination" (p. 519). Considering the implications of the

teaching and learning process, students who learn, model, and recognize emotional cues

within the dialogue that takes place between and among their teachers and peers may be

able to master their own emotional skills. Further, improvements in the areas listed under

the Mayer, Salovey, and Caruso Four-Branch Model (2008) may help students to raise

their academic scores, specifically in the linguistic areas such as verbal and written

expression. According to Jaeger and Eagan (2007), historically, educational leaders

measured academic performance by how well a person could perform a skill. If this is

true, then it makes sense that when people raise their EI skills then overlapping skills

such as literacy and linguistics also improve. Recently, Matthews et al., (2003) admitted

that although development of EI is a skeptical idea, it is not a dismissive perspective. EI

has mainstreamed in business and educational fields and has become "a pivotal,

mainstream area of contemporary psychology" (p. 109).

Methods and Methodologies

Quantitative designed educational studies often employ correlation statistics to

either support or refute commonalities, relationships, and cause-effect between and

among variables such as EI and academic achievement (Cook & Cook, 2008; Johnson & Christensen, 2004). It is difficult to run true experimentally designed studies that include random selection of participants in groups to study the effects of a predictor variable on students because of issues such as ethical concerns (children), scheduling during a school day, and consistent programming across grade levels and within the same grade level for students who have more than one teacher. For example, if a researcher randomly selected students and placed them into an experimental group who received a newly formed and promising pedagogy in Math and a second group in the control group who received traditional instruction, then many parents may want their child to be placed in the experimental group before they grant permission.

On the contrary, if a newly invented smart serum potentially increased IQ by 40 points, but had many negative side effects, then parents would not want their child in the experimental group for the obvious safety of their child. Simply put, the logistical and ethical concerns regarding the population of schools (children) interfere with engaging in true experimental design; it is the nature of educational research. For example, Cook and Cook (2008) reported that selected prominent articles in the field of special education over a five-year period published only 4.2% of articles with experimentally designed studies that investigated math and science. Although many practitioners make persuasive presentations regarding interventions on students and these articles can influence policy makers, Cook and Cook (2008) contended that "it is important to recognize that without data to support claims regarding the effectiveness of a practice, readers should exercise a

healthy skepticism toward any recommendations found in non-empirical sources" (p. 99).

Often, educational researchers cannot achieve true random design.

Correlation research is a common study design to determine relationships between variables. A strong correlation defends a relationship and critics consider the evidence weak, yet acceptable when two prerequisites are not met; including random assignment and manipulation of a predictor or independent variable. Because evidence gathered in correlation research limits cause-and-effect relationships, researchers also employ regression analysis to identify the significance of a predictor variable on a criterion or dependent variable (Johnson & Christensen, 2004, p. 40; Triola, 2005). Correlation research is based on the statistical calculation of bivariate data referred to as a correlation coefficient and sometimes called the "Pearson product moment correlation coefficient in honor of Karl Pearson (1857-1936), who originally developed it" (Triola, 2005, p. 499). Statisticians and researchers agree to define correlation research as the examination of the extent to which quantitative predictor variable(s) relate to the differences of quantitative criterion variable(s) (Cook & Cook, 2008; Johnson & Christensen, 2004; Ormrod & Leedy, 2005). The strength of a correlation is determined by the degree to which the correlation coefficient approaches 1 or -1, although even a perfect correlation does not indicate cause and effect. Expressed as a decimal, the closer the decimal comes to 1 or -1, the stronger the relationship. For example, .76 to .89 indicates a strong correlation, while .15 to .22 indicates a weak correlation (Cook & Cook, 2008; Ormrod & Leedy, 2005, p. 265).

When researchers perform educational inquiry, they often have difficulty running true experimental design that includes random assignment and manipulated variables. Often the best approach for educational researchers is to perform correlation research. Correlation often sheds light onto relationships or associations suspected to improve educational outcomes and often trigger both policy change and further inquiry under controlled environments. In order to strengthen the plausibility of a strong linear association that implies causation, researchers often "construct a regression equation to predict the value of the response variable based on the value of the explanatory variable" (Sawyer, 2002, p. 72). The difference between correlation and regression is that the regression describes and predicts the relationship between the two variables while the correlation simply supports the strength of the relationship (Triola, 2005). Researchers should not conduct regression in the absence of strong correlation coefficient.

Bennett (2006) used hierarchical multiple regression to allow for his control of the sets of variables rather than a software application. This procedure allows the researcher to determine the "amount in the variance or change in the criterion variable accounted for by a specific predictor variable to be determined" (p. 84). Considering the added insight to understanding the predictive nature, I decided to use a multiple regression model in this study. Scores, such as total EIQ on the MSCEIT (predictor variable) will be correlated with the HSPA English score (criterion variable) while accounting for control variables such as gender and GPA. Kvapil's (2007) correlation research determined if a relationship existed between EI and the academic achievement of at risk secondary students. After identifying strong correlation, Kvapil (2007) found significant degrees of

regression between a student who had a high EIQ and their teacher who had a high EIQ. Additionally, the researcher found high correlation between low verbal ability and low EIQ. Finally, Holt (2007) confirmed a significant relationship between EI and academic achievement. To facilitate multiple regressions, Holt delineated the MSCEIT scores into the four branch scores in addition to the total EIQ and compared them with GPA, gender, and students' satisfaction with educational experience scores. Holt concluded that "the better student understanding and regulating his/her emotions, the better he/she is likely to do in college. Our emotions, then, do make us smarter, helping us shape rational thought and learn practical skills" (p. 119). The collective information regarding inquiry of the relationship between EI and academic achievement support rationale to embark on a correlation research study focused on literacy and emotional intelligence.

Conclusion

The purpose of this literature review was to substantiate the rationale to study regression and analysis between EIQ and literacy scores. Within the content of this review, it is clear that EI theory is an increasingly popular and fascinating phenomenon to study. Existing research reveals that there exists a gap in literature related to the narrowed population and specific variable intended for the purpose of this study, however prior studies have also revealed that significant correlation between EI and academic achievement exist among some populations.

Common among all of the data included in this literature review, is the tight theoretical webbing between Gardner's (1993) linguistic and personal intelligence theory and Mayer, Salovey, and Caruso's (2004, 2008) emotional intelligence theory. After

collectively considering the theoretical grounding, the available and tested psychometric tests, and prior methods of inquiry, I will test these theories in this study using an applicable psychometric tool called the MSCEIT. Correlation and regression statistics will determine if a significant correlation exists between the predictor variable, students' EIQ, and criterion variable HSPA-English LAL scores, controlling for gender and GPA. Both available literature and the limited breadth of EI studies dedicated to academic achievement support the focus of the current study.

The strength of the relationship between EIQ and literacy has potential for benefits to social strands of a global world in education and specifically understanding the importance of a balanced pedagogical approach to instruction, assessment, and learning. Literature supports the stance that the nation's students need to improve their communication skills in order to perform better on the job or while attending post secondary school. The theoretical framework suggests that overall EI is associated with students' improvement of their literacy skills, which are at the core of strong communication. On a global level, a strong EI could help the same population to solve cultural issues because they will be able to understand themselves, their colleagues', and their peers' emotions, while using their emotions to facilitate improved critical thought.

Chapter 3: Research Method

Unimproved literacy scores, among U.S. students, remain a trend despite decades of educational research and reform efforts (Baer et al., 2007; Lemke et al., 2005; Marzano, 2001). This problem includes students who graduate from high school and enter the workforce, postsecondary school, or military. The best pedagogical methods to correct this trend have not yet emerged. Nevertheless, steps need to be taken by educational leaders to help improve literacy achievement and, in turn, improve the global competitiveness of U.S. students (Baer et al., 2007; Lemke et al., 2005). One way to begin addressing this problem was to understand the relationship between EIQ and LAL.

The results of this study may guide practitioners when developing pedagogical strategies to improve literacy and communication among students, as well as influence didactic professional applications used by teachers, administrators, and human resource managers. Hypothetically, the problem between literacy and EI influences students because low EIQ indicates an inability to perceive emotions and an inability to use emotions to facilitate thinking (Mayer et al., 2004, 2008). Additionally, if students do not understand emotions then they may not be able to manage their emotions for personal growth in areas such as literacy (Mayer et al., 2008). This study contributed to the body of knowledge needed to address the literacy problem by exploring the possibility of a significant correlation and predictive factors between EIQ scores on the MSCEIT and English-LAL scores on the High School Proficiency Assessment (HSPA) of students in two public high schools in the eastern United States.

This chapter discussion leads into a rationale for the quantitative research design by focusing on the research question regarding whether a predictive relationship exists between secondary students' EIQ and their academic achievement. The chapter includes a description of the sample and rationale for choosing the sample and sample size. The instrumentation section includes a discussion of reliability and validity of the scores produced by both published measurement instruments, the MSCEIT and the HSPA. Finally, I included a summary of the data collection process, statistical analysis, and methods planned to protect the participants' rights.

Research Design and Approach

This quantitative research design allowed for an understanding of the literacy problem by considering the potential emergence of information regarding the relationship between EIQ scores and LAL scores among secondary students. The investigation of the statistical relationship between the criterion (literacy scores) and predictive (EIQ) variables provided an objective quantitative analysis rather than interpretation of subjective data associated with a qualitative or mixed method design. The instruments that I used in this study were primarily quantitative tools that reported raw scores on an interval scale. Often, a quantitative study helps a researcher determine potential influencing factors of a result (Hoyt, Imel, & Chan, 2008; Hsu, 2005).

Among other potential research designs, a qualitative or mixed model design was possible. A qualitative design may have increased the amount of rich descriptive data; however, I rejected that design due to the length of time necessary for data collection. Similarly, a mixed method is time consuming. The factors which I included in this

dissertation emerged from an investigation regarding multiple intelligence theory and EI theory (Gardner, 1983, 1999; Mayer et al., 2002). My null hypothesis was that the ability to use, manage, and interpret emotions to facilitate critical thinking and decision making would influence literacy.

The inconclusive statistical evidence, regarding EIQ among secondary students and the implications of this fact to literacy, provided the rationale to investigate the potential predictive factors on literacy using a multiple regression methodology. Further, the most efficient way to determine if a factor influences an outcome is to employ multiple regression statistics (SoftStat, 2011). Multiple regression statistics not only show the strength of a relationship but also explain predictability when including confounding variables such as gender and GPA (Cook & Cook, 2008).

Further justification for the use of a quantitative design emerged after a review of the literature revealed that few quantitative studies have been conducted exploring the relationship between EI and various criterion or dependent variables (Berenson, Boyles, Weaver, 2008; Kvapil, 2007). Although the quantitative design, using multiple regression statistics, does not necessarily imply causation for the effects on the literacy problem, it is logical that strong, correlational findings provide rationale for further inquiry (Johnson & Christensen, 2004). Arguably, significantly strong results could lead to causal attributions by reducing for the number of alternative explanations (Burke, 2000).

Setting and Sample

The population to which I generalized the findings is secondary school-aged students ages 17 years or older. The selected sample included participants who had

completed the New Jersey HSPA and who were 17 years old. Further, participants were required to be at least 17 years old to meet the age requirement of the MSCEIT.

I drew the sample from a list of students in two secondary schools in central New Jersey. The diversity of the population was European American, first- and second-generation Asian American, African American, and Latino. The Department of Education considers the districts' socioeconomic status to be very high relative to the rest of the state (NJ DOE, 2006d).

Sampling Frame and Sampling Method

An accessible population can provide for a single-staged sample (Creswell, 2008). For this study, the sample consisted of the entire list of registered senior students during the 2010-2011 school year at two, public secondary schools. I accessed the list with the cooperation of administrators at each school. In order to qualify for the sample, a student must have been at least 17 years old and completed the NJ HSPA during his or her junior year. These criteria were not problematic because most secondary students take the HSPA during their junior year. Fortunately, most high school seniors in New Jersey have reached their 17th birthday and completed the HSPA by the time they reach the middle of their senior year. These eligibility criteria enabled a collection of responses from the participants within an approximate 6-month span of each test and provided a large pool of potential participants.

The total number of students who were enrolled at the schools was approximately 500. I randomly selected participants who met the age and HSPA requirements by using identifications numbers associated with a list of random numbers. Simple random

sampling is an acceptable method when generalizing the findings back to the population

(Creswell, 2008; Trochim, 2000). Simple random sampling was also the best method for

this particular study because there was no treatment group.

Prior to determining an appropriate sample size, a researcher must consider many

statistical concepts and demands (e.g., Johnson & Christensen, 2004; Trochim, 2000).

For example, researchers may consider a sample size in relation to sampling errors where

a larger sample would provide smaller sampling errors and therefore the findings would

be more generalized of the actual population (Johnson & Christensen). A problem with

actually getting a sample size, in educational research, is that often the researcher is

limited to a population and subsequent subsample from a classroom, or in best case

scenarios, the entire school population (Johnson & Christensen). Further, when using

simple random sampling and parametric statistics, determining an appropriate sample

size is important and necessary for the researcher to defend his research decisions. The

proposed random sampling and parametric testing not only go hand-in-hand, but they are

an *a priori* approach that can help strengthen the study because the results more likely

describe the population than results from non-random sampling (Fawcett & Garity,

2009).

Sample Size

I considered a few methods prior to selecting the target sample size for this study.

The simplest formula is a general rule for a regression study. Generally, the researcher

would include somewhere between 10 and 30 participants for each predictor variable

(Fawcett & Garity, 2009). Accordingly, this study had three predictor variables and thus

the study could include a range of 30-90 participants. A second, and more specific rule, addressed the total sample needed for a multiple regression model (Fawcett & Garity). The total sample (N) should be equal to or greater than ($\geq$) $50 + 8m$ participants, where m is the number of predictor variables (Fawcett & Garity). Again, there were three predictor variables ($m = 3$), therefore the sample size should equal 74 participants. A third and similar formula considered to calculate the needed sample size, sets the total sample (N) at $104 + m$, where m is the number of predictor variables, therefore the sample size should equal 107 participants (Wilson & Morgan, 2007).

Considering suggested regression strategies that may limit sampling errors as well as, improve the power in the data analysis, I selected the larger sample of 107. Finally, the procedures for data collection and the pool of potential participants for a larger group, appeared to be manageable after consideration for attrition. With manageability in mind, the larger sample would have improved the accuracy and representation of the results (Fawcett & Garity, 2009; Trochim, 2000; SoftStat, 2011).

Establishing appropriate confidence intervals, also called alpha levels, are an effective strategy to help assure strong statistical evidence when the results of a statistical analysis purport to reject a null hypothesis (Grim & Yarnold, 2004; Johnson & Christensen, 2004), and can be used to estimate the needed sample size. Most researchers choose the 95% confidence interval ($\alpha = 0.05$) across all statistical inquiries in a single study because it is the most conventional (APA, 2001; Cowles & Davis, 1982, Grimm & Yarnold, 2004). Choosing a 95% confidence interval is a conventional use in education research because the Type I errors are small enough to reject the null hypothesis (Johnson

& Christensen). Although, multiple regression guidelines suggested that smaller studies with limited criterion variables in regression formulas might produce defendable results, I selected a larger sample size in an effort to improve power and potentially decrease error (Grim & Yarnold). Considering that this study had one criterion variable, a 95% confidence interval met the suggested criteria.

The effect size is a measurement of the strength in the relationship between the predictor and criterion variables. In terms of correlation analysis, the effect size has been approximated as small ($r = 0.10$), medium ($r = 0.30$), or large ($r = 0.50$) (Statistics Solutions.com; Soper, 2011). Effect size and power are dependent on one another and a researcher must select each level while considering how one influences the other (Hedges, 2008; Trochim, 2000). After manipulating the effect size calculator, I selected an approximate medium effect size of .15 (e.g., Claros, 2010) and an alpha level of .05 because both levels would provide moderate confidence reducing Type I and Type II error, while examining the strength of the relationship between EIQ and HSPA literacy scores.

The power of a study represents the probability of being able to reject a false null hypothesis, and conventionally researchers use a power of .80 for quantitative research (Trochim, 2000; Jacobs, no date). Assuming the use of a power of .80, an approximately medium effect size ($r = 0.15$), and an alpha level at .05, the minimum number of participants required to assess the hypotheses would be 76, as calculated by the computer program *Statistics Calculator* (Soper, 2011). Power would increase, as fewer criterion variables decrease Type II errors. In this study, I used only three predictor-controlling

variables therefore; a 95% confidence interval with alpha at $\leq$.05 provided moderate yet reliable results when testing for Type I errors of rejecting the null hypothesis when it was actually true. Because there were only two control variables, Type II errors were controlled or decreased, considering the alpha level and sample size (Trochim, 2000).

Instrumentation and Materials

In order to answer the research question regarding the relationship between literacy and emotional intelligence and to collect the necessary data, I selected two published measurement tools. First, participants completed the online MSCEIT (at their own leisure) to determine each participant's emotional intelligence quotient or EIQ (Mayer et al., 2002). After the participant completed the online MSCEIT, MHS scored the test and returned the scored data to me. The MSCEIT served as the measure of the predictor variable, emotional intelligence. Second, I collected standardized test scores (HSPA) with the help of a school administrator, who gave me access to the secured data bank. HSPA scores served as the measurement of the participants' level of LAL or the student's ability to express him or herself through writing and understand reading (NJDOE, 2006, 2009). Finally, I also collected personal data from each school's data bank. The data identified a participant's gender and GPA. Predictor demographic variables such as gender and GPA served as confounding variables in order to run multiple regression statistics. All data were secured on an encrypted USB storage device and backed up on a password protected desk top.

The Mayer-Salovey-Caruso: Emotional Intelligence Test (MSCEIT)

The MSCEIT is a selected-response B-level psychometric assessment tool designed to measure a person's EIQ (MHS, 2009). MHS offers the MSCEIT in two forms: online version or paper and pencil. Although the paper and pencil test ensures that the test taker is actually the one who completes the test on site, the online version provided convenience for the participants. The online version was also more cost-effective than the paper and pencil method. Taking the test in a private environment, rather than in a room filled with peers, may have lowered reactionary threats (e.g., Trochim, 2000). Reactionary threats may include pressures that inhibit thought processes. Mayer et al. (2003) found that, when compared, participants using on site paper and pencil tests and online tests essentially provided the same answers (p. 100). I considered the pros and cons for using each format and then I selected the online version for this study.

The online test version produces both ordinal and interval scores. Scores on the interval scale can range from 50 to 150. Interval scales that reflect the characteristic that they report to measure were appropriate measurement tools because the scores allowed for parametric operations (Johnson &Christenson, 2004). Educational studies include interval scales because of the nature of behavioral measurement (e.g., IQ, educational levels, and personality; Johnson & Christensen, p. 128).

Concepts and Scoring. The MSCEIT, designed to measure skill-based emotional intelligence, reports a participant's total EIQ that is based on 16 different test categories. This test is different from other EI surveys or self-assessment tests because the objective

questions delve into how participants perform tasks and solve emotional problems through reasoning, rather than self-assessing their character traits or subjectively rating their emotions (MHS, 2009; Papadogiannis et al., 2009). The test assesses a person's EIQ based on a four-branch model that describes four subcategories of total emotional intelligence (Mayer et al., 2002, 2003, 2008).

The scores are calculated using two methods. Options include consensus scoring and expert scoring. The meanings of the scores indicate how well the participant answered the questions compared to a collection of answers from participants with the same age. The method of scoring was labeled consensus scoring (Mayer et al., 2002). Palmer et al. (2005) looked at the test's factor structure and found strong correlation between consensus and expert scoring techniques. I chose to use general consensus scoring for this study.

Reliability and Validity of MSCEIT Scores. Triola (2005) explained the difference between reliability and validity using an example of an IQ test. This explanation is interesting to this discussion because an IQ test is similar to the MSCEIT, multiple selection formats, and the report describes the score in both an ordinal and an interval scale. While reliability refers to the consistency of test results over several trials, validity implies how well the data from a test actually measure what it was designed to measure. Critics of IQ tests reported high reliability with low validity in that the test results are consistent scores but may not actually measure a person's intelligence. Critics of the MSCEIT offer similar reviews, however reports also show high validity.

The MSCEIT instrument is a published EI Test by Multi Health Systems since 2002. The MSCEIT research version had 294 items and was revised based on research findings to the current MSCEIT Version 2.0 with 141 items (Mayer et al., 2002). Although further investigation of construct validity and item-by-item analysis could help to improve the content of the questions and, in turn, improve accuracy of what a score represents, it is outside of the scope of this dissertation.

The construct validity of MSCEIT scores has critics. Maul (2008) found low-level reliabilities and construct validity across the original Mayer, Salovey, Emotional Intelligence Test (MEIS) and the MSCEIT V2.0. He also reviewed branch scores, which are sub-scores of the total EIQ. The branch scores on the MSCEIT were very weak when considering factor analysis (Maul, 2008). The internal structure of the MSCEIT could be improved if item level perspectives were applied to the 141-item test (Maul, 2008). Maul suggested that the construct validity would improve if the authors revised the MSCEIT to a three-branch model that contained perceiving emotions, understanding emotions, and managing emotions, while excluding using emotions.

Still, the strength of validity was in the fact that the test actually measured emotion as a skill that participants used in various emotional situations, such as decision making (Mayer et al., 2003). Further, Papadogiannis et al. (2009) thought that the test actually measured EIQ from an ability perspective and purported the validity to be strong. They also reported moderate to strong reliability estimates ranging from .64-.91 on various sections of the test. Using a standardized sample to assess the internal consistency

of the MSCEIT scales, Mayer et al. (2002) found a full-scale EIQ reliability of .91 (p. 35).

Measuring the Criterion Variable: The New Jersey High School Proficiency Assessment (HSPA). According to the New Jersey Department of Education (NJDOE) (2006c), the HSPA is a standardized state test that includes selected response items, as well as open-ended items. The NJDOE designed the test to measure how well a student has attained the knowledge and skills set forth in the New Jersey Core Curriculum Content Standards for LAL (p. 1). LAL is the literacy portion of the HSPA tests for students' abilities to read, critically think, interpret, and express themselves in writing (DOE, 2009; DOE, 2006a; DOE, 2006b).

Concepts and Scoring. A committee of experts, that included teachers, developed the HSPA. The committee aligned the HSPA test items with New Jersey Core Curriculum Content Standards (NJ-CCCS) to measure language arts proficiency on that portion of the test (DOE, 2009). According to the NJ-CCCS, Language Arts proficiency includes skills and knowledge such as the ability to interpret and use text in paragraphs, identify interrelationships in prose, and analyze meaning in passages. Students should also be able to demonstrate, in their reading and writing, a synthesis of multiple sources by using both written and oral forms of work output (DOE, 2008). These literacy skills have direct implications on communication and job market employers as the New Jersey High School Redesign Steering Committee (2008) contended that entry-level employees need a good foundation in emotional skills that support communication, a sub-skill of literacy.

A subcontractor scores and calculates the LAL portion of the HSPA in two of the three sections; the first section has multiple choice/selected response items while the second section has open-ended questions (NJDOE, 2006c). The third section is an essay section. Two trained raters independently score the essay. The reported score is an average of the two raters' scores. A student earns one point for each multiple-choice question answered correctly, 0-4 on each of the four literacy short answers, and 1-6 on each of the two essays. In essence, the raw score is the total number of points that a student scores on the three subsections of the LAL, and the scale score or rank order scale are the scores reported to the student's parents or guardians (NJDOE, 2006c; Personal Communication with NJDOE Representative Rob Atkins). I used the raw scores as a measure of a participant's literacy ability. Subsequently, the interval data was used for the regression statistics to analyze the data. Test scores range from 100-300 for each section of the test with a passing score of 200 (NJDOE, 2006c, p. 4).

Reliability and Validity of the NJ HSPA Scores. The NJDOE ran a pilot of the High School Proficiency Assessment in March of 2007. The NJDOE based the statistical analysis on students from the general population (NJDOE, 2007, p. 65). In 2007, the possible number of points on the LAL was 54. The mean for the raw score was 34.2 with a 5.5 standard deviation (SD). The NJDOE (2007) estimated the reliability of the overall scores for LAL content area at .82.

Considering content validity, the NJDOE (2007) emphasized that the primary rationale for the assessment was to test for proficiency of knowledge and skills outlined in the New Jersey Core Curriculum Content Standards. They demonstrated evidence of

validity based on "test content….internal structure of the test….relations to other variables….and consequences of testing" (p. 69). The data regarding the students' performance highly correlated with the CCCS. This statistical evidence supported strong content validity.

Data Collection

Similar in procedure to my pilot study, I submitted to the superintendents of schools an agreement to run a study entitled Letter of Cooperation. After receiving permission from the superintendents and IRB approval, then I randomly selected participants using their ID numbers associated with a generated list of random numbers (e.g., Johnson & Christenson, 2005). After making a general announcement regarding the introduction of my study, I sent invitations to the randomly selected participants. As participants returned the required consent and assent forms, they received an access code to log onto the Multi Health Systems website and instructions to complete the MSCEIT. I followed the same procedures for this study.

The authors designed the MSCEIT to resemble a selected response test that takes approximately 30-45 minutes for the participant to complete the 141-item test (Mayer et al., 2002). Most participants completed the MSCEIT in 30 minutes or less during the pilot study. The participants completed an encrypted web based test called the MSCEIT. After they opened the online MSCEIT, they were prompted to enter their first and last name, as well as their school-assigned identification numbers. The thought process was that entering their name and school identification number, as soon as they logged into the website, would lower the possible validity threats created without a proctor on site. MHS

scored each test in a two-week turnaround time; they provided a report in an Excel file, and listed the time the participant took to complete the test (MHS, 2009).

After receiving the MSCEIT scores, I entered the scores into the Software Package for Social Sciences version 21.0 (SPSS) for data analysis and hypothesis testing. With the help of a school administrator and supports staff, I accessed the schools' data banks to collect personal data and assessment information regarding the participants' gender, GPA, and HSPA English-LAL scores. Students' names were kept confidential and immediately decoded after all data had been loaded into SPSS. During the study, I used an encrypted USB storage device and password protected desktop hard drive to store the MHS reported raw data and participants' data.

Data Analysis

Data analysis was completed in order answer the research question: Is there a correlation between EIQ and the HSPA-English-LAL scores of secondary students, after accounting for the effects of gender and GPA? The research question generated the following hypotheses:

H_0. There is no correlation between the EIQ and HSPA English-LAL scores of secondary school students, after accounting for the effects of gender and GPA.

H_a. There is a positive correlation between EIQ and HSPA English-LAL scores of secondary school students, after accounting for the effects of gender and GPA.

I ran analyses by merging the collected data and uploaded the data into SPSS. I generated tables and figures using SPSS and visually reviewed them for normal

distributions, direction of linearity, and outliers. Descriptive statistics, correlations, and regressions were calculated to determine the results.

I selected multiple regression techniques because it provided flexibility by controlling for confounding variables while also analyzing the predictive power (Hoyt et al., 2008, p. 321). This study did not include an experimental group; therefore logic suggested using regression statistics to analyze the combination of predictor variables (EIQ, gender, and GPA) as potential determinants of literacy (e.g., Grim & Yarnold, 1995, p. 56). The data set included the criterion variable (HSPA English LAL scores), the predictor variable (EIQ), and the two control variables (gender and GPA).

Rationale for multiple regression analysis

Multiple regression analysis is a parametric statistical technique that compares two or more predictor variables (non-experimental studies) on a single criterion variable (Green & Salkind, 2007; Leedy & Ormrod, 2005; Triola, 2005). Employing multiple regression with a set of predictor variables and with the intent to predict outcome, is a more rigorous statistical approach than the use of a single predictor variable or correlation technique (Grim & Yarnold, 2004; Triola, 2005). Further, the use of predictive control variables in multiple regression helps to identify possible cause and effect relationships (Cook & Cook, 2008; Hoyt et al., 2008). Where strong anticipated relationships exist, a researcher may use regression to determine the degree of prediction among separate predictor variables to account for the statistically significant relationship (Hoyt, Leierer, & Millington, 2006).

Variables

Different from published studies that have investigated the relationship of EIQ to GPA; this study focused on literacy as a specific measure of academic achievement, rather than generally getting good grades (Holt, 2007; Kvapil, 2007; Mendes, 2002). To investigate the linear relationship between the MSCEIT predictor and literacy criterion variables, I selected gender and GPA as statistical control variables. Gender and GPA are meaningful variables because of the potential effect on the criterion variable, literacy. Additionally, the use of control variables tends to heighten the accuracy of the regression equation when compared to a simple or bivariate regression model (Grim & Yarnold, 1995). Accuracy improves because a participant would have to perform at least as good on the literacy test, while accounting for gender and GPA, as they would with only high achievement on the MSCEIT alone. After considering the effect of the predictor scores they did not reduce the accuracy of the prediction results.

As a potential explanation for heightened literacy skills, the relationship between literacy and EI was the hypothesis of this dissertation. The regression analysis mentioned, was conducted using HSPA English LAL scores, as the criterion variable and MSCEIT EIQ scores as the predictor variable. Gender was coded as male (1) or female (2). The variable was limited to male or female as reported on school records and on the HSPA. Effects due to gender were thought to be relevant to this study because, historically, there are differences in test taking; girls score higher on literacy tests. It was important to control for this effect so that any relationship that emerged was due more directly to the EIQ and literacy correlation.

    A student's GPA indicates the overall academic success across his or her academic classes (Keenan, 2010, personal communication). Using GPA was thought to help to control for the recognized correlation between academic skills and literacy, rather than report a false correlation actually due to general high performance in school and on tests. Students who perform well in school may simply perform well on the HSPA, thus controlling for this effect, seemed logical and strategic in similar studies that employed control variables (e.g., Holt, 2007, Kvapil, 2007; Mendes, 2005). Using control variables provided data to generate an analysis that determined the degree of regression and predictive ability. The following table lists the proposed criterion and predictor variables that were investigated (Table 1).

Table 1

List of Criterion and Predictor Variables

Construct	Criterion variable	Predictor variable
Ability to read and write	HSPA LAL raw score of 100-300	
Ability to understand, use, and manage emotions		MSCEIT total EIQ raw score of 50-150
Participant's gender		Gender: coded as a 1 (male) or 2 (female)
A participant's academic achievement		GPA, rounded to the nearest tenth

Regression analysis

Before conducting the regression analysis, descriptive statistics (means, SDs, frequencies, and bivariate correlations), related to the response distribution of the data were screened for anomalies and outliers. Included in the screening of descriptive statistics, SPSS generated scatterplots. The visual examination of the relationship between literacy and EIQ was prudent because it screened a relationship that could actually be curvilinear. After data screening, I tested the primary hypothesis using regression analysis. Employing multiple regression statistics, SPSS showed the predictive ability, in terms of emotional intelligence (EIQ) and success on HSPA scores while holding constant the additional predictor variables (Bennett, 2006; Green & Salkind, 2007).

The multiple correlation coefficient (R) was reported to interpret the strength of the linear relationship between the criterion variable, HSPA-LAL scores, and the weighted combination of the predictor variables (Grim & Yarnold, 1995; Hoyt et al., 2006). The adjusted multiple correlation coefficient, also known as the coefficient of

determination (R^2), will explain the percentage of variance of the correlation, when all regressors are taken into effect (Slavin & Smith, 2009; Triola, 2005). For example, if the relationship between the criterion and predictor variable was strong ($R = 0.8$), then the coefficient of determination ($R^2 = 0.64$) showed that 64% of the variance in the correlation was accounted for the relationship with the predictor variable. Because only three predictor variables were included, as well as a large sample size, I expected that the coefficient of determination would have very good strength.

Inferential statistical analysis determined the degree, if any, that the regression was significant. The F statistic explained significance of the relationship between the three predictor variables on the criterion variable, otherwise known as goodness of fit in regression models (StatTrek.com, 2011). SPSS output of beta weights helped determine the predictor variable that had most effect on literacy scores. The probabilities associated with the beta weight for EIQ, were used to determine whether the slope was significant from zero. In order to reject or fail to reject the null hypothesis, a 95% confidence interval ($\alpha = 0.05$) was used for hypothesis testing.

Pilot Study Results

The completion of the pilot study occurred during in the spring of 2010 at a high school in Essex County, New Jersey. Following IRB procedures, I contacted 46 senior students during visits to the school, and distributed the parent consent forms. After collecting parent consent forms on subsequent visits, student consent forms were collected, and I distributed the password and login directions to complete the online MSCEIT. During the process, there were many students who were absent at the

beginning of the period because attendance was not recorded immediately at the start of the day. It is possible that some students were inclined to participate, but they were absent when I returned to collect the parent consent forms. For this study, I chose to visit toward the time that the teacher actually recorded attendance and during non-instructional time because that timing seemed strategically sound.

Of the 46 students, I collected 14 parent consent forms, which was a 30% return rate. Of those 14 students, 11 students or 79% completed the online assessment. A noted weakness occurred while calculating the number of participants who completed the study compared to the total number of participants contacted. Although the number of returned parent consent forms could improve by visiting at a time that students were required to be present for attendance purposes, the actual 24% participation provided rationale to increase the total random selection in an effort to reach the targeted sample of 107. After considering the 30% return rate for consent forms and actual 24% participation, I needed to contact approximately 350 participants. Because the total available population was 350 at the participating school for the pilot, I included two schools in order to increase the pool of potential participants and maintain random selection for the study. Recruiting two schools that fell within similar District Factor Group (DFG) and with a large student population would help to maintain a homogenous population as defined by the New Jersey Department of Education (NJ DOE, 2006d). The state largely identified DFG by socioeconomic status of each school district within New Jersey.

Finally, some participants did not follow the directions regarding school identification numbers. Some students included their first and last name rather than filing

their last name and school identification on the MSCEIT. Although the intent of these procedures was to help participants feel that the information they provided was confidential, decoding the information after merging the MSCEIT into the Excel spreadsheet was possible. Students at each school received a school-based password in order to differentiate students from each school and match the confounding data. Considering that some students had the exact same name, I requested that students' type their first and last name as well as a portion of their student identification number in the space provided on the MSCEIT form. Multi Health System scoring organizer also tagged each completed MSCEIT with an ID number, which simplified the decoding process after I manually added the students' HSPA scores, gender, and GPA to the Excel spreadsheet for uploading into SPSS.

Measures Taken for Protection of Participants' Rights

The protocol outlined by Walden University Institutional Review Board assures protection of participants' rights and that researchers adhere to a general code of ethics. During the pilot study, the superintendent required that all parents receive a parent consent form rather than just the parents of 17-year-olds. Parent consent affords protection to under aged participants. Similarly, Szuberla (2006) collected participants' parent/guardian consent in a study regarding emotional intelligence. After I received permission from the cooperating organization and received IRB approval to complete the pilot study, then I followed the proposed procedures outlined in chapter 3, while noting the strengths and weaknesses. For this study, I followed the same procedures and included in the appendix the following forms and letter: a) letter of cooperation, b)

parental consent, c) students assent (first reminder after change of procedures), and d) B-instrument qualification letter from Multi-Health Systems.

Consent and Assent

I included in this study, randomly selected student participants registered at two similarly DFG ranked high schools in New Jersey, who have taken the New Jersey High School Proficiency Assessment, and were age 17 or older. Once identified, in order to participate the students were required to have their parents sign a consent form. Subsequently, the student participants were required to sign an assent form.

Initial Contact with Potential Participants

I contacted the school's superintendent by sending a letter of cooperation in order to introduce the problem, purpose of the study, and interest to run the study at their high school. As a follow up by telephone, I requested permission to randomly select a total of 350 senior students using a random table of numbers associated with their ID numbers. Once the students were selected they were contacted with a general announcement that explained that a study would be taking place. This announcement was held during a few minutes during the school day as determined appropriate by each superintendent or building administrator. In the announcement monologue, students were asked to share the information and parent consent letter with their parents or guardians. I distributed parent consent forms during a time determined appropriate by the building administrator via the use of interschool mail. Two plausible times during the school day included classes that cover emotional intelligence content such as Health and Physical Education and Psychology (NJDOE, 2009) or simply during the homeroom/home base period. The

homeroom period was used at both schools and seemed to be the best option. Both

curricula had some degree of alignment with the topic of this study, and so the students

may better understand the purpose of the study and the theory behind it as discussed

during the lessons that address social and emotional health; however, the final decision

was with the building principal.

Informed Consent Procedures

The selected students received a parent consent form during a time that the

building administrator stipulated. Students were encouraged to discuss the information on

the consent form with their parent or guardian and decide if they would like to

participate. Because the superintendent preferred all students' parents, regardless of the

student's age, to complete the parent consent form during the pilot study, I followed the

same procedure for this study. During subsequent visits, I supplied students with an

assent form after collecting their parent consent form. After the student signed the assent

form, I gave them the access link to the MHS website and the directions to access the

MSCEIT.

Summary

The objective of this quantitative study was to investigate the predictive

relationship between EIQ and HSPA English LAL of secondary students. Considering the

available literature, I developed the research question: Is there a correlation between EIQ

and the HSPA English LAL scores of secondary students, after accounting for the effects

of gender and GPA? The multiple regression design of this study is a popular design

among educational researchers who can draw upon a simple random sample.

I developed hypotheses from the research question. Raw data was collected from randomly selected registered seniors at two public high schools, who have taken the HSPA, and age 17 or older. Additionally, adherence to the institutional review board procedures that outlined the criteria for participant selection occurred. The school notified students, through a general announcement, that a study would take place. After distributing parent consent forms and visits to collect parent consent forms and student assent forms, then I supplied the participants with an access code to the online MSCEIT. As participants completed the online assessment, collection of the predictor control data from the high school data bank, completed the data sets. I entered the data into an excel spreadsheet and then transfer the complete data set to SPSS Version 21. The MSCEIT scores were used to represent the predictor variable, while the HSPA scores represented the criterion variable. The two predictive control variables included gender and GPA.

Chapter 4: Results

The data analysis I present in Chapter 4 begins with a review of the research problem and purpose. Next, I present a description of procedures of the data collection and sampling. A discussion ends the chapter regarding descriptive statistics, correlations, regression model, and addresses the research question and hypotheses.

The framework of this study emerged after I considered evidence that showed unimproved literacy scores, among U.S. students, and that low scores had remained a trend despite decades of educational research and reform efforts (Baer et al., 2007; Lemke et al., 2005; Marzano, 2001). High school graduates entering the workforce, postsecondary school, or the military tend to show their inability of expression when considering exit scores on high school literacy tests (e.g. New Jersey High School Redesign Steering Committee, 2008) and remediation in community and public schools in New Jersey. The best pedagogical methods have not succeeded in addressing this problem, and understanding the relationship between literacy and emotional intelligence could address the problem.

Data Collection Process

After I received permission to run the study at each school, I contacted the building administrators. Each administrator used the IRB approved scripted announcement describing the upcoming study during the regularly scheduled announcements for the school day. I random extracted names and IDs from each school's database and then transferred to a spreadsheet. The extracted names and IDs helped me to determine the homerooms to which I would send the invitations. After generating

invitations, in the form of parent consent forms, the invitations were distributed. Parent consent forms and student assent forms are included in the appendix B and C respectively.

Next, I held a meeting with potential participants where I fielded questions, I collected assent forms, and then I distributed directions and passwords to access the online MSCEIT. After participants completed the online MSCEIT, they electronically submitted their test. Multi Health Systems scored each test and returned the scores to me. With the assistance of the school administrators, I collected demographics, HSPA test scores and GPAs for the students who completed the MSCEIT. I cleaned the data of names and then I copied the information to MS Excel. After I organized the data, I uploaded the set into SPSS for data analysis.

The population for this study consisted of 17-year-old (or older) senior students from two New Jersey high schools. The total number of senior students enrolled at the time was 492. To ensure generalizability of the findings, I calculated the necessary sample size at 107, using the Power Statistic calculator and sample size equation (Fawcett & Garity, 2009). At the deadline to return the parent consent forms, few students had returned their forms, and I did not collect enough participants' parent consent to meet statistical requirements for even a small sample of 30 participants.

I discussed strategic options for improved participation with my dissertation committee. With committee approval, I submitted a Change of Procedure application to the Institution Review Board (IRB) to include the use of an incentive. Upon IRB approval, I re-invited randomly selected students who had not volunteered to participate

in the study. I contacted all participants and offered free pizza or equivalently priced coupon for the same store. The incentive to participate was only minimally successful. After sending two reminders and reaching a minimum sample size, a third reminder would exhaust time, add to financial constraints, and I determined the effort to be ineffective.

An additional 18 students volunteered after I added the incentive and increased the total to 38 participants. Although the participation rate was only 10.8% among the invited students, the sample was an acceptable size for hypothesis testing as 10 participants for each of the predictor variables reached the minimum recommendation of 30 participants (Fawcett & Garity, 2009). The small sample did raise concerns regarding ability to generalize to a larger population (Fawcett & Garity, 2009). I discussed the small sample size and make recommendations for improving this issue in future research in Chapter 5.

Analysis

In this study, I used SPSS version 21.00 to analyze the data. Prior to employing multiple regression analysis for hypothesis testing, I screened data for outliers. No abnormalities were observed. Descriptive statistics were generated for the MSCEIT, HSPA, and GPA. Reliability estimates, Pearson product-moment correlations (PPM), and regression analysis followed.

Descriptive Statistics

The descriptive statistics for the sample ($N = 38$) appear in Table 2. I included gender as a predictor variable. Male ($n = 10$) and female ($n = 28$) respondents were coded

as1 or 2 respectively, in the SPSS analysis. The mean GPA (M = 3.56, SD = .62)

indicated that most of the students were academically above average. The schools'

district factor group (DFG) supported the expected high GPAs and proficient or advanced

on the HSPA-LAL.

Table 2

Descriptive Statistics for Selected Variables (N = 38)

Variable	*M*	*SD*	Low	High
Grade Point Average	3.56	0.62	1.64	4.27
Language Arts HSPA Scores	247.82	16.52	188.00	272.00
Emotional Intelligence Scores	95.60	10.83	59.49	117.04

Note. Low and High columns indicate the actual range of the results.

The mean EI (M = 95.60, SD = 10.83) score fell within the low average range (90-

99) of interpreting MSCEIT scores of overall EIQ (Mayer, Salovey, & Caruso, 2002).

None of the students scored above the "competent" qualitative range of 117, which

simply indicated room for growth. The EI scores indicated that most students had varying

amounts of average EIQ. The HSPA average of the sample (*M = 247.82, SD* = 16.52)

was noticeably higher than the state average mean scale score (*M* = 229.90) on combined

Language Arts proficiency. In the pool of participants in this study, more students scored

in the proficient and advanced proficient range than the partially proficient range. The

state mean for proficiency in LAL was 87.6 % while the mean for the two schools was

9.9% higher at97.5%.

Visual inspections of the three predictor variable histograms with superimposed curves, scatter plots, and stem-and-leaf revealed that the distributions of the sample were near normal. There was a skew slightly to the left for all three predictor variables, however the distribution was between -2 and +2 indicating proximity to normal distributions (Hopkins & Weeks, 1990). The scatter plots showed linear rather than curvilinear correlation. Further investigation of the data set showed that two low GPAs and LAL scores were collected from two male students causing the distribution curves to skew slightly left. Consideration was given to removing the two sets of scores. However, the values were not extreme, and therefore I kept the data to maintain the data set as a random sample. Based on the outcomes of these basic diagnostic indicators, I proceeded with the data analysis.

Reliability Estimates

MHS provided reliability estimates for the standardization sample. The internal consistency for scores on the full scale MSCEIT were reported as .91 and test-retest reliability as .86 (Mayer, Salovey, & Caruso, 2002). I did not include a test-retest strategy in this study as it was out of the scope. However, using the item-level information for this sample provided by MHS, SPSS generated a Cronbach's alpha of .70 for scores generated by the 141 MSCEIT items. The coefficient alpha was an acceptable reliability estimate for further data analysis (Henson, 2001). Because the NJ HSPA is a standardized, state-administered assessment, item scores for HSPA-LAL were not available to estimate reliability. With the assistance of a school administrator, I collected the students' GPAs from official school records and I assumed the records to be

acceptable for use in this the study. Further, I considered the gender coding to be accurate as the names/identification numbers that were reported on the MSCEIT matched the information that I collected for GPA and HSPA scores.

Research Question and Hypotheses

Data from 38 high school students were used to answer the research question: "Is there a correlation between EIQ and the HSPA-English-LAL scores of secondary students, after accounting for the effects of gender and GPA?" The null and alternate hypotheses that emerged from the research question follow.

Hypotheses

H_0. There is no correlation between the EIQ and HSPA English-LAL scores of secondary school students, after accounting for the effects of gender and GPA.

H_a. There is a positive correlation between EIQ and HSPA English-LAL scores of secondary school students, after accounting for the effects of gender and GPA.

In order to provide prediction estimates that a basic correlation study would not provide, I used multiple regression analysis. The prediction estimates were achieved by controlling for known effects due to gender and intelligence as indicated by their GPA. Initially a large sample size was chosen to ensure generalizability, however the actual study failed to meet the same percent of participation compared with the pilot study participation estimates. Although the small sample was a weakness, acceptable power was observed and discussed below in the statistical analysis.

Correlations and Regression Analysis

The Pearson Product Moment (PPM) correlations among the four study variables appear in Table 3. The moderating variables were gender (male students = 1 and female students = 2), and GPA scores. When examining the relationship of gender to EIQ, female students were found to have higher GPAs (r= .35, p = .03) and LAL scores (r= .32, p = .05). Considerations regarding the gender correlations noted that two boys with markedly lower GPAs reduced the mean score for GPAs among the male students, and that male students accounted for approximately one third of the sample. Overall, GPA was positively correlated with LAL (r = .80, p< .001).

Table 3

Pearson Product-Moment Correlations for gender, GPA, LAL, and EIQ (N = 38)

Variable	1		2		3	
Gender						
GPA	.35	*				
Language Arts	.32	*	.80	***		
Emotional Intelligence	.23		.28		.43	**

Note. *p< .05.; ** p< .01.; *** p< .001.

Hypothesis Testing

To analyze the predictive relationships in the research question, a single tiered regression model was conducted (see Table 4). The overall model fit was significant F(3, 34) = 25.25, p <.001, and the three predictors accounted for 69.0% of the variance in the student's language arts score, indicating an acceptable level of power in the analysis. A

primary goal was to control for effects from two recognized variables, GPA and gender. I

expected the strong correlation between HSPA-LAL scores and GPA (β = .74, p< .001)

because, in general, smarter students who earn good grades also score well on

standardized tests. The relationship of gender and LAL scores was weak, however. In

review of the regression results, gender essentially had no effect on the outcome of LAL

scores (β = .01, p = .900) in contrast to the PPM correlation noted earlier. The weakened

relationship occurred because GPA controlled for some of the effect on LAL in the

regression, where the earlier PPM showed straight correlation.

Table 4

The relationship between EIQ and HSPA-LAL scores after accounting for the effects of

gender and GPA among secondary students. (N = 38)

Variable	*B*	*SE*	β	*p*
Intercept	145.58	15.04		.000
Gender	0.48	3.81	.01	.900
Grade Point Average	19.54	2.77	.74	<.001
Emotional Intelligence	0.33	0.15	.22	.037

Note. Full Model: F (3, 34) = 25.25; p<.001; R^2 = .690.

Considering the overall results, the regression analysis did help me to provide an

answer the question: Is there a correlation between EIQ and the HSPA-LAL scores of

secondary students, after accounting for the effects of gender and GPA? The null

hypothesis was rejected and the alternative hypothesis was supported. The relationship

was modest (β = .22, p = .037), most likely due to the small sample size, but does

demonstrate some conclusion validity. Of note, a reduction of strength in the relationship appeared when comparing the correlation results ($r = .43$, $p = .007$) with the regression findings ($\beta = .22$, $p = .037$). The regression findings indicated that gender actually did not contribute to the relationship while GPA had a large effect due to the general idea that GPA is an indicator of general intelligence and logically includes some LAL ability. The relationship between EIQ and LAL continued to exist after controlling for this relationship, suggesting that even some students who had low GPA tended to have higher LAL scores if their EIQ scores were also higher.

Summary

The purpose of this multiple regression study was to examine the relationship between literacy skills and emotional intelligence, while controlling for gender and GPA. I conducted this study among senior students at two public secondary schools in Essex County, New Jersey. I collected responses from 38 students for this study. The multiple regression analysis confirmed that there is a relationship between the criterion variable (students' LAL scores) and the predictor variable (students' EIQ scores) while controlling for gender and GPA. The alternative hypothesis was supported.

In Chapter 5, I compared these findings with the literature. In addition, I have drawn conclusions and implications on social change. I finish the dissertation with a series of recommendations.

Chapter 5: Discussion, Conclusions, and Recommendations

In this quantitative study I investigated the predictive relationship between emotional intelligence and students' expressive abilities through their writing. After completing a pilot study, I collected data from 38 senior students at two public schools in New Jersey. Data included scores from the New Jersey High School Proficiency Assessment-Language Arts portion (HSPA-LA) and Mayer, Salovey, Caruso, Emotional Intelligence Test (MSCEIT). I included gender and GPA as two control variables. I analyzed the data for potential predictive power among the variables. In this chapter, I reviewed the rationale for this study, which led to a discussion of an interpretation of the findings. Included in this chapter are the details regarding the limitations of the study, recommendations for further action, implications for social change, and concluding statements.

Overview

In light of the scholarly research, which depicts a decade of near unimproved literacy test scores among U.S. secondary students, few educational research studies have considered the predictive nature between LAL and EIQ. In Chapter 2, my review of literature uncovered overlapping theories regarding how humans tend to learn through multiple learning styles and pedagogical strategies. Information regarding the implications associated with improved literacy pointed to the idea that emotional intelligence is a factor in growth of literacy expression among people. I investigated whether a positive relationship did exist, and then determined to what degree MSCEIT scores predicted HSPA-LAL scores.

Understanding the potential factors that influence LAL may be helpful to educators and educational trainers in teaching students to improve their expressive skills in literacy. The findings of this study can provide teaching practitioners information that will help improve pedagogical methods. Practitioners, as early as elementary teachers, can focus associated EI curriculum content with literacy. To this extent, the study was guided by the following research question: Is there a correlation between EIQ and the HSPA-English-LAL scores of secondary students, after accounting for the effects of gender and GPA?

Null and alternative hypotheses were generated from the research question. The hypotheses follow:

H_0. There is no correlation between the EIQ and HSPA English-LAL scores of secondary school students, after accounting for the effects of gender and GPA.

H_a. There is a positive correlation between EIQ and HSPA English-LAL scores of secondary school students, after accounting for the effects of gender and GPA.

The hypotheses addressed the single construct of overall emotional intelligence. Using the MSCEIT as a measurement tool, students' perception, use, understanding, and management of emotions estimated students overall EIQ and I used the scores as the predictor variable. Students' scores on a state standardized test estimated their LA literacy skill, and I used those scores to represent the criterion variable. I used GPA and gender as control variables.

This study was quantitative and conducted using a simple random sample of high school seniors from two public schools in Essex County, New Jersey. The sample

consisted of 38 students who were 17 years old or older. After receiving parental permission, students completed the online MSCEIT version 2.0 at their own convenience. With the help of administrators, I collected the additional criterion and control variable data from each school's secure database.

I uploaded data into SPSS to generate descriptive statistics, and to conduct the inferential analysis to determine if emotional intelligence was related to literacy skill while controlling for GPA and gender. Cronbach's alpha demonstrated an appropriate level of internal consistency of the MSCEIT item level responses among participants. Pearson's Product Moment (PPM) correlations were performed to determine if a relationship existed between EIQ and LAL. Further, a multiple regression analysis determined the significance of the relationship while controlling for GPA and gender. The data collected and the correlations observed supported the alternative hypothesis that there is a positive correlation between EIQ and HSPA English-LAL scores of secondary school students, after accounting for the effects of gender and GPA.

Interpretations of the Findings

Initial correlations showed a significant relationship between emotional intelligence and literacy scores. The strength of regression coefficients suggested a significant relationship between the two variables after accounting for GPA and gender. The interpretations of this analysis provide evidence to reject the null hypothesis. The predictive nature of EIQ on students' literacy scores appeared to be positive and consistent with similar studies (Martin, 2010; Szuberla, 2005). Although these studies

used various EI testing tools, findings remain the same; the relationship between general and specific academic skills and emotional intelligence are related.

In addition to confirming the positive association between EI and general academic success found in previous studies, the findings of this study actually focused on one specific measurement, literacy, which is considered in most calculations of general academic success. Delineating literacy as a specific measurement differentiated this study from prior studies thus deepening the understandings associated with the breadth of theories that framed this study.

In the Chapter 2 literature review, I highlighted prior studies and researchers who had investigated the relationship between EI and associated behaviors. Those researchers asserted that EI contributed to academic success. Interestingly, many of the studies included high school and postsecondary students in the sample, yet most social and emotional interventions actually become less focused as students' progress through grade levels (Martin, 2010). The concept of EI intervention extending into secondary curriculum is addressed in the social change section below.

Limitations of the Study

One limitation of this study was the small sample size. Regardless of the change of procedures for the study, incentives for participants did not improve the sample size: a problem that may reflect the broader challenges of conducting any research with this population. Although the strength of the relationship between literacy scores and EI was moderately strong, the small sample did raise concern regarding the ability to generalize to a larger population (Fawcett & Garity, 2009).

Internal consistency for the MSCEIT scores that I used in the regression analysis reached the recommended minimum ($\alpha = .70$), however the study was limited to the investigation of total EIQ scores. MHS also reports Area and Branch scores. Investigation into Area or Branch scores could provide additional insight between specific aspects of EI as it relates to literacy. Similarly, HSPA-LAL overall scores can be categorized by short and extended response. Each score indicates specific literacy skills. Analyzing EI and literacy by subcategories could provide specific indications of which skills relate the strongest. Inclusion of Branch and Area EIQ scores and specific categories of literacy scores into regression models may focus predictive elements. Understanding the root of predictive elements may direct intervention in one specific EI category rather than generalizing to overall EIQ.

Recommendations for Further Study

In light of the evidence supporting a significant predictive relationship between emotional intelligence and literacy skills, further inquiry is necessary. The inquiry should be two-fold; first to determine cause-and-effect between EIQ and literacy, and second, to determine the potential improvement of the perception, use, understanding, and management of emotions as direct implications on literacy skills. While determining the improvements from EI training, researchers should seek to identify if one or a combination of particular emotional intelligence branches improve literacy over any other branch as measured on the MSCEIT.

In order for future researchers to accomplish the aforementioned two-fold inquiry, they should perform a similarly designed study that includes a larger sample and

alternative variables. A study that includes a larger sample will improve conclusiveness as to the effect of EI on literacy. The larger sample will also further substantiate the generalizability of the predictive nature between emotions and literacy to a larger population. Controlling for alternative yet plausible variables that could explain the increase in LAL (while camouflaged as EIQ) will help narrow the scope of alternative reasons for improved LAL.

Second, a larger sample will allow future researchers to design the study using a control group. Including a control group will provide researchers an opportunity to determine the degree of change (if any) after an educational institution's use of emotional intelligence training intervention and the actual effect on a student's improvement and use of emotional skill. The researchers should consider a pretest and posttest design that measures literacy, emotional intelligence training, and EIQ. In all, the investigations should focus on the training effect on emotion and determine if the improvement in EIQ also cause improvement in literacy. In scenarios where intervention does not yield improved EIQ, then the researcher can perform a third analysis. Here the researcher would seek to determine an expected zero increase of LAL scores when there is zero increase of EIQ.

A correlation between two variables does not necessarily imply that one causes the other. Rather, some third factor may be influencing both. Hence, qualitative techniques may help identify potential explanations for relationships between EI and literacy. Teacher reports and parental interviews regarding students' use of emotional skills could help identify potential explanatory variables. For example, teacher and parent

observations may provide additional information as to how students make decisions during emotional situations and describe how students express themselves verbally.

A follow-up, longitudinal study could improve information as to how well literacy scores, emotional intelligence, or combinations of both predict success at particular times during postsecondary school. For example, further research could investigate emotional intelligence scores and postsecondary placements while controlling for LAL scores. Schools have identified a need for some level of behavioral training during primary and middle schools and given the evidence of this study, perhaps there exist critical times during an adolescent's life where intervention is most productive. A concerted effort between a researcher and a funded source would be ideal in planning such an undertaking.

Implications for Social Change

In light of the United States educational leaders' movement toward reform of literacy programs, understanding the relationship of emotional intelligence to literacy has become increasingly important. Educational leaders continue to agree that low literacy skills have a negative effect on written communication, work place readiness, and global STEM competition (Lemke et al., 2005; Winters & Greene, 2005). In general, literacy predicts more than academic achievement worldwide because literacy and associated abilities of expression have been argued as essential social skills that reduce the incidence of oppression and poverty (Freire, 1970; Gardner, 1993, 2008). Implications of literacy rates are relevant to United States citizens as well. Factors such as poverty and oppression are often associated with the reality of unemployment. Unemployment is

specifically related to low literacy skills as observed in poverty stricken areas in the United States (Corley, 2003). A potential solution to the social problem noted above emerges as one considers the significance that EI has on literacy rates.

As stated earlier, EI is a skilled intelligence. In other words, individuals who participate in both formal and informal EI training may improve their emotional intelligence. Literacy improvement, resulting from educational strategies and interventions aimed at improving EIQ scores, could support growth of students' skills in related areas such as written and verbal communication, decision-making, and conflict resolution. The lack strategies to improve literacy are unfortunate because EI training is potentially a didactic intervention. As an intervention, EI instruction for students could improve literacy and communication skills in postsecondary experiences. EI training could be especially impactful when one considers the potential emotional and academic growth in students who have difficulty expressing themselves in dialogue and written form.

Educational leaders should consider providing funding and resources for instructional support that is necessary for improved emotional intelligence training. Helping students to master the perception, use, understanding, and management of emotions may lead to applicable use in real life decision-making situations related to literacy and communication. The findings of this study are exciting because there is an opportunity to affect social change by improving literacy and indirectly the social problems associated with low literacy such as poverty and oppression. As the U.S. continues funding compulsory education and considering the potential successes

associated with EI training, improved literacy rates may transcend into the realization of societal goals. The strength of EI and the utility of expressive abilities can be achieved with strategies that have not been discovered. EI training may better prepare students to become contributing members of a global workforce.

Conclusion

The genesis of this study occurred as a review of educational literature and related fields of research revealed a plausible study of improved literacy skills by the improvement of emotional intelligence. Prior research indicated potential interventions to improve literacy scores through a variety of teaching methods and techniques. Few studies actually indicated the potential relationship between emotional intelligence levels and literacy abilities or the potential for emotional intelligence training as a viable teaching strategy to improve literacy skills. Further, understanding the degree of relationship between emotional intelligence and literacy could improve the direction of literacy curriculum in schools or maintain the current standards and focus on a different, yet plausible variable.

This study contributes to positive social change by adding to the scholarly information regarding human behavior and emotional growth among adolescents, as students transition to postsecondary school endeavors. In conducting this study, I identified a significant relationship between a student's literacy skills and their perception, use, understanding, and managing of their emotions in order to make multiple perspective decisions and creative solutions to problems (their EIQ) (Mayer et al., 2004, 2008; Zhao, 2008). Inferences drawn from the findings provide rationale for educational

leaders and researchers to investigate the significance of EI on literacy on a larger scale. If the findings from the current study are duplicated on a larger scale, then educational leaders could enhance curriculum with EI screening and training. When educational leaders can validate the use of EI to improve literacy among adolescents, then they may persuade the people who fund curriculum development, to fund the research and development of EI enriched curriculum. Improving literacy through EI intervention may affect global social change. For example, improved EI skills can increase literacy. Increased literacy skills can potentially reduce the incidence of poverty.

References

Adamson, L. (2009). *Servant leadership in a community college: A multivariate analysis of employees' perceptions*. (Doctoral dissertation). Retrieved from Proquest Dissertations and Theses,

http://search.proquest.com/docview/276040050?accountid=148722

Baer, J., Baldi, S., & Ayotte, K. (2007).*The reading literacy of U.S. fourth-grade students in an international context: Results from the 2001 and 2006 Progress in international reading literacy study (PIRLS)* (NCES 2008-017). Washington, DC: National Center for Educational Statistics, Institute of Education Sciences, U.S, Department of Education,

http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2008017.

Bennett, J.V. (2006). *Community based learning and social support in the Midwestern district high school internship program: Relative influences on seniors' occupational and citizenship engagement orientations*. (Doctoral dissertation). Retrieved from Proquest Dissertations and Theses (UMI No. 3238198).

Berenson, R., Boyles, G., & Weaver, A. (2008). Emotional intelligence as a predictor for success in online learning. *International Review of Research in Open and Distance Learning*, *9*(2), 1-17.

Bergen, D. & Fromberg, D. P. (2009). Play and Social Interaction in Middle Childhood. *Phi Delta Kappan International*, *90*(6), 426-430.

http://www.mcckc.edu/longview/SocSci/PSYC/westra/child/10play.pdf

Boyer, E. L. (1983). *High school: A report on American secondary education*. Princeton,

NJ: Carnegie Foundation for the Advancement of Teaching.

Brimley, V., & Garfield, R. R. (2005). *Financing education in a climate of change*. (9th ed.). Boston: Pearson.

Burke, J. (2000, April). *It's (beyond) time to drop the terms causal-comparative and correlational research in educational research methods textbooks*. Paper presented at the Annual Meeting of the American Educational Research Association. New Orleans, LA. Retrieved from http://www.eric.ed.gov/ERICWebPortal/search/detailmini.jsp?_nfpb=true&_&ERICExtSearch_SearchValue_0=ED445010&ERICExtSearch_SearchType_0=no&accno=ED445010

Carnevale, A. P. (2007). Access to opportunity: The need for universal education and training after high school. *Education Week, 26*(40), 34.

Cavenaugh, S. (2009). Singapore crafts vocational ed. With industries in mind. *Education Week, 28*(36), 10-11.

Chirot, D. (1994). *How societies change*. Thousand Oaks, CA: Pine Forge Press.

Claros, E. (2010). *The relationship between emotional intelligence and abuse of alcohol, marijuana, and tobacco among college students*. (Doctoral dissertation). (AAT 3398861). Retrieved from http://ezp.waldenulibrary.org/login?url=http://search.proquest.com.ezp.waldenulibrary.org/docview/275796723?accountid=14872

Cook, B.G., & Cook, L. (2008). Nonexperimental quantitative research and its role in guiding instruction. *Intervention in School and Clinic, 44*(2), 98-104.

Collins, J. (2001). *Good to great: Why some companies make the leap…and others don't.* New York: HarperCollins Publishers Inc.

Corley, M.A. (2003). Poverty, racism, and literacy. (ED475392). Retrieved from http://www.ericdigests.org/2003-5/poverty.htm

Cowles, M., & Davis, C. (1982). On the origins of the .05 level of significance. *American Psychologist, 37*, 553-558. DOI: 10.1037/0003-066X .37.5.

Cox, A. A. (1999). Review of the psychometric measurement Bar-On Emotional Quotient Inventory (Eq-i)]. *Mental Measurements Yearbook, 16*. (Accession No. 14122109).

Covey, S. R. (2004). *The seven habits of highly effective people: Powerful lessons in personal change.* NY: Free Press.

Creswell, J. W. (2008). *Research design: Qualitative, quantitative, and mixed methods approaches.* Thousand Oaks, CA: SAGE.

Dardello, A. D. (2007). *Using a theory of emotional intelligence to teach basic writers at a two-year college.* (Doctoral dissertation). (UMI No. 3260442) Retrieved from http://ezp.waldenulibrary.org/login?url=http://search.proquest.com.ezp.waldenulibrary.org/docview/304851895?accountid=14872

Darwin, C. (1872). *The expression of the emotions in man and animals.* London, England: John Murray. DOI: 10.1037/10001-014

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

Dewey, J. (1997). *How we think.* Mineola, NY: Dover Publications, Inc. (Republication from original work published 1910).

Dulewicz, V., & Higgs, M. (2000). Emotional intelligence: a review and evaluation. *Journal of Managerial Psychology*, *15*(4), 341-353.

Elias, M., Arnold, H., & Hussey, C. S. (2003). *EQ + IQ Best Leadership Practices for Caring and Successful Schools.* Thousand Oaks, CA: Corwin Press, Inc.

Evans, G. J. (2003). *Mentor programs and protégé outcomes*. (Doctoral dissertation,). (UMI No. 3099935). Retrieved from http://ezp.waldenulibrary.org/login?url=http://search.proquest.com.ezp.waldenuli brary.org/docview/305459035?accountid=14872

Eynde, P., & Turner, J. (2006). Focusing on the complexity of emotion issues in academic learning: A dynamical component systems approach. *Educational Psychology Review*, *18*(4), 361-376.

Farrelly, D. & Austin, E. J. (2007). Ability EI as an intelligence? Associations of the MSCEIT with performance on emotion processing and social task and with cognitive ability. *Cognition and Emotion*, *21*(5), 1043-1063. DOI: 10.1080/02699930601069404

Fawcett, J., & Garity, J. (2009). *Evaluating research for evidence-based nursing*. Philadelphia, PA: F. A. Davis.

Fairley, J. (2009). *Factors related to attitudes to caring for the elderly among three generations of nurses*. (Doctoral dissertation). (UMI No. 3366970). Retrieved from http://ezp.waldenulibrary.org/login?url=http://search.proquest.com.ezp.waldenuli brary.org/docview/305079054?accountid=14872

Freire, P. (1970). *Pedagogy of the oppressed*. New York: Continuum International

Publishing Group Inc.

Freire, P. (1998). *Pedagogy of freedom: Ethics, democracy, and civic courage*. Lanham,

MA: Rowman & Littlefield Publishers, Inc.

Gardner, H. (2008). *5 minds for the future*. Boston: Harvard Business Press.

Gardner, H. (2008). The end of literacy? Don't stop reading. *The Washington Post*,

February 17 p. B1.

Gardner, H. (2006). *Changing minds: The art and science of changing our own and other*

people's minds. Boston, Massachusetts: Harvard Business School Press.

Gardner, H. (1999). *Intelligence reframed: Multiple intelligence for the 21st century*. NY:

Basic Books.

Gardner, H. (1993). *Frames of Mind: The theory of multiple intelligences*, Tenth

Anniversary. NY: Basic Books.

Goleman, D. (1995). *Emotional Intelligence: Why it can matter more than IQ*. NY:

Bantam.

Goleman, D., Boyatzis, R., & McKee, A. (2002). *Primal leadership: Realizing the power*

of emotional intelligence. Boston, Massachusetts: Harvard Business School Press.

Goodlad, J. I. (1983). *A place called school: Prospects for the future*. New York:

McGraw-Hill.

Green, S. B., & Salkind, N. J. (2007). *Using SPSS for Windows and Macintosh:*

Analyzing and understanding data. (5th ed.). Prentice Hall.

Grimm, L. G., & Yarnold, P. R. (1995). *Reading and understanding multivariate*

statistics. Washington, DC: American Psychological Association.

Grisham, J. R., Steketee, G., & Frost, R. O. (2008). Interpersonal problems and emotional intelligence in compulsive hoarding. *Depression and Anxiety*, *25*(9), E63-E71. DOI: 10.1002/da.20327

Grubb, W. L., & McDaniel, M. A. (2007). The fakability of Bar-On's emotional quotient inventory short form: Catch me if you can. *Human Performance*, *20*(1), 43-59.

Hedges, L. V. (2008). What are effect sizes and why do we need them?. *Society for Research in Child Development*, *2*(3), 167-171.

Holt, S. (2007). *Emotional intelligence and academic achievement in higher education*. Available from Proquest Digital Dissertations Database. (AAT 3256101)

Hopkins, K. D., & Weeks, D. L. (1990). Tests for normality and measures of skewness and kurtosis: Their place in research reporting. *Educational and Psychological Measurement*, *50*(4), 717-729.

Hoyt, W. T., Imel, Z. E., & Chan, F. (2008). Multiple regression and correlation techniques: Recent controversies and best practices. *Rehabilitation Psychology*, *53*(3), 321-339.

Hoyt, W. T., Leierer, S., & Millington, M. J. (2006). Analysis and interpretations of findings using multiple regression techniques. *Rehabilitation Counseling Bulletin*, *49*(4), 223-233. DOI: 10.1177/00343552060490040401

Hsu, T. (2005). Research methods and data analysis procedures used by educational researchers. *International Journal of Research & Method in Education*, *28*(2), 109-133. DOI: 10.1080/01406720500256194

Ingersoll, R. M., & Smith, T. M. (2003). The wrong solution to the teacher shortage. *Educational Leadership*, *60*(8), 30-33.

Jacobson, L. (2007). Famed early-childhood philosophy expands horizons. *Education Week*, *26*(22), 10.

Johannessen, L. R. (2004). Helping "Struggling" Students Achieve Success. *Journal of Adolescent & Adult Literacy*, *47*(8), 638-647.

Johnson, B., & Christensen, L. (2004). *Educational research: Quantitative, qualitative, and mixed approaches*. (2nd ed.). Boston: Pearson Education, Inc.

Justice, M., & Espinoza, S. (2007). Emotional intelligence and beginning teacher candidates. *Education*, *127*(4), 456-461.

Kutash, K., Duchnowski, A. J., Robbins, V., Calvanese, P. K., Oliveira, B., Black, M., & Vaughn, D. (2000). The school and community study: Characteristics of students who have emotional and behavioral disabilities served in restructuring public schools. *Journal of Child and Family Studies*, *9*(2), 175-190.

Kvapil, L. (2007). *Emotional intelligence and academic performance of at-risk high school students*. (Doctoral dissertation). (UMI No. 3255951) Retrieved from http://ezp.waldenulibrary.org/login?url=http://search.proquest.com.ezp.waldenulibrary.org/docview/304700573?accountid=14872

Lane, A. M., Meyer, B. B., Devonport, T. J., Davies, K. A., Thelwell, R., Gill, G. S., Diehl, C. D., Wilson, M., & Weston, N. (2009). Validity of the emotional intelligence scale for use in sport. *Journal of Sports Science and Medicine*, *8*(2), 289-295.

Leedy, P. D., & Ormrod, J. E. (2005). *Practical research: Planning and design*. (8th ed.). Upper Saddle River, New Jersey: Pearson Education Inc.

Leung, A. S., Meier, S. T., & Cottone, C. (2002). Buros Mental Measurement Year Book [Review of psychometric measurement Mayer, Salovey, Caruso Emotional Intelligence Test (MSCEIT)]. *Mental Measurement Yearbook, 16*. (Accession No. 16122837).

Li, Y., Yang, X., & Shen, J. (2007). The relationship between teachers' sense of teaching efficacy and job burnout. *Psychological Science* (China), *30*(4), 952-954.

Lindenbaum, D. (2009). Rhetoric or remedy? A critique on developing emotional intelligence. *Academy of Management Learning & Education*, *8*(3), 225-237.

Marzano, R. J. (2007). *The art and science of teaching: A comprehensive framework for effective instruction*. Alexandria, VA: ASCD.

Marzano, R. J., Pickering, D. J., & Pollock, J. E. (2001). *Classroom instruction that works: Research based strategies for increasing student achievement*. Alexandria, VA: ASCD.

Mathews, G., Emo, A., Funke, G., Zeidner, M., Roberts, R., Costa, P., & Schulze, R. (2006). Emotional intelligence, personality, and task-induced stress. *Journal of Experimental Psychology: Applied, 12*(2), 96-107. DOI:10.1037/1076-898X.12.2.96

Mathews, G., Roberts, R., & Zeidner, M. (2003). Development of emotional intelligence: A skeptical –but not dismissive-perspective. *Human development*, *46*(2), 109-114.

Maul, A. E. (2008). *Improving the measurement of emotional intelligence*. (Doctoral

dissertation). (UMI No. 3331711). Retrieved from

http://ezp.waldenulibrary.org/login?url=http://search.proquest.com.ezp.waldenuli

brary.org/docview/304696922?accountid=14872

Mayer, J. D., Salovey, P., & Caruso, D. R. (2008). Emotional intelligence: New ability or

eclectic traits?. *American Psychologist*, *63*(6), 503-517.

Mayer, J. D., Salovey, P., & Caruso, D. R. (2004). Emotional intelligence: Theory,

findings, and implications. *Psychological Inquiry, 15*(3), 197-215.

Mayer, J. D., Salovey, P, & Caruso, D. R. (2002). *Mayer-Salovey-Caruso Emotional*

Intelligence Test: MSCEIT User's Manual. Multi Health Systems, Inc. North:

Tonawanda, NY.

Mayer, J. D., Salovey, P., Caruso, D. R., & Sitarenios, G. (2003). Measuring emotional

intelligence with the MSCEIT V2.0. *Emotion*, *3*(1), 97-105.

Mendes, E. J. (2003). *The relationship between emotional intelligence and occupational*

burnout in secondary school teachers. (Doctoral dissertation). (UMI No.

3068418). Retrieved from

http://ezp.waldenulibrary.org/login?url=http://search.proquest.com.ezp.waldenuli

brary.org/docview/305456684?accountid=14872

McNeil, M. (2010a). Coveted 'i3' aid prompts flood of applications. *Education Week*,

29(36), 1.

McNeil, M. (2010b). Race to top buy-in level examined. *Education Week*, *29*(35), 1.

Merriam-Webster's collegiate dictionary. (11th ed.). (2005). Springfield, MA: Merriam-

Webster.

Merriam-Webster's online open dictionary. (2009). Merriam-Webster Inc. Retrieved at

http://www.merriam-webster.com/info/07words.htm

Nelis, D., Quoidbach, J., Mikolajczak, M., & Hansenne, M. (2009). Increasing emotional

intelligence: (How) is it possible?. *Personality and Individual Differences*, *47*(1),

36-41. DOI:10.1016/j.paid.2009.01.046

New Jersey Department of Education. (2009). *Historical context: Overview of New*

Jersey's statewide testing program.

http://www.state.nj.us/education/assessment/history.shtml

New Jersey Department of Education (2008). *New Jersey core curriculum content*

standards: Language arts literacy. New Jersey Department of Education.

http://www.state.nj.us/education/cccs/2004/s2_lal/NJ_LAL_Reading_Jan_9_2008

.pdf

New Jersey Department of Education. (2006a). *High school proficiency assessment*. New

Jersey Department of Education.

http://www.state.nj.us/education/assessment/hs/hspa/

New Jersey Department of Education. (2006b). *NJ Parents: Why assessment*. New Jersey

Department of Education.

http://www.state.nj.us/education/parents/assessment.htm

New Jersey Department of Education. (2006c). *Your Guide to the HSPA*. New Jersey

Department of Education.

http://www.state.nj.us/education/assessment/hs/hspa_guide_english.pdf

New Jersey Department of Education. (2006d). *New Jersey department of education*

district factor groups (DFG) for districts.

http://www.state.nj.us/education/finance/sf/dfg.shtml

New Jersey High School Redesign Steering Committee. (2008). *NJ steps: Redesigning education in New Jersey for the 21st century: A policy report of the New Jersey high school redesign steering committee.*

http://www.state.nj.us/education/ser/over/042508presentation_files/frame.htm#slide0001.htm

OECD. (2010). *PISA 2009 results: Learning trends: Changes in student performance since 2000*. (Volume V). Retrieved from

http://dx.doe.org/10.1787/9789264091580-en

Olsen, L. (2007). There is plenty of confusion about what it means to fully prepare students for life after high school. *Education Week*, *26*(40), 7-13.

Owen, C., & Solomon, L. (2006). The importance of interpersonal similarities in the teacher mentor/protégé relationship. *Social Psychology of Education*, *9*(10), 83-89.

Palmer, B. R., Gignac, G., Manocha, R., & Stough, C. (2005). *A psychometric evaluation of the Mayer-Salovey-Caruso Emotional Intelligence Test version 2.0. Intelligence*, 33(3), 285-305. DOI: 10.1016/j.intell.2004.11.003

Papadogiannis, P. K., Logan, D., & Sitarenios, G. (2009). *An ability model of emotional intelligence: A rationale, description, and application of the Mayer Salovey Caruso Emotional Intelligence Test*. Manuscript submitted for publication.

Pishghadam, R. (2009). Emotional intelligences in language learning. *Iranian Journal of*

Language Studies, *39*(1), 43-64.

Provasnik, S., Gonzales, P., & Miller, D. (2009). *U.S. Performance across international assessments of student achievement: Special supplement to the condition of education 2009*. U.S. Department of Education, NCES 2009-083. http://nces.ed.gov/pubs2009/2009083.pdf

Rosenbaum, J. E. (2007). Prepared for what? Matching our rhetoric to reality. *Education Week*, *26*(40), 36.

Rosete, D., & Ciarrochi, J. (2005). Emotional intelligence and its relationship to workplace performance outcomes of leadership effectiveness. *Leadership and Organization Development Journal*, *26*(5), 388-399.

Salter, D. (2005).*The measurement of a student: Psychometric considerations to student affairs practice*. Unpublished manuscript.

Saywer, J. (2002). *Flash review for statistics*. Boston: Pearson Education, Inc.

Senge, P. M. (1990)*. The fifth discipline: The art and practice of the learning organization*. NY: Doubleday.

Senge, P. M., Smith, B., Kruschwitz, N., Laur, J., & Schley, S. (2008). *The necessary revolution: How individuals and organizations are working together to create a sustainable world*. NY: Doubleday.

Slavin, R., & Smith, D. (2009). The relationship between sample sizes and effect sizes in systematic reviews in education. *Educational Evaluation and Policy Analysis*, *31*(4), 500-506. DOI: 10.3102/0162373709352369

Soper, D. (2011). Statistics calculators. Retrieved from

http://www.danielsoper.com/statcalc3/default.aspx

StatSoft, Inc. (2011). *Electronic Statistics Textbook*. Tulsa, OK: StatSoft.

http://www.statsoft.com/textbook/.

StatTrek.com. (2011). *Electronic Statistics Tutoring*. http://stattrek.com/

Szuberla, A. L. (2005). *Emotional intelligence and school success*. (Doctoral

dissertation). (UMI No. 3195272). Retrieved from

http://ezp.waldenulibrary.org/login?url=http://search.proquest.com.ezp.waldenuli

brary.org/docview/305369079?accountid=14872

Triola, M. F. (2005). *Elementary Statistics* (9th ed.). Boston: Pearson Education, Inc.

Trochim, W. (2000). *The research methods knowledge base*. (2nd ed.). Cincinnati, OH:

Atomicdog publishing. Retrieved January 10, 2006 from Atomicdog.com

U.S. Department of Education, National Commission of Excellence in Education. (1983,

April) *A nation at risk: The imperative for educational reform*.

http://www.ed.gov/pubs/NatAtRisk/risk.html

Vinella, M. W. (2007). *The relationship between student achievement and the scores on

the Learning Organization Survey*. (Doctoral dissertation). (UMI No. 3252462).

Retrieved from

http://ezp.waldenulibrary.org/login?url=http://search.proquest.com.ezp.waldenuli

brary.org/docview/304766757?accountid=14872

Walpole, P., Issac, C. L., & Reynders, H. J. (2008). A comparison of emotional and

cognitive intelligences in people with and without temporal lobe epilepsy.

Epilepsy, *49*(8), 1470-1474. DOI: 10.1111/j.1528-1167.2008.01655.x

Wiggons, G., & McTighe, J. (2005). *Understanding by Design*. (2nd ed.). Alexandria,

    VA: Association for Supervision and Curriculum Development.

Wilson Van Voorhis, C. R., & Morgan, B. L. (2007). Understanding Power and Rules of

    Thumb for Determining Sample Sizes. *Tutorials in Quantitative Methods for*

    Psychology, 3(2), 43-50. Retrieved from http://www.tqmp.org/Content/vol03-

    2/p043/p043.pdf

Yost, D. S. (2006). Reflection and self-efficacy: Enhancing the retention of qualified

    teachers from a teacher education perspective. *Teacher Education Quarterly*,

    33(4), 59-76.

Zeidner, M., Roberts, R., & Mathews, G. (2002). Can emotional intelligence be

    schooled? A critical review. *Educational Psychologist*, *37*(4), 215-231.

Zhang, Y., & Yue, Y. (2007). Causes for burnout among secondary and elementary

    school teachers and preventative strategies. *Chinese Education &Society*, *40*(5),

    78-85.

Zhao, Y. (2007). Educating in the flat world. *EDge: The latest information for the*

    education practitioner, *2*(4), 2-19.

Appendix A: Letter of Cooperation

Superintendent of Schools

█████████████████████

██████████████████

13 October 2009

Dear Mr. Jones,

Based on my review of your research proposal, I give permission for you to conduct the study entitled Emotional Intelligence and Academic Achievement: A Correlational Study within ████████████████. As part of this study, I authorize you to recruit student volunteers who will complete two on line surveys. The first is a survey that includes the students School identification, student identification number, grade point average, gender, the number of years that the student has completed English class, and High School Proficiency Assessment score from the English portion. The students will complete a second online survey that assesses their Emotional Intelligence. The test, called the MSCEIT and designed by the test's authors, measures a high school student's emotions and emotional skill. Individuals' participation will be voluntary and at their own discretion. We reserve the right to withdraw from the study at any time if our circumstances change.

I confirm that I am authorized to approve research in this setting.

I understand that the data collected will remain entirely confidential and may not be provided to anyone outside of the research team without permission from the Walden University IRB.

Sincerely,

Dr. Richard Brodow, Superintendent of Schools

████████████████

Appendix B: Parent Consent

PARENT CONSENT FORM

Hello, my name is David Jones. I am conducting a research project to learn about human emotions and literacy. I would like to invite your child to take part in the study.

I chose your child because he or she has completed the New Jersey High School Proficiency Assessment (HSPA). This form is part of a process called "informed consent." You should read this entire form because I want you to learn about the project before you decide if you want your child to be in it.

Who am I?

I am a PhD student. I am completing this research project toward my PhD degree at Walden University.

Purpose of the study:

The purpose is to explore a possible relationship. I would like to know if emotions relate to HSPA Language arts literacy scores. If there is a relationship, then I would like to investigate more. I will determine if I can predict a person's HSPA score based on their emotions test. The results may give educators information that could help students. Students could get stronger in writing and speaking. In all, students may become better communicators if they learn to improve their emotions.

Voluntary nature:

You should understand that your decision to participate in this study is completely on a volunteer basis.

Procedures:

If you agree to allow your child to be in this study:

- You must sign this form or provide an electronic signature to provide permission for your child. (directions are listed below)
- Your child must also give their permission by signing an assent form. The assent form is separate, yet similar to this form.
  - Once your child agrees to participate, they will be given an access link. The access link will allow them to log onto a website, Multi Health Systems (MHS). Here they will be prompted to complete a multiple choice test. It will test your child's emotions and emotional skills. Experts call the score EIQ. EIQ is simply your child's ability to understand emotions. It is also their ability to understand other people's emotions.
  - MHS publishes the test. MHS named the test the MSCEIT. It will take your child about 30-45 minutes to complete. The words in the test are very basic. Most fourth graders understand the words in the test.
  - Your child will be able to take the test from any computer with internet access. For example, your child may take the test at home, library, or school. If your child does choose to take the test at school, then he or she must use a study hall or alternate non-instructional period.
  - The website is secure and confidential.

- I will use your child's name and school identification number (ID) to collect data. I will get the data from the high school's data bank. I will enter their data into a spreadsheet. The information that I will collect includes their gender and Grade Point Average. I will also record their High School Proficiency Assessment (HSPA). I will specifically record the score from the English Language Arts Literacy portion.
- After I receive your child's EIQ then I will use statistics to compare their school information with their EIQ. This will help me to determine if there is a relationship.

Voluntary nature of the study:
Your child's participation in this study is voluntary. This means that everyone will respect your decision of whether or not you want to allow your child to be in the study. No one in the school community or at any university will treat you differently if you decide not to allow your child in the study. If you decide to give permission to join the study now, you can still change your mind during the study. If your child feels stressed during the study he/she may stop at any time. Your child may skip any questions that they feel are too personal; however, incomplete answers on the MSCEIT will be removed from the study.

Risks and benefits of being in the study:
The risks associated with this study are very minimal. The MSCEIT test was designed for people ages 17-adult. The questions are not graphic. The questions are not personal. If your child feels threatened or uncomfortable for any reason, he or she can stop taking the test. It is totally their decision.

The findings of the study may provide rationale to improve teaching and learning. It may also provide reason to include emotional training in high school. It could better prepare students for life after high school. I am conducting this study at Millburn High School and Verona High School. I have randomly selected 350 seniors who have completed the HSPA.

Compensation:
In return for taking part in this study, I will arrange with the school administrator an appropriate time for a pizza delivery to the school for all study participants. This is totally voluntary on your child's part, however the pizza delivery is my way of thanking each student who participates. Additionally, I will present the findings to your school Board, your child, and to you. You and your child may better understand the steps involved to conduct educational research.

Confidentiality:
I will secure everything that your child completes online. I will keep your child's data private. That means that no one will know his or her name or what answers he/she gave. The only time I have to tell your child's name is if I learn about something that could hurt him/her or someone else. I will not use your child's information for any purposes outside of this research project.

Contacts and questions:

If you have questions, you may contact the researcher at ██████████████ if you want to talk privately about your child's rights as a participant, you can call Dr. Leilani Endicott. She is the Walden University representative who can discuss this with you. ██ ████████████████████████████. Walden University's approval number for this study is **06-16-11-0031348**and it expires on **June 1, 2012.**
You may copy of this form to keep for your records.

Statement of consent:
I have read the information above. I feel that I understand the study well enough to make a decision about my child's involvement. By completing the information in the spaces below and returning it to the school, I agree to the terms described above. I can also type the information requested in spaces below and return the saved document as an attachment to   as a valid permissive statement.

Printed Name of Child and Millburn High School issued student Identification Number	
Printed Name of Parent or Guardian	
Date of consent	
Parent's Written or Electronic* Signature (email)	
Researcher's Written or Electronic* Signature	

Electronic signatures are regulated by the Uniform Electronic Transactions Act. Legally, an "electronic signature" can be the person's typed name, their email address, or any other identifying marker. An electronic signature is just as valid as a written signature as long as both parties have agreed to conduct the transaction electronically.

Appendix C: Student Assent

ASSENT FORM FOR ALL PARTICIPANTS
1st Reminder

Hello, my name is David Jones. I am conducting a research project to learn about human emotions and literacy. I am inviting you to join my project because you have completed the New Jersey High School Proficiency Assessment (HSPA).

You should read this entire form because I want you to learn about the project before you decide if you want to be in it.

What is the purpose of this study?
The purpose is to uncover a relationship. I would like to know if your emotions relate to your HSPA Language Arts Literacy score. If there is a relationship, then I would like to investigate more. I will determine if I can predict a person's HSPA score based on their emotions test.The results may give educators information that could help students. Students could get stronger in writing and speaking. In all, students may become better communicators if they learn to improve their emotion.

Who am I?
I am a PhD student. I am completing this research project toward my PhD degree at Walden University.

Voluntary nature:
You should understand that your decision to participate in this study is completely on a volunteer basis.

About The Project:
If you agree to volunteer in this project:
- You will be one of 350 high school students invited to participate in this study.
- I will give you a set of simple directions so you can complete an online test. You may complete the online test at any computer with internet access. For example, you may complete the test at home, at the library, or during school. If you choose to complete the test at school, then you must do so during study hall or another non-instructional period.
- When you log on, you will identify yourself using your name and school identification number (ID). The test is a multiple choice test. The title of the test is the MSCEIT. It will test your emotions and emotional skills. Experts call the score EIQ. EIQ is simply your ability to understand your emotions. It is also your ability to understand other people's emotions. Your emotions may help you to make decisions and solve problems.

- I will use the school's data base to collect information about you. I will record your student GPA and gender. Lastly, I will record your High School Proficiency Assessment (HSPA) score on the English Language Arts Literacy portion.
- After I collect your EIQ score, then I will merge it with your school information. I will keep your scores completely private. Once I enter all data into a secure file then I will decode the information by deleting your name and identification number.

What You Can Expect:
- I will use statistics on the data that I collect from you and your peers. Statistics will help me to determine if there is a relationship between your EIQ and your HSPA score.
- After you complete the online Emotions Test, you have completed your participation in the study.
- The amount of time it takes to complete the test averages between 30-45 minutes.

It Is Your Choice:
You do not have to be in this project if you do not want to. If you choose not to participate, no one will hold it against you in any way. In fact, I will erase your name and ID from the data as soon as I organize the information. If you decide now that you want to join the project, you can still change your mind later. I will discard an incomplete test.

Being in this project might spark your interest in science projects. Also, it may give you a chance to experience a different sort of test about emotions. This test will ask you to think about emotions and give your perspective. The words and pictures are not graphic and you are not likely to feel discomfort. If you do become uncomfortable, then you can stop taking the test at any time.

Risks and benefits of being in the study:
The risks associated with this study are very minimal. The MSCEIT test was designed for people ages 17-adult. The questions are not graphic. The questions are not personal. If you feel threatened or uncomfortable for any reason, you can stop taking the test. It is totally your decision.

The findings of the study may provide rationale to improve teaching and learning. It may also provide reason to include emotional training in high school. It could better prepare students for life after high school. I am conducting this study at Millburn High School and Verona High School. I have randomly selected 350 seniors who have completed the HSPA.

Results:
The results of this project might help educators. The results may show teachers that students' emotions are important. Teachers may pay more attention to students'

emotions. Also, if the results support the ideas then students could improve their verbal communication.

Compensation:
In return for taking part in this study, I will arrange with the school administrator an appropriate time for a pizza delivery to the school for all study participants. This is totally voluntary on your part, however the pizza delivery is my way of thanking each participant. Additionally, I will present the findings to your school Board and to you. You may better understand the steps involved to conduct educational research.

Privacy:
I will secure everything that you complete online. I will keep your data private. That means that no one will know your name or what answers you gave. The only time I have to tell your name is if I learn about something that could hurt you or someone else.
Ask Questions:
You can ask me any questions regarding this study now. If you think of a question later then you or your parents can call me. My phone number is ████████████. If you or your parents would like to ask my university a question then you can call Dr. Leilani Endicott. She is the Walden University person who can discuss this with you. Her phone number is █████████████████████.

You may request a copy of this form.

Please complete the information below and sign your name if you want to join this project.

Name of Student

_____

Student Signature

_____

Date

_____

Researcher Signature

_____

Appendix D: B-Instrument Qualification Letter

Dear David,

Thank you for clarifying the details of your course. This course should be adequate to meet the needs for research with the tool. Our requirements are a master's level course in tests and measurements, your course description explains that you have completed a Ph.D. level course that includes statistics and surveying which is adequate for our purposes.

Although it is essential for MHS to ensure that tests are sold only to individuals who meet approved training requirements, it is not the responsibility of MHS also to ensure that tests are used properly. That responsibility remains with the test purchaser even in cases where the purchaser delegates the administration and/or interpretation of a test to someone else.

You have been approved for a Professional Research Discount on the **MSCEIT** for your study entitled 'Emotional intelligence and academic achievement: A correlational study'.This discount grants you 30% off of related product orders over $50 (before shipping) as well as accessto scored datasets for a fee of $5.50 per participant using online administration and scoring. Please callclientservices at ▮▮▮▮▮▮▮▮ using the following customer number to place your order: **173426**. Keepthis number on file as you will need it to place future orders with us.Your discount expires one year from today. If you require a discount beyond the expiry date you will haveto re-apply at that point.

It is mandatory that you are in possession of the Users/Technical Manual while making use of this assessment. Please ensure that you order a copy if you do not already have one.

Your research is important to us, as agreed upon in your application please remember to send a report of your results to: following the completion of your study.

Sincerely,

Tyrone Williams

Appendix E: Data Use Agreement

DATA USE AGREEMENT

This Data Use Agreement, effective as of 10 March 2010, is entered into by and between David Jones and ███████████████. The purpose of this Agreement is to provide the Data Recipient with access to a Limited Data Set ("LDS") for use in research in accord with the HIPAA Regulations.

1. Definitions. Unless otherwise specified in this Agreement, all capitalized terms used in this Agreement not otherwise defined have the meaning established for purposes of the "HIPAA Regulations" codified at Title 45 parts 160 through 164 of the United States Code of Federal Regulations, as amended from time to time.

2. Preparation of the LDS. Millburn High School shall give David Jones access to a LDS and in accord with HIPAA Regulations.

3. Data Fields in the LDS.No direct identifiers such as names may be included in the Limited Data Set (LDS). In preparing the LDS, Millburn High School shall assist Mr. Jones with the following data fields: a) School issued identification numbers (IDs), gender, grade point average (GPA), years of completed English classes, and their High School Proficiency Assessment score on the English Language Arts Literacy portion

4. Responsibilities of Data Recipient. Data Recipient agrees to:

    a.   Use or disclose the LDS only as permitted by this Agreement or as required by law;

    b.   Use appropriate safeguards to prevent use or disclosure of the LDS other than as permitted by this Agreement or required by law;

    c.   Report to Data Provider any use or disclosure of the LDS of which it becomes aware that is not permitted by this Agreement or required by law;

    d.   Require any of its subcontractors or agents that receive or have access to the LDS to agree to the same restrictions and conditions on the use and/or disclosure of the LDS that apply to Data Recipient under this Agreement; and

    e.   Not use the information in the LDS to identify or contact the individuals who are data subjects.

5. Permitted Uses and Disclosures of the LDS. Data Recipient may use and/or disclose the LDS for reporting of data analysis. The published analysis will include only decoded data that protects the privacy of the participants. The LDS will be stored in an encrypted computer and an encrypted USB drive as a back up file. It will be destroyed after five years.

6. Term and Termination.

   a. Term. The term of this Agreement shall commence as of the Effective Date and shall continue for so long as Data Recipient retains the LDS, unless sooner terminated as set forth in this Agreement.

   b. Termination by Data Recipient. Data Recipient may terminate this agreement at any time by notifying the Data Provider and destroying the LDS.

   c. Termination by Data Provider. Data Provider may terminate this agreement at any time by providing thirty (30) days prior written notice to Data Recipient.

   d. For Breach. Data Provider shall provide written notice to Data Recipient within ten (10) days of any determination that Data Recipient has breached a material term of this Agreement. Data Provider shall afford Data Recipient an opportunity to cure said alleged material breach upon mutually agreeable terms. Failure to agree on mutually agreeable terms for cure within thirty (30) days shall be grounds for the immediate termination of this Agreement by Data Provider.

   e. Effect of Termination. Sections 1, 4, 5, 6(e) and 7 of this Agreement shall survive any termination of this Agreement under subsections c or d.

7. Miscellaneous.

   a. Change in Law. The parties agree to negotiate in good faith to amend this Agreement to comport with changes in federal law that materially alter either or both parties' obligations under this Agreement. Provided however, that if the parties are unable to agree to mutually acceptable amendment(s) by the compliance date of the change in applicable law or regulations, either Party may terminate this Agreement as provided in section 6.

   b. Construction of Terms. The terms of this Agreement shall be construed to give effect to applicable federal interpretative guidance regarding the HIPAA Regulations.

c. <u>No Third Party Beneficiaries.</u> Nothing in this Agreement shall confer upon any person other than the parties and their respective successors or assigns, any rights, remedies, obligations, or liabilities whatsoever.

d. <u>Counterparts.</u> This Agreement may be executed in one or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

e. <u>Headings.</u> The headings and other captions in this Agreement are for convenience and reference only and shall not be used in interpreting, construing or enforcing any of the provisions of this Agreement.

IN WITNESS WHEREOF, each of the undersigned has caused this Agreement to be duly executed in its name and on its behalf.

I recognize that by electronically entering the information requested in the spaces below and returning the saved document as an attachment to this is a validly signed document.

DATA PROVIDER   **DATA RECIPIENT**

Signature or Email: _____   Signature or Email:

Print Name: _____   Print Name: <u>David Jones</u>

Print Title: _____   Print Title: <u>Researcher</u>

The Uniform Electronic Transactions Act regulates electronic signatures. Legally, an "electronic signature" can be the person's typed name, their email address, or any other identifying marker. An electronic signature is just as valid as a written signature as long as both parties have agreed to conduct the transaction electronically.

Curriculum Vitae

<u>David P. Jones</u>

███████████

Education	Trenton State College (TCNJ)
	Trenton, New Jersey
	12/1992 Bachelor of Science
	Marygrove College
	Detroit, Michigan
	05/2004 Master in the Art of Teaching
	Walden University
	Minneapolis, Minnesota
	03/2005-Present Ph.D. School of Education
Experience	Livingston High School (Blue Ribbon School District)
	Livingston, New Jersey
	9/96-Present
	Health, Physical Education and Adapted Physical Education 9-12
	Health Education: Driver Education and 9-12th Health Education with an extensive portfolio for Senior Health Studies. Lessons with cross-discipline themes.
	Physical Education: Specialized in leisure activities, life time fitness and wellness, and Adventure Education including climbing.
	Rutherford High School
	Rutherford, New Jersey
	9/94-9/96 Health & Physical Education 9-12
	Camp Riverbend
	Warren, New Jersey
	5/94-8/95 Head Counselor - Traveling Group
Certification & Training	New Jersey State Emergency Medical Technician
	American Red Cross Professional Rescuer
	American Red Cross Community First Aid and Safety
	American Red Cross Instructor Trained
	American Red Cross Blood Pressure

American Red Cross Life Guard
Project Adventure Trained
Cradle Rock Trained
Colorado Outward Bound-Alpine Mountaineering: Graduate 7/96

Associations   1994-Present NJEA
1994-Present NJAHPERD-Lifetime member
          9/96 -2000   Essex County Representative
          9/94 -6/96   Bergen County Representative

Professional   2/1999   NJAHPERD Presenter- Our Teens Behind The Wheel
Consulting   2/2000   NJAHPERD Presenter- Interactive Health Education Lessons
5/2003   New Jersey State Representative for the National Health Education Assessment Project held in Charleston, South Carolina and sponsored by the Council of Chief State School Officers, State Collaborative on Assessment and Student Standards, and New Jersey Department Of Education.

3/2004   NJAHPERD Presenter- Assessment and Technology in Fitness

Coaching   Livingston Middle School
2000   Head Coach - Wrestling

Livingston High School
1996-1999   Assistant Coach - Varsity Football
                     Special Teams, Quarterbacks and D-Line
1996-1999   Assistant Coach - Varsity Wrestling
1997-2013   Behind the Wheel Driving Instructor
2002-2013   Cooperating Teacher
1996-2013   Intramural Official

Rutherford High School
1994-1995   Assistant Coach - Freshman Football
1995-1996   Assistant Coach - Varsity Football
                     Special Teams and Receivers
1994-1996   Assistant Coach - Wrestling