

The Relationship Between Student Social and Emotional Learning and Academic Achievement
at a Selected High School in Northeast Tennessee

By

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Abstract

The purpose of this quantitative study was to determine the relationship between self-reported social and emotional health and test scores at a selected high school in Northeast Tennessee. The sample consisted of 363 participants from the student population during the school year 2022-2023. The participants completed an SEL survey during the Fall 2022 Semester while enrolled in the selected high school. Data were collected using student survey performance framework measures and testing data extracts from the school and district student information systems. Data were analyzed using SPSS to determine the relationship between SEL scores and attendance. This research found students' SEL survey scores to be significantly related to standardized test scores. The results suggest that the higher students self-report their social and emotional health, the more likely it will correspond with high test scores. This research recommends incorporating SEL measurements in addition to academic achievement measures for the purpose of early warning systems and at-risk student indicators. Consideration should be given to using research-based SEL programming and interventions to improve practice. Future research should include targeted SEL skills and academic test score levels measured before and after applying appropriate interventions.

Keywords: social and emotional learning, SEL, social and personal competencies, Whole Child Approach, Collaborative for Social and Emotional Learning

Dedication

To my Heavenly Father, I praise You and thank You for the opportunity to realize this dream. My desire is to seek Your will in all I do for the glory of Christ.

This is dedicated to my amazing husband, Gary. You have been patient, understanding, and supportive throughout this journey. Thank you for encouraging me through challenges, and times when I wanted to give up. I love you very much. I also want to thank my wonderful children, Ryan, Hannah, and Trevor, and my son-in-law, Taylor. You believed in me every step of this process. You were patient with me, and I could not have done this without your support. I love all of you dearly.

I want to thank my mother, Linda, and my sister, Tammie, for being the strongest, most beautiful ladies in my life. Your unwavering support and love continue to inspire me each day. I also dedicate my work to the memories of my grandmothers, who showed me the importance of being kind, working hard, and being courageous. To my nephews, in-laws, aunts, uncles, and church family, thank you for your support and encouragement.

Finally, I dedicate this to the memory of my dad, Lynn. I know he would have been so proud to see me accomplish my dreams. His life inspired me to “shoot for the moon.” Dad, I did it!

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Chapter 1

The roles and responsibilities of school administrators and teachers have evolved in recent years. Educators are asked to provide support beyond academic content and curriculum frameworks. More recently, because of the COVID-19 Pandemic, the mental health and behavioral support needs of school-aged youth have reached a crisis (American Psychology Association, 2022; American Academy of Pediatrics, American Academy of Child and Adolescent Psychiatry and Children’s Hospital Association, 2021). Due to the global crisis, new federal, state, and local funding resources have been provided to schools and districts to implement social and emotional learning (SEL) programs. Examples of United States federal funding to support SEL programming are covered under the Coronavirus Aid, Relief, and Economic Security (CARES) Act of 2020 (U.S. Department of the Treasury, 2022), the American Rescue Plan (ARP) Act of 2021 (The White House, 2021), and the Coronavirus Response and Relief Supplemental Appropriations (CRRSA) Act of 2021 through the Elementary and Secondary School Emergency Relief (ESSER) Fund (Office of Elementary and Secondary Education, 2022).

The Collaborative for Academic, Social, and Emotional Learning (CASEL) defines social and emotional learning as the process through which children and adults understand and manage emotions, set and achieve positive goals, feel and show empathy for others, establish and maintain positive relationships, and make responsible decisions. More specifically, social and emotional learning consists of five core competency clusters: self-awareness, self-management, social awareness, relationship skills, and responsible decision-making, commonly known as the CASEL 5 competencies (CASEL, 2022). These five competencies are thought to reduce behavior problems and psychological distress, facilitate students’ academic performance,

positive social behaviors, and social relationships during the school years and prepare school-aged youth to succeed in college, work, family, and society (Jones & Kahn, 2017). Effectively implemented SEL programs can, in the short term, enhance students' confidence in themselves, increase their engagement, improve test scores and grades, and reduce conduct problems. In the long term, effective SEL programs can prepare students for success in college and post-secondary career opportunities, increase positive relationships and health and promote engaged citizenship (Greenberg et al., 2017).

Systematic SEL implementation emphasizes a universal approach where all students are engaged in a practical, coordinated learning process that integrates SEL with other academic subjects (Durlak et al., 2022). Universal approaches also reduce the likelihood of stigma because they do not single out students, and successful programs can be cost-effective from a public health perspective (Greenberg et al., 2017). School-based SEL programs have evolved and developed over the last two decades to include the promotion of the five SEL competencies, equity, classroom culture, climate improvement, and other frameworks for promoting personal and social skills. Educational practice and policy support interventions that develop social and emotional competencies. Thousands of schools in the United States and abroad have created explicit learning standards related to SEL as an integral part of all students' education (Dusenbury, 2019). Many advocates have recently argued for whole-child education and greater attention to holistic schooling to support social and emotional learning (Darling-Hammond et al., 2018). In 2019, the Tennessee Department of Education launched the *Best for All* Strategic Plan that addresses the Whole Child. The Whole Child Priority provisions support Tennessee public schools to serve all students' academic and non-academic needs, including developing social and personal skills (Tennessee Department of Education, 2017).

School-based SEL intervention programs implemented with fidelity have been associated with practical increases in students' academic performances that surpass many exclusively educational interventions (Durlak, 2022). Research from a recent meta-analysis (Durlak et al., 2011) and follow-up (Taylor et al., 2017) found that students' academic achievement performance increased by 11 percentile points compared to students who did not participate in SEL programs. Additionally, the value-added benefits included 27% would improve their academic performance at the end of the program, 24% would improve social behaviors, and 22% would have fewer conduct problems.

Although the promise of universal SEL programs enhancing student academic outcomes is widely reported, there has been limited research regarding the impact of such programs on students' standardized test scores (Hart et al., 2020). In a widely cited review of 200 SEL studies, Pennsylvania State University researchers led by Hart (2020) noted that even though the impact of SEL programs on academic achievement was mixed, the value of SEL is not only in whether state test scores increase. Research on SEL programs indicates that the indicators of student success are not only specific SEL skills and test scores but peer relationships, attendance, and degree accomplishments.

Developing comprehensive, evidence-based social and emotional learning strategies to enhance student learning with comprehensive academic supports and interventions is a challenge to all schools in light of the evidence of student learning loss, a decline in college readiness, and deficiency of academic growth due to the COVID-19 pandemic. The 2022 Nation's Report Card from the National Center of Educational Progress (NAEP) indicated that the percentage of 4th and 8th-grade public school students meeting grade level expectations in Math and Reading declined- the most significant average score decline in Reading since 1990, and the first-ever

score decline in Math (NAEP, 2022). In addition to NAEP results, the American College Testing (ACT) Service reported that the national average ACT Composite score for the high school class of 2022 was 19.8, the lowest average in more than three decades (ACT, 2022). This is also the fifth consecutive year of average score declines, a trend that began pre-pandemic. Data also indicated that the proportion of seniors meeting the number of ACT College Readiness Benchmarks for the probability of success in first-year college courses declined significantly.

The Tennessee Department of Education aligned its *Best for All* Strategic Plan with learning loss initiatives sponsored by the Tennessee Learning Loss Remediation and Student Acceleration Act and the Tennessee Literacy Success Act, as well as ESSER and federal COVID-19 relief funds to implement interventions and improve learning opportunities to benefit K-12 education in Tennessee (TDOE, 2022). As a result, 2021-2022 state-level Tennessee Comprehensive Assessment Program (TCAP) test results showed improvements in English Language Arts scores at a level similar to pre-pandemic years and overall improvement in Math scores. However, even though Tennessee leads the nation in ACT access, Tennessee's ACT composite average for the Class of 2022 remains below the national average at 19.1. The percentage of students who met the ACT College Readiness Benchmarks also decreased from previous years (ACT, 2022). Furthermore, although Tennessee students are experiencing gains in state-level post-pandemic assessments, NAEP data results mirror the nationwide decline.

While academic achievement results are reported in quantitative measures, social and emotional learning is challenging to measure without students' self-reporting ability. Most research on SEL utilizes self-reported student measures to capture how they feel about social and emotional factors about self and others. A study by the CORE-PACE Research Partnership (2017) concluded that survey measures capture fundamental differences across students each

year they are collected and real changes in students' well-being. The researchers recommend investing in the survey administration annually to understand and track students' whole child development. Across the country, interest is growing in using measures of students' SEL in school performance measurement systems. Still, there has been limited research on measured SEL's impact on students' standardized test scores.

Statement of the Problem

While research indicates that social and emotional competencies and universal approaches to SEL programs can significantly affect positive outcomes, finding a way to reach at-risk students struggling academically through SEL interventions remains a hurdle that schools nationwide face. Developing and implementing an integrative SEL program that develops emotional intelligence for long-term academic success and gives at-risk students the need to overcome obstacles for long-term academic achievement is challenging for all schools in Tennessee. Currently, little research is dedicated to determining the relationship between students' self-reported SEL factors and academic achievement.

Most actions taken by schools to address academic achievement learning loss are reactive and designed to address students or student groups who have already demonstrated poor performance on educational benchmarks. A more proactive approach, such as Tennessee's whole child approach, can assist educators in ensuring that each student has a healthy, safe, supportive, equitable, and culturally responsive learning environment, thus reducing factors that impact at-risk students (Dusenbury et al., 2019). Understanding students' self-reported social and emotional learning as a predictor of academic achievement levels and achievement gains could inform schools to improve programming and priorities. Therefore, the problem of this study was to examine the relationship between student social and emotional learning and

academic achievement. The results of this study could potentially assist schools and school districts in identifying at-risk students and applying appropriate interventions before high-stakes academic achievement assessments.

The Purpose of the Study

This study investigated the relationship between social and emotional learning and academic performance. Understanding the nature of this relationship will assist high schools as a tool to inform policy and practice for implementing interventions to reduce academic achievement gaps.

Research Questions

1. Is there a relationship between social and emotional learning (SEL) Core Competencies scores (Self-Awareness, Self-Management, Social Awareness, Relationship Skills, and Responsible Decision-Making) and ACT Math Scores?
2. Is there a relationship between social and emotional learning (SEL) Core Competencies scores (Self-Awareness, Self-Management, Social Awareness, Relationship Skills, and Responsible Decision-Making) and ACT English Scores?
3. Is there a relationship between social and emotional learning (SEL) Core Competencies scores (Self-Awareness, Self-Management, Social Awareness, Relationship Skills, and Responsible Decision-Making) and State End-of-Course (EOC) Math Scores?
4. Is there a relationship between social and emotional learning (SEL) Core Competencies scores (Self-Awareness, Self-Management, Social Awareness, Relationship Skills, and Responsible Decision-Making) and State End-of-Course (EOC) English Scores?

Significance of the Study

Policymakers, educators, and the broader public continuously monitor schools and implement accountability processes to improve student academic outcomes. Learning social and emotional competencies skills are connected to improvements in academic achievement and post-secondary and life outcomes (Durlak et al., 2011; Tennessee Department of Education, 2017). Despite a robust research base supporting the importance of SEL competencies and the value of student self-reported measurement of SEL competencies (West et al., 2015), there is still much to learn about how these measures can be used to improve and understand academic performance.

This study will provide more information for schools and districts for effective decision-making in applying interventions for at-risk students before administering high-stakes performance tests. If significance is found, the results will assist schools in their design, consistency, and understanding of SEL practices to better identify and serve students at risk of poor academic outcomes. For schools currently utilizing SEL instruction, the results could assist and inform school leaders in improving SEL competencies, student experiences, interventions, and academic and life outcomes.

Definition of Terms

American College Testing (ACT). The American College Testing (ACT) test is a curriculum-based standardized examination used for college admission in the United States. It is administered by a nonprofit organization of the same name and covers four academic skills areas: English, Math, Reading, and Science.

Center For Research and Education Outcomes (CREDO). An organization at Stanford University working to produce research and evaluation that drives education policy decisions toward improved education outcomes for all students (CREDO, 2022).

College and Career Readiness Benchmarks. The ACT College Readiness Benchmarks are the minimum ACT test scores required for students to have a reasonable chance of success in first-year credit-bearing college courses at the typical college (ACT, 2017).

End of Course (EOC) Test. The Tennessee Comprehensive Assessment Program End of Course tests administered in grades 9-12 to help measure how much a student grows in the specific content areas of Math, English, Science, and Social Studies.

Manpower Demonstration Research Corporation (MDRC). MDRC is a nonprofit, nonpartisan education and social policy research organization based in New York City and Oakland, CA.

Relationship Skills. The ability to establish and maintain healthy and supportive relationships and to effectively navigate settings with diverse individuals and groups.

Responsible Decision-Making. The ability to make caring and constructive choices about personal behavior and social interactions across diverse situations.

Self-Awareness. The ability to understand one's own emotions, thoughts, and values and how they influence behavior across contexts.

Social Awareness. The ability to understand the perspectives of and empathize with others, including those from diverse backgrounds, cultures, and contexts.

Self-Management. The ability to manage one's emotions, thoughts, and behaviors effectively in different situations and to achieve goals and aspirations.

Social and Emotional Learning (SEL). The process through which children and adults understand and manage emotions, set and achieve positive goals, feel and show empathy for others, establish and maintain positive relationships, and make responsible decisions (Collaborative for Academic, Social, and Emotional Learning (CASEL), 2019).

Social and Personal Competencies (SPC). The skills identified by the Tennessee Department of Education (2017) as “soft skills” necessary for students to succeed in postsecondary and career. These skills included self-awareness, self-management, social awareness, relationship skills, and responsible decision-making.

Tennessee Comprehensive Assessment Program (TCAP). The Tennessee Comprehensive Assessment Program (TCAP) was implemented in 1988 and included assessments in Math, English, Social Studies, and Science, as well as alternative assessments for students with special needs.

Whole Child Approach. The Whole-Child Approach to teaching supports and implements all areas of children's development and learning, including social and emotional skills, cognitive skills, and fundamental academic skills.

Organization of the Study

Chapter 1 presents an introduction to this study, including a statement of the problem, the purpose of the study, research questions, the significance of the study, a definition of terms, and the organization of the study. Chapter 2 reviews relevant literature and research concerning social and emotional learning, academic achievement measures for high school students, and interventions for academically at-risk students. The methodology and the procedures used to gather data are presented in Chapter 3. The results of analyses and findings to emerge from the study are presented in Chapter 4. Chapter 5 contains a summary, conclusions, a discussion, and recommendations for further research.

Chapter 2

Review of the Literature

There are vital academic, social, and emotional aspects of students' learning, and there is common agreement among educators, policymakers, and the general public that schools have a crucial role in fostering students' cognitive development as well as students' social and emotional development (Corcoran et al., 2017). Research in social and emotional learning interventions has indicated that investing in social and emotional competencies predicts academic outcomes (Durlak et al., 2011) and long-term economic success (Belfield et al., 2015), providing a better academic foundation for career and life opportunities.

Historically students' educational progress has been measured primarily on academic proficiency outcomes, as outlined in the No Child Left Behind (NCLB) policy. In December 2015, the Every Student Succeeds Act (ESSA) was signed into law, rescinding many provisions of NCLB and amending and reauthorizing the 50-year-old Elementary and Secondary Education Act (ESEA) of 1965. ESSA includes provisions for accountability to prioritize whole-child education. The provisions include accountability systems for advancing equity and access, preparing students for college and career readiness, annual academic achievement measures, and systems of interventions and improvements for low-performing schools and underrepresented students (United States Department of Education, 2022). Although ESSA does not explicitly utilize the phrase *social and emotional learning*, it does enable states, districts, and schools to implement interventions that support SEL instruction through three funding streams that provide and incorporate SEL initiatives for low-income students and enhance school improvements.

According to the Aspen Institute National Commission's Science of Learning and Development Project (2019), there is a growing understanding that an integrated approach to

social, emotional, and academic development provides the best path toward ensuring all students can graduate from high school prepared for post-secondary and adult success. This study's findings suggest a connection between social and emotional outcomes and academic achievement as traditionally measured by school course grades and standardized tests. Recently, studies have begun looking at the relationship between social and emotional development and academic outcomes, such as the large-scale analyses of the California Office to Reform Education (CORE) data (2015). Much of the CORE data analysis has been conducted by the Policy Analysis for California Education (PACE) center and has found evidence of a relationship between strong SEL skills with improved attendance, better behavior, and higher test scores (West et al., 2016).

Many school systems use self-reported surveys to track students' social and emotional development to inform policy, practice, and decision-making. The benefit of student social and emotional learning surveys is to capture students' non-tested skills can predict a range of academic and life outcomes, determining success in school and post-secondary education and providing targeted interventions for improving student success (West et al., 2020).

To become familiar with the relevant background needed for this study, social and emotional learning competencies, frameworks, and SEL programming were investigated. It was also essential to research the effects and outcomes of social and emotional learning support programs, interventions, and assessments to measure social and emotional learning for data-informed decision-making practices and students' SEL skills.

Social and Emotional Learning

The social and emotional learning approach promotes a variety of competencies that researchers have shown to be important for student success in school and life. Although these

competencies may be described as other labels, such as *character*, or *noncognitive skills*, research by The Wallace Foundation suggests the phrase *social and emotional learning* is more likely to be familiar to and accepted by practitioners, policymakers, and family members (Loeb, Tipton, & Wagner, 2016). Social and emotional learning (SEL) is broadly defined as the “process through which all young people and adults acquire and apply the knowledge, skills, and attitudes to develop healthy identities, manage emotions and achieve personal and collective goals, feel and show empathy for others, establish and maintain supportive relationships, and make responsible and caring decisions” (CASEL, 2020; Niemi, 2020).

Developing students’ *social and emotional competence* (SEC) is another component of SEL, which integrates and coordinates students’ cognitive, affective, and behavioral capacities to thrive in diverse cultures and contexts to achieve specific tasks and positive developmental outcomes (Mahoney et al., 2021). A National Research Council (2012) report summarized research on SEL competencies that contributed to school, work, and life success and categorized the competencies into three broad areas: cognitive, intrapersonal, and interpersonal. Cognitive competencies include mastery of academic content in core academic subjects and critical thinking, creativity, and argumentation skills. Intrapersonal competencies are attitudes and behaviors that influence students to apply themselves in school and other settings. Interpersonal competencies are the skills to relate to others, such as communication, conflict resolution, and collaboration. There is widespread agreement that an intentional focus on both intrapersonal skills and attitudes and interpersonal skills and attitudes is important (Durlak et al., 2022).

Systemic SEL emphasizes a universal approach to SEL where all students and adults in the classroom and school levels are engaged in a coordinated learning process through partnerships with families and community members, aligning early intervention and treatment

supports for students at risk for or already experiencing social, emotional, and behavioral difficulties (CASEL, 2020; Weissberg et al., 2015; Durlak et al., 2022). Ecological factors such as school leadership, SEL program development and educator training, implementation and sustainability, funding, and collaboration among stakeholders can interact to influence systemic approaches to school-based SEL program outcomes in both the short term and the long term (Mahoney et al., 2021; Durlak et al., 2022). Universal approaches also reduce the likelihood of stigma because they do not single out students. Targeted interventions integrating SEL can support the needs of individuals and small groups of students (Greenberg et al., 2017; Bradshaw et al., 2014; Elias et al., 2015).

Social Emotional Learning Frameworks and Competency Domains

Social and emotional learning competencies or standards derive from SEL frameworks (Dusenbury et al., 2020). SEL frameworks drive action, including designing or aligning efforts to support developing students' social and emotional skills utilizing policy, instructional strategies, and assessments. According to a study by the American Institutes for Research (Berg et al., 2017), the purpose of frameworks to measure SEL competencies are to articulate what students should know and be able to do, support evidence-based practice, use data-informed decisions for progress monitoring, and connect practice to theory and research.

Various frameworks for SEL programming have emerged to enhance students' social and emotional competence through explicit instruction establishing positive classroom and school cultures, climates, and conditions that are safe, caring, cooperative, and participatory (Weissberg et al., 2015). Despite the many SEL frameworks used to articulate "what students should know and be able to do," many state-level education agencies elect to use the SEL framework based on the CASEL 5 framework (Ecklund et al., 2018). The CASEL 5 framework is widely used within

school texts to foster the development of five interrelated sets of cognitive, affective, and behavioral competencies: self-awareness, self-management, social awareness, relationship skills, and responsible decision-making (CASEL, 2022).

The CASEL 5 competencies are designed to be taught at all school levels and across various cultural contexts. They provide a framework to benefit students throughout their lives in academic and civic engagement, health and wellness, and college and career. The competencies focus on abilities vital to social and emotional learning and can be fostered through various methods. A collaborative research brief by CASEL and the Assessment Works Group (Borowski, 2019) identifies, defines, and describes the five competencies to illustrate CASEL's framework as an integrated, systemic social and emotional tool for intervention:

1. Achieving competence in *self-awareness* involves understanding one's own emotions, thoughts, and values and how these can influence your actions. This includes assessing and recognizing one's strengths and limitations and is strongly connected to self-esteem and a sense of purpose. Students with high levels of self-awareness demonstrate capacities to self-regulate, experience self-efficacy, have growth mindsets, and recognize how thoughts, feelings, and actions are interconnected.
2. Achieving competence in *self-management* requires the ability to regulate emotions and behaviors in different situations to achieve goals and aspirations. This includes delaying gratification, managing stress, controlling impulses, resilience, and persevering through challenges to achieve personal and educational goals. Students demonstrating competence in self-management express feelings appropriately, show courage to take the initiative, utilize stress management strategies, and demonstrate personal and collective agency.

3. Achieving competence in *social awareness* requires understanding the perspectives of those with diverse backgrounds, cultures, and contexts and empathizing and feeling compassion. This includes understanding social norms and establishing and maintaining healthy relationships in different settings. Students with demonstrated competence in this domain recognize strengths in others and, regarding equity and diversity, identity, understand, and empathize with diverse social norms, including unjust ones (Borowski, 2019).
4. *Relationship skills* provide children with the tools to establish and maintain healthy and supportive relationships with diverse individuals and groups according to social norms in various settings. Critical factors within this domain include communicating clearly, listening actively, cooperating with others, collaborative problem-solving and constructive negotiation, providing leadership, and seeking help when needed.
5. Finally, *responsible decision-making* requires the knowledge, skills, and attitudes to make caring and constructive choices about personal behavior and social interactions across diverse situations. Competence in responsible decision-making requires considering ethical standards and safety concerns and evaluating the benefits and consequences of various actions for personal, social, and collective well-being. Students who are responsible decision-makers demonstrate curiosity and open-mindedness, exhibit reasoning after analyzing information, anticipate and evaluate the consequences of their actions, and evaluate personal, interpersonal, community, and institutional impacts.

Addressing students' social and emotional competencies in schools can take several forms (Kendziora & Yoder, 2016). In a recent study by CASEL (Dusenbury et al., 2015), four broad approaches for addressing SEL competencies were described:

- Freestanding lessons with the explicit instruction to develop specific SEL competencies
- General teaching practices to support classroom environments through shared expectations, positive relationships, and collaboration
- Integration of SEL skills instruction and practices within the context of an academic curriculum
- Guidance to administration and school leaders for school-wide culture and climate initiatives to facilitate SEL.

Evidence-based social and emotional programs are grounded in research and principles of child and adolescent development and have been scientifically evaluated and shown to produce positive student outcomes (CASEL, 2022). Using evidence-based and high-quality SEL programs to engage students across all grade levels will more likely achieve students' SEL goals. Effective SEL approaches often incorporate four elements represented by the acronym SAFE: *Sequenced-* connected and coordinated set of activities to foster skills development; *Active-* active forms of learning to help students master new skills; *Focused-* a component that emphasizes developing personal and social skills; and *Explicit-* targeting specific social and emotional skills (Durlak et al., 2011; CASEL, 2022).

Systemic Schoolwide SEL Programming

Social and emotional learning that is school-based prioritizes competencies that are connected to positive student outcomes. Positive outcomes and successful efforts are not attainable through fragmenting competencies, supporting or teaching students in isolation, and not adequately supporting teachers in SEL instruction. School-based implementation of SEL frameworks that support a culture of strong competencies and whole-child initiatives are more

practical and successful in strengthening student social and emotional skills (Oberle et al., 2016). Research suggests that explicit instruction for developing social and emotional learning competencies is potentially valuable due to many students enter school without having developed these competencies (Jones & Bouffard, 2012).

Federal and state policies and supports are critical for implementing evidence-based school social and emotional programming (Weissberg et al., 2016). Many states have established learning standards, benchmarks, or competencies to advance the quality of SEL programming to specify what students should know and be able to do due to educational instruction (Dusenbury et al., 2020). SEL goals and benchmarks communicated effectively to students, teachers, and families can beneficially impact the teaching and learning process through high-quality instruction, professional development, and effective student progress monitoring.

An analysis of state education agencies by CASEL's Collaborative States Initiative (SCI) (Dusenbury, 2020) found that eighteen states have guidelines for using SEL standards or competencies. States utilizing frameworks for SEL instruction connect systematic social and emotional learning to other strategic priorities and approaches. Embedding social and emotional learning initiatives with existing priorities reduces burdens to educators and disconnects to school-wide mission vision work. A cohesive, supportive structure where educators support student SEL competencies and skills connects academic integration, whole child development, mental health and trauma support, workforce readiness, positive school climate and culture initiatives, college and career readiness preparation, character education and development, and multitiered systems of support (MTSS) and interventions (Dusenbury, 2020).

The CSI study (2020) found that twelve of the eighteen state frameworks reviewed directly align with the CASEL 5 framework of core competencies. Tennessee's Social and

Personal Competencies (SPC) guide was released in 2017 and is one of the twelve frameworks reviewed in the analysis aligning with the CASEL 5 frameworks. The Tennessee SPC framework is also aligned with other priorities through academic integration, college and career readiness, mental health and trauma supports, interventions, whole child initiatives, school climate, and equity. The SPC framework is also closely aligned with the Tennessee Educator Acceleration Model (TEAM), the teacher evaluation system, demonstrating it is essential not only for students to develop social, academic, and emotional skills but equally for adults in schools (SPC Guide, 2017). Studies have shown that adults' own social and personal competence is just as important as students' social and personal competence and contributes to relationship-building in schools. Teachers in schools where SPC are a priority show reduced teacher stress and burnout and improved teacher well-being (Schonert-Reichl et al., 2017).

The Tennessee SPC Guide links to the state's strategic plan, *Tennessee Succeeds*, under the Bridge to Postsecondary, All Means All, and Educator Support Strategic initiatives to emphasize the need to develop social and personal competencies. The competencies are organized into developmental grade bands from pre-school into adulthood to address the needs of all learners. Tennessee also released a Toolkit (2015) that identifies a working set of ten teaching practices, based on Yoder's *Teaching the Whole Child* (2013), to promote social and emotional standards into academic instruction through a systematic process focusing on social teaching practices and instructional teaching practices. When teachers and students wholly participate in the ten teaching practices, they can develop and apply SEL skills in a more productive and supportive schooling experience (Yoder, 2013).

Effects of SEL Programming

Durlak et al.'s (2011) widely cited meta-analysis of 213 studies involving over 270,000 students confirmed that social and emotional learning produces significant positive effects in six different aspects of adjustment. These outcomes included improved academic performance, SEL skills, social behaviors, self-esteem, and self-regulation. The study also indicated that effective, evidence-based programs were effective regardless of geographical setting or student demographics. Furthermore, SEL interventions were more effective when embedded in daily instruction rather than through outsourced programs.

Universal social and emotional learning school-based programs yield the most positive effects in areas such as emotion recognition, stress management, empathy, and decision-making skills (Durlak et al., 2011). Self-awareness is a skill nurtured in SEL programming vital for improving student academic outcomes. With self-awareness, students develop and set personal goals, assessing individual strengths and weaknesses, and students have a well-grounded sense of optimism and self-efficacy (Rimm-Kaufman et al., 2014). Students who demonstrate self-awareness and confidence about their learning capacities try harder and exhibit persistence when facing challenges or adversity (Aronson, 2002).

Many studies have demonstrated connections between SEL programs and improved academic performance, school attitudes, and behaviors. Effective mastery of social and personal competencies is associated with better school performance and well-being (Guerra & Bradshaw, 2008). Setting high academic goals, maintaining self-discipline, self-motivation, stress management, and organizational skills result in students earning better grades (Duckworth & Seligman, 2005; Elliot & Dweck, 2005). Also, students who utilize responsible decision-making concerning homework and problem-solving skills to overcome obstacles do better academically (Zins & Elias, 2007).

Exhibiting social and emotional learning competency proficiency can predict students' success in postsecondary opportunities. Research indicates that SEL skills are related to greater engagement in college academic and interpersonal environments through class discussions, extracurricular participation, and peer relationships (Murano et al., 2022). Predicted outcomes include persistence through course attendance, completion, and degree attainment (McClenney et al., 2006; Murano et al., 2022). The use of social and emotional learning skills are also predictors of a broad range of postsecondary career and workforce outcomes, such as leadership, teamwork, appropriate workplace conduct, and task performance. These skills are often referred to as soft skills and are rated by many organizations as some of the most desired employee skills (Murano et al., 2022).

The quality of implemented social and emotional learning programs influences student participant outcomes (Weissberg et al., 2015). Students participating in well-implemented school-level SEL programming versus poorly implemented programming demonstrated higher academic performance levels, reduced emotional stress, and reduced behavioral problems (Weissberg et al., 2015; Durlak et al., 2011). Study conclusions indicate that the effectiveness of SEL programming is determined by the degree of implementation.

SEL Programming and Student Academic Achievement

Social and emotional programming promotes the development of students' social and emotional competencies, which increases the likelihood of higher academic performance. However, research indicated the need to know more about the impact of universal SEL programming on students' state test scores and reported academic achievement outcomes (Hart et al., 2020). As per Durlak et al.'s meta-analysis (2011), there was a reported 11-percentile average gain in student academic achievement. Despite this, the researchers cite a limitation of

available studies, with only 16% of reviewed studies reporting academic achievement outcomes and only 15% including follow-up in any outcome category. A meta-analysis of the follow-up effects of SEL programs reported a 13-percentile gain in student academic achievement, despite less than 10% of included studies reporting any academic outcomes (Taylor et al., 2017).

Corcoran et al. (2018) identified 611 SEL evaluations conducted between 1970 and 2016 for a meta-analysis of universal social and emotional programming focused exclusively on academic achievement impacts. Results indicated that different criteria, such as course grades or standardized testing, measured student performance. Favorable impacts on academic performance were discovered in 40 of the studies that satisfied the inclusion criteria.

State test performance has the potential to show the impact of the long-term effects of social and emotional learning on student outcomes. However, even though student test scores are easily obtainable and suitable indicators of students' academic achievement, limited study has examined standardized test performance in correlation to SEL programming (Hart et al., 2020). Most existing studies examine programming efforts to improve social and emotional competencies through curriculum measures; connect broadly defined SEL skills to academic outcomes (Balfanz & Byrnes, 2020). Impact studies have been conducted to measure students' academic skills before SEL program implementation in correlation to observed outcomes. Variance in methodological features of the studies lends to variability in observed effects on student achievement outcomes. For example, some studies utilize Randomized Control Trials (RCT), reporting continuous results at the school level, while others examine student competency scores or do not consider students' baseline skills. (Bavarian et al., 2013; Snyder et al., 2010).

Evaluating students' test scores using accountability systems based on academic growth and proficiency levels is important. According to Hart et al. (2020), "State test performance not only has the potential to shed light on the impact of SEL on distal student outcomes but also represents an area of emphasis for educators across the country." Additionally, the value of social and emotional learning in relation to academic proficiency and achievement is not only in whether state scores increase but also "broad indicators of student success" such as social and personal competencies evidenced through peer relationships, attendance, and degree completion.

Assessment of Social and Emotional Learning

Student skills, such as social and emotional skills, that are not captured by academic achievement tasks predict a range of academic life outcomes (Almlund et al., 2011; Deming, 2017; Heckman et al., 2014). Measuring the growth of SEL skills is valuable when seeking to improve student outcomes, especially when determining how students progress over time. SEL skills growth measures and supports highlight effective teacher impacts and classroom supports that successfully improve students' non-cognitive development (Meyers et al., 2019).

The Every Student Succeeds Act (ESSA) of 2015 requires states to look beyond academic achievement and test scores and to incorporate an additional indicator to define student success. Student success in schools includes post-secondary readiness, school culture and climate, school safety, student and teacher engagement, and equity and priority of access for completion of post-secondary coursework opportunities (Darling-Hammond et al., 2018). At least three funding streams within ESSA can be used to implement and support SEL programming and interventions. A growing number of states have established standards for SEL or incorporated social and emotional competencies into their academic curriculum (Dusenbury et al., 2020). ESSA provides resources to states and districts to access funds to support selecting

SEL programming, instruction, and intervention focusing on students' social and emotional competencies (Grant et al., 2017).

Planning for selecting and implementing social and emotional programming and interventions requires assessing the student and school needs the SEL programs are intended to address, which can be complicated. According to research by the Rand Corporation (2018), a needs assessment is a tool education leaders can use to understand and improve the effectiveness of school programming, specifically social and emotional learning interventions under ESSA funding. A needs assessment is required for funding streams in ESSA and is closely tied to school performance and accountability, drawing from traditional growth measures of academic test scores and attendance data. However, the definition of SEL skills is not one of singularity, and there is minimal consensus on the best way to assess these skills or gather evidence through a needs assessment (Wrabel et al., 2018).

According to research conducted by the Rand Corporation (2018), states and districts use a wide variety of integrated social and emotional learning-related measures as needs assessments of school-based SEL programs. These include administrative data, surveys, school records, and comprehensive accountability observations. School climate measures are also examples of SEL assessment data sources. The Tennessee Department of Education (TDOE) provides Tennessee schools and districts free access to a School Climate Measurement Package that includes comprehensive stakeholder surveys. The TDOE suggests that having accessible school climate data enables school communities to understand the relationship between the learning conditions to which students are exposed and the academic outcomes those students achieve (Tennessee Department of Education, 2018).

Social and emotional learning assessments utilize various methods, predominantly assessing SEL programming and interventions. There is no current, clear path for assessing students' mastery of SEL skills. Clark McKown, an SEL assessment expert and researcher, concluded in a recent brief on SEL assessment research (2019) assessment developers, educators, and mental health professionals have different priorities regarding SEL assessments. These priorities may be cost-effective measures, internal validity measures, psychometrics, or practical measures of outcomes. McKown's research indicated three ways to assess students' social and emotional learning- rating scales, direct assessments, and self-assessments.

Rating scales involve a classroom teacher or adult reading behavior descriptors or statements and rating the frequency students engage in those behaviors. Although created mainly to assess behavioral problems, rating scales have evolved to rate students' strengths or SEL skills reflected in the CASEL model (McKown, 2019). Rating scales help capture a wide range of observed behaviors in a variety of setting too large groups. However, rating scales are subject to teacher bias, and less visible social and emotional competencies, such as social awareness, may be challenging to observe and rate (Merrell, 2013).

Direct assessments are accomplished when students solve challenging social and emotional tasks. Direct SEL assessments often use game-like scenarios on simulated situations to pose challenging interpersonal tasks and track student response. Well-constructed direct assessments yield highly reliable scores. However, the cost of assessments may be high, and processes may be complex with limited availability of technically sound assessments (McKown, 2019).

Finally, many school systems use student self-reported surveys or assessments to effectively track students' social and emotional development (West et al., 2020). Utilizing these

measures can help schools identify targeted support areas for specific student subgroups or entire student groupings. Student social and emotional learning surveys assist educators in tracking the effectiveness of outcomes of SEL interventions, and consistent, consecutive administered SEL surveys may highlight patterns over time of trends in social and emotional development, illustrating how self-reports may be used to set priorities, target interventions, and resources (West et al., 2020). Issues from self-reported surveys or questionnaires stem from students' limited ability to self-awareness or respond in what they infer is a desired response, known as a "social desirability response bias" (McKown, 2019).

Conclusion

In summary, a growing body of research indicated that developing students' social and emotional competencies are essential to supporting students' success. The Collaborative for Social and Emotional Learning has pioneered a commonly used framework defining competencies that contribute to successful experiences in school. According to research by the Aspen Institute, systemic, integrated approaches to social, emotional, and academic development provide the best pathways for students to ensure high school graduation and post-secondary success (2019). Developing and enriching social and emotional skills has been connected to positive behavior outcomes, higher classroom engagement, and higher levels of academic achievement (Durlak et al., 2011).

Additionally, while there is promise and sufficient support that universal social and emotional learning programming and interventions enhance and improve student outcomes, there is limited research or evidence regarding SEL programming's impact on students' standardized and state test scores. While academic achievement results are reported in quantitative measures, most social and emotional skills are measured in qualitative, self-reported measures. Utilizing

measures of students' SEL in school performance measurement systems in proactive approaches, such as whole-child programming, can assist educators in ensuring that each student has a healthy, safe, supportive, equitable, and culturally responsive learning environment, thus reducing factors that impact at-risk students (Dusenbury et al., 2019).

Chapter 3

Research Design and Methods

This study was designed to investigate the relationship between social and emotional learning and academic achievement. This chapter includes a description of the population and the sample. It also includes a discussion of the instrumentation used as well as data collection and data analysis procedures.

This study was guided by four research questions:

1. Is there a relationship between social and emotional learning (SEL) Core Competencies scores (Self-Awareness, Self-Management, Social Awareness, Relationship Skills, and Responsible Decision-Making) and ACT Math Scores?
2. Is there a relationship between social and emotional learning (SEL) Core Competencies scores (Self-Awareness, Self-Management, Social Awareness, Relationship Skills, and Responsible Decision-Making) and ACT English Scores?
3. Is there a relationship between social and emotional learning (SEL) Core Competencies scores (Self-Awareness, Self-Management, Social Awareness, Relationship Skills, and Responsible Decision-Making) and State End-of-Course (EOC) Math Scores?
4. Is there a relationship between social and emotional learning (SEL) Core Competencies scores (Self-Awareness, Self-Management, Social Awareness, Relationship Skills, and Responsible Decision-Making) and State End-of-Course (EOC) English Scores?

Population and Sample

Population

The population for this study was the school year (SY) 2022-2023 student body of a selected high school in Northeast Tennessee ($N=876$). The demographics of the population were

as follows: Male 51.2%, Female 48.8%, White 88.9%, Black/African American 6.6%, Hispanic 2.9%, Asian 1.1%, Native American or Pacific Islander 0.5%. The population also included English Language Learners 0%, Students with Disabilities 12.8%, and Economically Disadvantaged 49.2%. The school serves a city with a population of approximately 13,568 residents.

Sample

The sample included students from the SY 2022-2023 who took the SEL survey while enrolled in the selected high school (n=363). Students were chosen from all grade levels (9-12). The survey was administered once during a ten-day window during the fall semester, and the results of students who completed the survey were included in the sample. The survey scores were used along with academic achievement data from SY22-23.

A sample of 363 students were selected who fit the criterion in grades 9-12. To determine the sample, students who completed the survey were cross-referenced with students who completed and earned a score for the fall semester administration state-administered ELA, Math, and College and Career Readiness tests. The sample was limited to this population to accomplish a comparison of academic achievement scores to determine if social and emotional learning gaps, as determined by SEL scores, can determine appropriate instructional supports and interventions. Using testing and accountability measures from Tennessee allowed for transferability to other Tennessee school districts that may value the results of this research.

Site Selection

The selected high school was the recipient of a \$250,000 program-based grant after students from a Sociology class in the selected high school submitted a grant proposal in a nationwide contest to transform the high school, beginning with two pilot courses for community

service and entrepreneurship to address local needs and project-based learning. The grant award led to a partnership with the funding organization and a whole-school transformation grant of over \$2.5 million for a five-year grant cycle. The funding of the grant is received through annual disbursements of \$500,000 beginning in the SY 17-18. The funding is issued upon school performance milestones according to learner outcomes, a competency-based student performance framework, and a set of school transformation design principles. The selected high school is one of thirteen from the original contest winners and grant recipients. To date, the network of grant-award schools includes twenty-one high schools, two public school districts, and one state-wide district.

Social and emotional learning is a focus of all schools within the granted network and is part of the competency-based student performance framework. The instrument used for the purpose of this research was created for the unique purpose of membership in the school grant network. The Tennessee Department of Education supports SEL and Social and Personal Competencies, and the implementation of SEL in classroom instruction and teaching practices; however, it is not required (Tennessee Department of Education, 2017). Steps to integrate the SPC approach in Tennessee recommend conducting a needs assessment of student SPC skills (SPC Toolkit, 2015). However, Tennessee does not provide a consistent, valid instrument to measure SEL or social and personal competencies. The survey instrument used at the selected high school was consistent with the standards from the Tennessee Department of Education to support the process of developing student social and personal skills and competencies (SPC Toolkit, 2015).

Instrumentation

Description

The instrumentation for this study was the SY 22-23 social and emotional learning (SEL) survey given to all students. The SEL survey was administered to all schools within the grant-funded network as part of the competency-based student performance framework, including the school in this study. The survey was grant funded and conducted by Manpower Demonstration Research Corporation (MDRC). The high school obtained student and parent consent in accordance with local and state policies. The survey is designed for a holistic, student-centered approach to understanding growth and learning about SEL domains and overall experiences in high school. The language of the survey is consistent with the Collaborative for Academic, Social, and Emotional Learning (CASEL) five core competency clusters: self-awareness, self-management, social awareness, relationship skills, and responsible decision-making, commonly known as the CASEL 5 competencies (CASEL, 2022). Students identified a rank on a Likert-type scale on the survey statements.

Administration

The SEL survey used in this study was administered during the Fall semester of SY 22-23. The survey was administered a single time during a ten-day window set by school administration to all students in the selected school at the beginning of the school day during the first-period block class. The school represented in this study utilizes a modified block schedule in which all students are enrolled in five total courses each semester. All courses are block-scheduled 85 minutes class periods, except for one year-long 4th-period class that is 45 minutes. Seniors who have met core academic graduation requirements, and are on track to graduate, may have early release time during 4th and 5th class periods. Survey administration at the beginning

of the school day ensured the best chance to secure results from all grade levels in a single setting and minimized instructional interruption.

Students and parents were notified of the survey prior to the administration window to obtain consent prior to survey administration. Participation was not required or associated with a class grade. Students were allowed to “prefer not to answer” on the first survey question and were not required to continue or participate if they indicated or utilized this answer.

Students used a secure ID to login into the survey to protect their identity, derived from the student information system used by the school. The students took the survey using their school-issued technology device and accessed the dedicated survey link through the school’s Learning Management System (LMS). Survey read-aloud accommodations were available upon request. The survey did not have time limits for questions or the survey in its entirety.

Reliability and Validity

Reliability and validity testing for the SEL survey used in this study has not been conducted. The survey was created through a partnership between the high school’s grant funding partners and the Center for Research on Educational Outcomes (CREDO) at Stanford University in 2017. The goal was to create an instrument that met three criteria:

1. Consistent coverage of the grant network’s competency-based student performance network and learner outcomes.
2. Methodological Rigor.
3. Placement of Practitioner expertise in the forefront.

Thorough research gave consideration to existing measures of SEL from other instruments, but none met all three goals. Input from educators and school leaders in the school grant-funded network assisted in the design of a unique instrument and followed by methodological testing.

In 2018, CREDO ran preliminary psychometrics on the SY18-19 survey version for factor analysis to make sure questions held together in constructs. In 2020 Manpower Demonstration Research Corporation (MDRC) partnered with the grant funding institution for the SEL administration within the network of schools. MDRC streamlined the survey and updated the questions, removing items with inconsistent or irrelevant data. The SEL instrument used in this study is a product of action research and has some face validity, but there is a lack of construct or external validity.

Data Collection and Procedures

Once permission was granted from Milligan University's Institutional Review Board and the local school district, survey data, and academic achievement data was collected. All students who took the survey used a student identification number consistent with the student information system used for testing identification. A separate list was generated of students who took the survey and participated in the Fall SY22-23 administration of State TCAP End of Course English, Math, and College Readiness exams by cross-referencing student ID numbers. Only students who participated in the SEL survey and participated in the Fall testing administration window were used for the sample.

Data Analysis

Data will be analyzed using the Statistical Package for the Social Sciences (SPSS).

Chapter 4

Data Analysis and Findings

The survey and academic achievement data used in this research were selected to measure the relationship between students' self-reported social and emotional learning and academic achievement scores within the selected high school. This study also measures five specific social and emotional learning competencies and how they may be related to students' standardized and state test scores. Research shows that utilizing measures of students' SEL in school performance measurement systems may reduce factors that impact at-risk students (Dusenbury et al., 2019). This study provides evidence to guide schools in decision-making in applying interventions for potential at-risk students before administering high-stakes tests.

This chapter provides descriptive academic achievement accountability data and statistics relating to the sample. Once these descriptives are provided, the chapter transitions into providing statistical analyses for each research question. Four research questions guided this study. Each question is addressed in this chapter with tables of relevant statistics. A brief narrative accompanies each set of statistics.

Descriptives

The definitions of SEL competencies are important for the purpose of this research. The set of five competencies used in measurement is consistent with the Collaborative for Academic, Social and Emotional Learning (CASEL) framework, commonly called the CASEL 5, used to articulate "what students should know and be able to do" (Eklund, et al., 2018). The CASEL 5 framework includes five interrelated sets of cognitive, affective, and behavioral competencies: self-awareness, self-management, social awareness, relationship skills, and responsible decision-making. The Tennessee Social and Personal Competencies (SPC) were derived directly from

CASEL 5 framework. Each SEL competency skill was also used to determine at-risk indicators and strategies to address SEL interventions in Tennessee classrooms (SPC Guide, 2015). The consistency between the CASEL 5 framework and Tennessee's SPC guidelines allows for the results to be aligned and transferable in Tennessee's high schools.

Standardized and state test scores for the Fall Semester of the 2022-2023 School Year of the selected high school were used in this study. The ACT served as one measurement source of academic achievement data. The ACT is a battery of four tests to assess students' post-secondary readiness in English, Math, Reading, and Science (ACT, 2022). ACT scores for the Tennessee Fall Senior Retake in Math and English were used for this study. ACT scores for Math and English were identified on a scale from 1 to 36.

State test scores from the Tennessee Comprehensive Assessment Program (TCAP) End-of-Course (EOC) Math and English exams were also used in this study. EOC scores from the Fall Semester of the 2022-2023 School Year of the selected high school were chosen. Each subject-area test is divided into multiple subparts and administered during a testing window at the end of the course and assesses students' knowledge and proficiency skills according to Tennessee Academic Standards (TDOE, 2022). EOC performance level scale scores range from 200-450, and are categorized on a scale of Performance levels: 1 indicates Below Expectations, 2 indicates Approaching Expectations, 3 indicates Meeting Expectations, and 4 indicates Exceeding Expectations. For the purpose of this study, reported scale scores were used.

Survey assessment data were exported into the Statistical Package for Social Science (SPSS) for analysis. A stepwise multiple linear regression was used to examine the predictors or SEL survey scores to ACT and EOC scores, respectively. For every test, collinearity was

measured, and no issues were found. A summary of regression variables from the SEL survey instrument is displayed in Table 4.1.

Table 4.1

Regression Variables from a Student SEL Survey

SEL Core Competency and corresponding survey item	
Self-Awareness	
Q4_2	I believe I can learn if I try hard enough.
Q4_3	I know when I am doing something well.
Q12	How clearly are you able to describe your feelings?
Self-Management	
Q9	When things go wrong for you, how calm are you able to remain?
Q10	When things go wrong for you, how focused do you remain?
Q11	If you have a problem while working towards an important goal, how well do you keep working?
Social Awareness	
Q4_1	Before I make a decision, I think about how it will affect other people.
Q26_3	I care about helping the people in my school
Q37_5	Students in this school respect each other's differences.
Relationship Skills	
Q6	Overall, how much do you feel like you belong at your school?
Q13	If I have a problem, I can solve it or find someone who can help me solve it.
Q14	Is there at least one teacher or adult in your school you can talk to if you have a problem?
Responsible Decision-Making	
Q25_1	I learn to grow through feedback.
Q25_2	I evaluate the pros and cons of choices I face.
Q25_3	I work to discover creative solutions to challenges.
Q26_1	I look for the opportunity to work on problems I care about.

Note. Total $N = 51$; Social and emotional learning related questions were grouped by SEL Core Competency for use in this study according to the CASEL 5 Framework, (CASEL, 2022).

Analysis of Data

RQ1: Is there a relationship between social and emotional learning (SEL) Core Competencies scores (Self-Awareness, Self-Management, Social Awareness, Relationship Skills, and Responsible Decision-Making) and ACT Math Scores?

Self-Awareness

A stepwise multiple linear regression was conducted to examine the effects of self-reported Self-Awareness survey responses on ACT Math Scores. Starting with three independent variables that might be good predictors of ACT Math Scores, the analysis eliminated all variables from the equation, and no significant regression was found. Students' SEL survey scores indicating competency in Self-Awareness from questions of how clearly they describe their feelings, how they believe they learn with effort, and how they know they are doing something well were not predictors of a relationship with ACT Math Scores.

Self-Management

A stepwise multiple linear regression was calculated to examine the effects of self-reported Self-Management survey responses on ACT Math Scores. The analysis found students' SEL survey scores indicating competency in Self-Management on the question how well they remain focused when things go wrong was significantly related to ACT Math Scores [$F(1, 107)=5.153, p .025$], with an $r^2=.046$. Students' SEL survey scores indicating competency in Self-Management on questions concerning how calm students are when things go wrong and how well students work when faced with problems while working on goals were excluded from the analysis. A positive correlation indicates that as students are likely to indicate a higher level of focus when things go wrong, ACT Math Scores tend to increase. The results are displayed in Table 4.2.

Table 4.2*Regression Coefficients of Self-Management Predictors of ACT Math Scores*

Variable	B	SE	95% CI		P
			LL	UL	
Constant	15.922	1.176	13.590	18.254	<.001
Self-Management How focused are you when things go wrong	.795	.350	.101	1.490	.025

Note. Total $N = 109$; p-values marked with a *signifies $p < .05$; CI = confidence interval; *LL* = lower limit; *UL* = upper limit.

Social Awareness

A stepwise multiple linear regression was calculated to examine the effects of self-reported Social Awareness survey responses on ACT Math Scores. The analysis found that students' SEL survey scores indicating competency in Social Awareness on how much they think about how their decisions affect others was significantly related to ACT Math Scores [$F(1, 107) = 7.969, p = .006$], with an $r^2 = .069$. Students' SEL survey scores indicating competency in Social Awareness on questions concerning how much they care about helping others and how much they respect each other's differences were excluded from the analysis. A positive correlation indicates that as students are likely to agree that before making a decision, they think how it will affect others, ACT Math Scores tend to increase. The results are displayed in Table 4.3.

Table 4.3*Regression Coefficients of Social Awareness Predictors of ACT Math Scores*

Variable	B	SE	95% CI		P
			<i>LL</i>	<i>UL</i>	
Constant	14.969	1.288	12.415	17.522	<.001
Social Awareness Before making decisions, think how they affect others	.956	.339	.285	1.627	.006

Note. Total $N = 109$; p-values marked with a *signifies $p < .05$; CI = confidence interval; *LL* = lower limit; *UL* = upper limit.

Relationship Skills

A stepwise multiple linear regression was calculated to examine the effects of self-reported Relationship Skills survey responses on ACT Math Scores. The analysis found students' SEL survey scores indicating competency in Relationship Skills on the question if students have a problem they can solve it or find someone to help was significantly related to ACT Math Scores [$F(1, 107) = 4.298, p .041$], with an $r^2 = .039$. Students' SEL survey scores indicating competency in Relationship Skills on questions concerning how much they feel they belong at school and how much if they have at least one teacher or adult they can talk to if they have a problem were excluded from the analysis. A positive correlation indicates that as students are more likely to agree that they can solve a problem or find someone to help, ACT Math Scores tend to increase. The results are displayed in Table 4.4.

Table 4.4*Regression Coefficients of Relationship Skills Predictors of ACT Math Scores*

Variable	B	SE	95% CI		P
			<i>LL</i>	<i>UL</i>	
Constant	15.032	1.695	11.671	18.392	<.001
Relationship Skills If I have a problem I can solve it or find someone to help	.875	.422	.038	1.712	.041

Note. Total $N = 109$; p-values marked with a *signifies $p < .05$; CI = confidence interval; *LL* = lower limit; *UL* = upper limit.

Responsible Decision-Making

A stepwise multiple linear regression was conducted to examine the effects of self-reported Responsible Decision-Making survey responses on ACT Math Scores. Starting with four independent variables that might be good predictors of ACT Math Scores, the analysis eliminated all variables from the equation, and no significant regression was found. Students' SEL survey scores indicating competency in Responsible Decision-Making from questions about how they learn to grow through feedback, how they evaluate the pros and cons of choices, how they work to discover creative solutions for challenges, and how they look for opportunities to work on problems they care about were not predictors of a relationship with ACT Math Scores.

RQ2: Is there a relationship between social and emotional learning (SEL) Core Competencies scores (Self-Awareness, Self-Management, Social Awareness, Relationship Skills, and Responsible Decision-Making) and ACT English Scores?

Self-Awareness

A stepwise multiple linear regression was calculated to examine the effects of self-reported Self-Awareness survey responses on ACT English Scores. The analysis found students' SEL survey scores indicating competency in Self-Awareness on how clearly they can describe their feelings were significantly related to ACT English Scores [F(1, 107)=5.312, p .023], with an $r^2=.047$. Students' SEL survey scores indicating competency in Self-Awareness on questions concerning belief in learning if they try hard enough and knowing when they do something well were excluded from the analysis. A positive correlation indicates that the more clearly students can describe their feelings, ACT English Scores tend to increase. The results are displayed in Table 4.5.

Table 4.5

Regression Coefficients of Self-Awareness Predictors of ACT English Scores

Variable	B	SE	95% CI		P
			LL	UL	
Constant	16.451	1.355	13.764	19.137	<.001
Self-Awareness How clearly can you describe your feelings	1.000	.434	.140	1.859	.023

Note. Total $N = 109$; p-values marked with a *signifies $p < .05$; CI = confidence interval; LL = lower limit; UL = upper limit.

Self-Management

A stepwise multiple linear regression was calculated to examine the effects of self-reported Self-Management survey responses on ACT English Scores. The analysis found students' SEL survey scores indicating competency in Self-Management on how well they remain focused when things go wrong was significantly related to ACT English Scores [F(1,

107)=5.049, p .027], with an $r^2=.045$. Students' SEL survey scores indicating competency in Self-Management on questions concerning how calm students are when things go wrong and how well students work when faced with problems while working on goals were excluded from the analysis. A positive correlation indicates that as students are likely to indicate a higher level of focus when things go wrong, ACT English Scores tend to increase. The results are displayed in Table 4.6.

Table 4.6

Regression Coefficients of Self-Management Predictors of ACT English Scores

Variable	B	SE	95% CI		P
			LL	UL	
Constant	15.752	1.679	12.423	19.080	<.001
Self-Management How focused are you when things go wrong	1.123	.500	.132	2.115	.027

Note. Total $N = 109$; p -values marked with a *signifies $p < .05$; CI = confidence interval; LL = lower limit; UL = upper limit.

Social Awareness

A stepwise multiple linear regression was calculated to examine the effects of self-reported Social Awareness survey responses on ACT English Scores. The analysis found students' SEL survey scores indicating competency in Social Awareness on how much they think about how their decisions affect others was significantly related to ACT English Scores [$F(1, 107)=9.458$, p .003], with an $r^2=.081$. Students' SEL survey scores indicating competency in Social Awareness on questions concerning how much they care about helping others and how much they respect each other's differences were excluded from the analysis. A positive

correlation indicates that as students are likely to agree that before making a decision, they think about how it will affect others, ACT English Scores tend to increase. The results are displayed in Table 4.7.

Table 4.7

Regression Coefficients of Social Awareness Predictors of ACT English Scores

Variable	B	SE	95% CI		P
			LL	UL	
Constant	13.945	1.826	10.325	17.564	<.001
Social Awareness Before making decisions, think how they affect others	1.476	.480	.525	2.428	.003

Note. Total $N = 109$; p-values marked with a *signifies $p < .05$; CI = confidence interval; *LL* = lower limit; *UL* = upper limit.

Relationship Skills

A stepwise multiple linear regression was calculated to examine the effects of self-reported Relationship Skills survey responses on ACT English Scores. The analysis found students' SEL survey scores indicating competency in Relationship Skills on if students have a problem they can solve it or find someone to help was significantly related to ACT English Scores [$F(1, 107) = 10.00, p = .002$], with an $r^2 = .085$. Students' SEL survey scores indicating competency in Relationship Skills on questions concerning how much they feel they belong at school and how much if they have at least one teacher or adult they can talk to if they have a problem were excluded from the analysis. A positive correlation indicates that as students are more likely to agree that they can solve a problem or find someone to help, ACT English Scores tend to increase. The results are displayed in Table 4.8.

Table 4.8*Regression Coefficients of Relationship Skills Predictors of ACT English Scores*

Variable	B	SE	95% CI		P
			<i>LL</i>	<i>UL</i>	
Constant	12.055	2.359	7.379	16.731	<.001
Relationship Skills If I have a problem I can solve it or find someone to help	1.857	.587	.693	3.022	.002

Note. Total $N = 109$; p-values marked with a *signifies $p < .05$; CI = confidence interval; *LL* = lower limit; *UL* = upper limit.

Responsible Decision-Making

A stepwise multiple linear regression was calculated to examine the effects of self-reported Responsible Decision-Making survey responses on ACT English Scores. The analysis found students' SEL survey scores indicating competency in Responsible Decision-Making on whether students evaluate the pros and cons of choices they make was significantly related to ACT English Scores [$F(1, 106) = 9.261, p = .003^b$], with an $r^2 = .080$. Students' SEL survey scores indicating competency in Responsible Decision-Making on questions concerning how they grow through feedback, work to discover creative solutions for challenges, and look for opportunities to work on problems they care about were excluded from the analysis. A positive correlation indicates that as students are more likely to agree that they evaluate the pros and cons of their choices, ACT English Scores tend to increase. The results are displayed in Table 4.9.

Table 4.9*Regression Coefficients of Responsible Decision-Making Predictors of ACT English Scores*

Variable	B	SE	95% CI		P
			<i>LL</i>	<i>UL</i>	
Constant	14.501	4.656	11.219	17.784	<.001
Responsible Decision-Making Evaluate the pros and cons of choices	1.291	.424	.450	2.131	.003

Note. Total $N = 108$; p-values marked with a *signifies $p < .05$; CI = confidence interval; *LL* = lower limit; *UL* = upper limit.

RQ3: Is there a relationship between social and emotional learning (SEL) Core Competencies scores (Self-Awareness, Self-Management, Social Awareness, Relationship Skills, and Responsible Decision-Making) and State End-of-Course (EOC) Math Scores?

Self-Awareness

A stepwise multiple linear regression was calculated to examine the effects of self-reported Self-Awareness survey responses on EOC Math Scores. The analysis found students' SEL survey scores indicating competency in Self-Awareness on how strongly they believe they can learn if they try hard enough was significantly related to EOC Math Scores [$F(1, 132) = 8.040$, $p = .005$], with an $r^2 = .057$. Students' SEL survey scores indicating competency in Self-Awareness on questions concerning knowing how clearly to describe their feelings and knowing when they do something well were excluded from the analysis. A positive correlation indicates that the stronger students agree they can learn if they try hard enough, EOC Math Scores tend to increase. The results are displayed in Table 4.10.

Table 4.10*Regression Coefficients of Self-Awareness Predictors of EOC Math Scores*

Variable	B	SE	95% CI		P
			<i>LL</i>	<i>UL</i>	
Constant	286.428	7.541	271.511	301.345	<.001
Self-Awareness Believe can learn if try hard enough	5.346	1.885	1.616	9.075	.005

Note. Total $N = 133$; p-values marked with a *signifies $p < .05$; CI = confidence interval; *LL* = lower limit; *UL* = upper limit.

Self-Management

A stepwise multiple linear regression was calculated to examine the effects of self-reported Self-Management survey responses on EOC Math Scores. The analysis found students' SEL survey scores indicating competency in Self-Management on how well they remain focused when things go wrong was significantly related to EOC Math Scores [$F(1, 133) = 11.646$, $p < .001$], with an $r^2 = .081$. Students' SEL survey scores indicating competency in Self-Management on questions concerning how calm students are when things go wrong and how well students work when faced with problems while working on goals were excluded in the analysis. A positive correlation indicates that as students are likely to indicate a higher level of focus when things go wrong, EOC Math Scores tend to increase. The results are displayed in Table 4.11.

Table 4.11*Regression Coefficients of Self-Management Predictors of EOC Math Scores*

Variable	B	SE	95% CI		P
			<i>LL</i>	<i>UL</i>	
Constant	288.647	5.724	277.325	299.970	<.001
Self-Management How focused are you when things go wrong	6.307	1.848	2.652	9.963	<.001

Note. Total $N = 134$; p-values marked with a *signifies $p < .05$; CI = confidence interval; *LL* = lower limit; *UL* = upper limit.

Social Awareness

A stepwise multiple linear regression was conducted to examine the effects of self-reported Social Awareness survey responses on EOC Math Scores. Starting with three independent variables that might be good predictors of EOC Math Scores, the analysis eliminated all variables from the equation, and no significant regression was found. Students' SEL survey scores indicating competency in Social Awareness from questions of how they think their decisions affect others, their care about helping others at school, and how strongly they believe students respect others' differences at their school were not predictors of a relationship with EOC Math Scores.

Relationship Skills

A stepwise multiple linear regression was calculated to examine the effects of self-reported Relationship Skills survey responses on EOC Math Scores. The analysis found students' SEL survey scores indicating competency in Relationship Skills on whether students can solve a problem or find someone to help solve it was significantly related to EOC Math

Scores [$F(1, 132)=8.922, p .003$], with an $r^2=.063$. Students' SEL survey scores indicating competency in Relationship Skills on questions concerning how much they feel they belong at school and how much if they have at least one teacher or adult they can talk to if they have a problem were excluded from the analysis. A positive correlation indicates that as students are more likely to agree that they can solve a problem or find someone to help, EOC Math Scores tend to increase. The results are displayed in Table 4.12.

Table 4.12

Regression Coefficients of Relationship Skills Predictors of EOC Math Scores

Variable	B	SE	95% CI		P
			LL	UL	
Constant	281.414	8.740	264.125	298.703	<.001
Relationship Skills If I have a problem I can solve it or find someone to help	6.910	2.313	2.334	11.485	.003

Note. Total $N = 134$; p-values marked with a *signifies $p < .05$; CI = confidence interval; LL = lower limit; UL = upper limit

Responsible Decision-Making

A stepwise multiple linear regression was calculated to examine the effects of self-reported Responsible Decision-Making survey responses on EOC Math Scores. The analysis found students' SEL survey scores indicating competency in Responsible Decision-Making on whether students learn to grow through feedback was significantly related to EOC Math Scores [$F(1, 131)=4.623, p .033$], with an $r^2=.034$. Students' SEL survey scores indicating competency in Responsible Decision-Making on questions concerning how they evaluate the pros and cons of choices, work to discover creative solutions for challenges, and look for opportunities to work on

problems they care about were excluded from the analysis. A positive correlation indicates that as students are more likely to agree that they evaluate the pros and cons of their choices, EOC Math Scores tend to increase. The results are displayed in Table 4.13.

Table 4.13

Regression Coefficients of Responsible Decision-Making Predictors of EOC Math Scores

Variable	B	SE	95% CI		P
			LL	UL	
Constant	291.614	7.379	277.016	306.212	<.001
Responsible Decision-Making Evaluate the pros and cons of choices	4.175	1.942	.334	8.016	.033

Note. Total $N = 132$; p-values marked with a *signifies $p < .05$; CI = confidence interval; *LL* = lower limit; *UL* = upper limit.

RQ4: Is there a relationship between social and emotional learning (SEL) Core Competencies scores (Self-Awareness, Self-Management, Social Awareness, Relationship Skills, and Responsible Decision-Making) and State End-of-Course (EOC) English Scores?

Self-Awareness

A stepwise multiple linear regression was calculated to examine the effects of self-reported Self-Awareness survey responses on EOC English Scores. The analysis found students' SEL survey scores indicating competency in Self-Awareness on how clearly they can describe their feelings was significantly related to EOC English Scores [$F(1, 136) = 7.700, p = .006$], with an $r^2 = .054$. Students' SEL survey scores indicating competency in Self-Awareness on questions concerning belief in knowing they can learn if they try hard enough and knowing when they do something well were excluded from the analysis. A positive correlation indicates that the more

clearly students can describe their feelings, EOC English Scores tend to increase. The results are displayed in Table 4.14.

Table 4.14

Regression Coefficients of Self-Awareness Predictors of EOC English Scores

Variable	B	SE	95% CI		P
			LL	UL	
Constant	330.911	3.490	324.009	337.814	<.001
Self-Awareness How clearly you can describe your feelings	-3.336	1.202	-5.714	-.959	.006

Note. Total $N = 137$; p-values marked with a *signifies $p < .05$; CI = confidence interval; *LL* = lower limit; *UL* = upper limit.

Self-Management

A stepwise multiple linear regression was conducted to examine the effects of self-reported Self-Management survey responses on EOC English Scores. Starting with three independent variables that might be good predictors of EOC English Scores, the analysis eliminated all variables from the equation, and no significant regression was found. Students' SEL survey scores indicating competency in Self-Management from questions of how calm they are when things go wrong, how focused they are when things go wrong, and how well they work when faced with problems while working on goals were not predictors of EOC English Scores.

Social Awareness

A stepwise multiple linear regression was conducted to examine the effects of self-reported Social Awareness survey responses on EOC English Scores. Starting with three independent variables that might be good predictors of EOC English Scores, the analysis

eliminated all variables from the equation, and no significant regression was found. Students' SEL survey scores indicating competency in Social Awareness from questions of how they think their decisions affect others, their care about helping others at school, and how strongly they believe students respect others' differences at their school were not predictors of a relationship with EOC English Scores.

Relationship Skills

A stepwise multiple linear regression was conducted to examine the effects of self-reported Relationship Skills survey responses on EOC English Scores. Starting with three independent variables that might be good predictors of EOC English Scores, the analysis eliminated all variables from the equation, and no significant regression was found. Students' SEL survey scores indicating competency in Relationship Skills from questions of how they feel they belong at school, if they have at least one teacher or adult to talk to if they have a problem, and if they can solve a problem or seek help solving it was not predictors of a relationship with EOC English Scores.

Responsible Decision-Making

A stepwise multiple linear regression was conducted to examine the effects of self-reported Responsible Decision-Making survey responses on ACT English Scores. Starting with four independent variables that might be good predictors of ACT English Scores, the analysis eliminated all variables from the equation, and no significant regression was found. Students' SEL survey scores indicating competency in Responsible Decision-Making from questions about how they learn to grow through feedback, how they evaluate the pros and cons of choices, how they work to discover creative solutions for challenges, and how they look for opportunities to

work on problems they care about were not predictors of a relationship with ACT English Scores.

Summary

The purpose of this study was to present the findings following analysis. The sample of this study consisted of 363 students in grades 9-12 in a selected high school in Northeast Tennessee. This predictive design study examined the relationship between students' self-reported social and emotional (SEL) Core Competencies scores with ACT Math and English and EOC Math and English Scores, respectively. Four research questions guided this study. Results show a significant relationship between the SEL Core Competencies scores, ACT English and Math scores, and EOC Math and English scores.

Results show that within the Self-Management SEL Competency, the survey item "I remain focused when things go wrong" was a significant predictor of ACT Math, ACT English, and EOC Math scores. Within the Relationship Skills SEL Competency, the survey item "If I have a problem, I can solve it or find someone to help" was also a significant predictor of ACT Math, ACT English, and EOC Math scores. Results show within the Social Awareness SEL Competency survey item "I think about how decisions affect others" was a significant predictor of ACT Math and ACT English scores, while survey item "I believe I can learn if I try hard enough" was a significant predictor of EOC Math scores.

The only significant predictor of EOC English scores was the survey question concerning how students can describe their feelings, from the Self-Awareness competency. This question was also a predictor of ACT English scores. The Self-Awareness competency survey item "I think about how decisions affect others" was also a significant predictor of ACT English scores. Within the Responsible Decision-Making SEL competency, "I evaluate pros and cons for

choices I make” and “I learn and grow through feedback” were predictors of ACT English and EOC Math, respectively. The test score grouping with the least amount of predictors was EOC English.

Chapter 5

Summary, Conclusions, Discussion, and Recommendations

This chapter provides a summary of findings, including connections to prior research. A discussion of results is also included with limitations of the study, conclusions, and recommendations for further research, practice, and transferability.

The roles and responsibilities of school leaders have evolved in recent years to include the support and development of school-based social and emotional learning programs to support non-academic needs and whole-child development. Effective SEL program implementation emphasizes a universal approach where all students are engaged in a practical, coordinated learning process, integrating social and emotional learning with other academic subjects (Durlak et al., 2022). In the short term, effective SEL programs and interventions build students' confidence levels, increase student engagement, improve academic achievement, and reduce behavior problems. In the long term, effective SEL programs and interventions can better prepare students for post-secondary opportunities and develop better citizenship and career skills (Greenberg et al., 2017).

Interventions that develop SEL competencies are supported by educational practice and policy. Many states have created explicit learning standards related to SEL as an integral part of all students' education (Dusenbury, 2019). However, developing comprehensive, evidence-based social and emotional learning programs is challenging for schools facing student learning loss, College and Career Readiness declines, and academic deficiency due to the COVID-19 Pandemic. The 2022 Nation Report Card Data from the National Center of Educational Progress (NAEP) indicated significant declines in 4th and 8th-grade public school Math and Reading scores

(NAEP, 2022). The American College Testing (ACT) Service reported the Class of 2022 composite score as the lowest in over three decades (ACT, 2022).

School-based SEL intervention programs implemented with fidelity have been associated with increased student academic performance that may surpass exclusive educational interventions (Durlak, 2022). While research indicates that acquiring SEL skills and competencies can affect positive outcomes and reach at-risk students struggling academically, applying appropriate interventions for long-term academic achievement is difficult. Developing and implementing an integrative SEL program that cultivates the necessary skills for academic success and meets the needs of at-risk students is challenging for schools.

Students' social and emotional skills are measured through self-reported student measures. Across the country, interest is growing in using measures of students' SEL in school performance measurement systems. However, little research is currently dedicated to determining the relationship between students' self-reported SEL factors and academic achievement. This study aimed to identify the relationship between students' self-reported social and emotional scores and standardized academic achievement test scores.

Summary of Findings

This study examined the relationship between social and emotional learning with ACT Math and English scores and Tennessee TCAP End-of-Course scores in Math and English. This study also examined the relationship of five SEL Core Competency categories with ACT Math and English scores and Tennessee TCAP End-of-Course scores in Math and English. For the scope of this study, four research questions were tested and answered. These questions were constructed to determine whether test scores could inform schools' decision-making in applying interventions for potential at-risk students before administering high-stakes tests.

This study found the strongest predictors of both ACT Math and English scores and EOC Math scores within the SEL Core Competencies of Self-Management and Relationship Skills. Social Awareness Core Competency items only predicted ACT Math and English scores. The Self-Awareness Core Competency was the strongest predictor of ACT English and EOC English. Responsible Decision-Making, although significant, was not a predictor of ACT Math or EOC English Scores. The test score grouping with the fewest predictors was EOC English, with only one predictor in the SEL Self-Awareness Core Competency. A summary of the results is displayed in Table 5.1.

Table 5.1*Summary of Results of Research Questions 1-4*

SEL Core Competencies and survey items	ACT Math	ACT English	EOC Math	EOC English
Self-Awareness				
I believe I can learn if I try hard enough.	X	X	✓	X
I know when I am doing something well.	X	X	X	X
How clearly are you able to describe your feelings?	X	✓	X	✓
Self-Management				
When things go wrong for you, how calm are you able to remain?	X	X	X	X
When things go wrong for you, how focused do you remain?	✓	✓	✓	X
If you have a problem while working towards an important goal, how well do you keep working?	X	X	X	X
Social Awareness				
Before I make a decision, I think about how it will affect other people.	✓	✓	X	X
I care about helping the people in my school.	X	X	X	X
Students in this school respect each other's differences.	X	X	X	X
Relationship Skills				
Overall, how much do you feel like you belong at your school?	X	X	X	X
If I have a problem, I can solve it or find someone who can help me solve it.	✓	✓	✓	X
Is there at least one teacher or adult in your school you can talk to if you have a problem?	X	X	X	X
Responsible Decision-Making				
I learn to grow through feedback.	X	X	✓	X
I evaluate the pros and cons of choices I face.	X	✓	X	X
I work to discover creative solutions to challenges.	X	X	X	X
I look for the opportunity to work on problems I care about.	X	X	X	X

Note. ✓ = indicates the Core Competency survey item is a predictor of test scores; X = indicates the Core Competency survey item is not a predictor of test scores.

Discussion of Findings

This research found students' SEL survey scores to be significantly related to standardized test scores. For survey scores found significantly related to test scores, the results suggest that the higher students self-report their social and emotional health on the instrument used, the more likely it will correspond with higher ACT Math and English Scores and higher EOC Math and English Scores. All relationships were positive, indicating that when SEL scores increase for the identified predictor, the test score will likely increase. These findings confirm the current literature.

The Relationship between Self-Awareness and Test Scores

The study findings suggest that students' SEL scores within the Core Competency of Self-Awareness are significantly related to ACT English Scores, EOC Math Scores, and EOC English Scores. Results indicate that the "How clearly can you describe your feelings?" survey item significantly predicted both ACT English and EOC English scores. Students with high levels of self-awareness recognize how thoughts, feelings, and actions are interconnected (Weissberg, et al., 2015). This confirms that SEL programs that emphasize skill sets to develop Self-Awareness by demonstrating, identifying, and describing one's feelings and emotions, identifying personal cultural, and linguistic assets, and developing interests and a sense of purpose could yield gains in school academic English accountability measures.

The survey item "I believe I can learn if I try hard enough" significantly predicted EOC Math scores. This indicates that a student's perceived self-competence may lay the groundwork for future academic accomplishments (Denham & Brown, 2010). This is strongly connected to a growth mindset. Students who demonstrate a growth mindset are often supported by messages that consist of a strong belief in potential, value, and taking on new challenges. Students who are

self-aware and confident about their learning, may try harder and persist in facing challenges (Durlak et al., 2011; Aronson, 2022).

The Relationship Between Self-Management and Test Scores

The study findings suggest that students' SEL scores within the Core Competency of Self-Management were significantly related to ACT Math Scores, ACT English Scores, and EOC Math Scores. Results show the survey item "I remain focused when things go wrong" was a significant predictor of test scores within the Self-Management SEL Competency. This survey item corresponds to the Self-Management capacity of identifying and using stress-management strategies. Understanding and utilizing strategies for managing emotions and behaviors constructively is a self-management goal of the Tennessee Social and Personal Competency Framework (2017). Developing these competencies requires effective modeling of self-talk, developing goal-setting strategies, and actionable feedback. Students who set high academic goals, have self-discipline, motivate themselves, manage their stress, and organize their approach to work learn more and get better grades (Durlak et al., 2011).

The Relationship between Social Awareness and Test Scores

The study findings suggest that students' SEL scores within the Core Competency of Social Awareness were significantly related to ACT Math Scores and ACT English Scores. Results indicate that thinking about how decisions affect others before decision-making is a predictor of test scores. This aligns with current research. According to Denham and Brown (2010), schools are social places, learning is a social process, and the inability to interpret emotions can create a confusing, overwhelming learning environment. Students who exhibit Social Awareness competency skills demonstrate the ability to empathize with others, including others from diverse backgrounds and cultures.

The Relationship between Relationship Skills and Test Scores

The study findings suggest that students' SEL scores within the Relationship Skills Core Competency are significantly related to ACT Math Scores, ACT English Scores, and EOC Math Scores. Results show that within the Relationship Skills SEL Competency, the survey item "If I have a problem, I can solve it or find someone who can help me solve it" was a significant predictor of test scores. Numerous research studies support the conclusion that relationships and social skills are related to academic success (Denham & Brown, 2010). A Whole Child education approach, such as Tennessee's recommended Social and Personal Competency Guide (2017), could create an environment where students feel safe, engaged, supported, and challenged. Classrooms where educators have high expectations and challenge students, and the quality of relationships between teachers and students contribute to long-term academic success (Roorda et al., 2011).

The Relationship between Responsible Decision-Making and Test Scores

The study findings suggest that students' SEL scores within the Responsible Decision-Making Core Competency were significantly related to ACT English Scores and EOC Math Scores. The survey item concerning "evaluating pros and cons of choices" was a predictor of ACT English scores. This finding supports current research that developing students' critical thinking skills and reasoning abilities improves academic outcomes. Evaluating and judging social norms and ethical standards requires students to balance the different aspects of social knowledge, distinguishing and anticipating consequences of cultural conventions, personal values, and safety (CASEL, 2022).

The survey item "I learn to grow through feedback" was found to be a predictor of EOC Math scores within the Responsible Decision-Making competency domain. Students who

demonstrate proficiency in considering feedback from others in the decision-making process have developed and model competencies in both academic and social situations. Research suggests that leading students through the decision-making process with the intention to build capacities to respond constructively through evaluation rather than emotion or reaction increases responsible decision-making skills (CASEL, 2022).

Limitations of the Study

This study was conducted in a single high school in Northeast Tennessee and may not be generalizable to other populations. The study did not consider the different teaching styles of the English and math teachers throughout the course of the student's academic history. Students' demographic information, such as race, age, gender, and grade level, did not factor in this study. Students' academic information, such as economically disadvantaged status or students with disabilities status, did not factor in this study. Additionally, although the SEL instrument used in this study is a product of action research and has some face validity, there is a lack of construct or external validity.

Recommendations for Practice

Schools often use various measures to monitor students' progress and identify those who could be at risk. Factors such as behavior incidents, attendance rates, and academic data are usually included in these systems to inform decision-makers in applying interventions to meet the needs of students. Using students' social and emotional learning competencies, such as how well students persevere, manage their thoughts and emotions, and understand what others think and feel, has been shown to be related to many life outcomes and can be shaped through educational programs (Kautz et al., 2017).

Measuring students' SEL growth is valuable when seeking to improve student outcomes. The significant results from this survey suggest that incorporating SEL measurements in addition to academic achievement measures would be beneficial as an indicator of at-risk consideration and could supplement early warning systems used by schools and school systems. Selecting and implementing needs-based SEL programming and interventions requires assessing students' social and emotional learning. Self-reported scores from students can identify areas of strength and weakness regarding programming to support social and emotional learning.

A social and emotional learning program grounded in research is recommended to engage students across all grade levels and is more likely to improve students' SEL results. Programs and interventions aligned with the CASEL 5 framework that integrates academic integration, college and career readiness, mental health, and trauma supports, interventions, whole child initiatives, school climate, and equity measures are characterized and universal and effective SEL programming.

School leaders should review all data and results of survey measures to inform decision-making. The results from this research do not indicate that one variable causes another, but it could be suggested that students who report lower scores would benefit from a suggested SEL program as a school-wide intervention to improve test scores. For example, schools with persistently low EOC English scores and low scores within the Relationship Skills domain may benefit from an intervention program that integrates English Language Arts with social skills development. Data can be reviewed to maximize student outcomes and explore trends across groups.

Based on these findings, this research suggests that using SEL programming and interventions is a recommendation for practice. However, many other variables can account for

programming outcomes. Systematic SEL programming, where all students and adults in the classroom and school are engaged in a coordinated learning process through partnerships with the school community, is imperative for the program's effectiveness and implementation. School leadership, program development, educator training, funding and sustainability, and stakeholder collaboration can influence SEL outcomes (Durlak et al., 2022; Mahoney et al., 2021).

Recommendations for Further Study

This research was based on a single survey administration of social and emotional learning competencies in a select high school in Northeast Tennessee. Research points to the potential of enhancing social and emotional competencies to improve academic performance and behavior (Taylor et al., 2017). The Tennessee Social and Personal Competency framework (2017) is aligned with other academic priorities to assist teachers in supporting students' social and emotional health. Evaluating the effectiveness of SEL programming to foster the improvement of intrapersonal and interpersonal skills, attitudes, and behavioral functions is an important priority for future research (Taylor et al., 2017).

A recommendation for further research is to conduct a similar study over a more extended period of time with the same students in the same school. Targeted skills, along with academic test score levels, should be measured at the beginning of the study and after applying an appropriate intervention. Assessment before the intervention begins, along with progress monitoring during implementation, allows exploration of how much students' skills levels change and how the interventions may relate to future academic outcomes. This information would be beneficial to schools in applying appropriate interventions for at-risk students.

Conclusion

A student's success depends on academic achievement and learning a broader range of social and emotional learning competencies. This study suggests that social and emotional learning skills are predictors of standardized and state test scores. This finding suggests to educators the importance of understanding students' SEL needs and implementing appropriate universal, school-based SEL programs to meet those needs to maximize both short-term and long-term academic outcomes.

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Appendix A



Date: September 16, 2022

Principal Investigator: Sheri Nelson, Graduate Student, Milligan University
From: The Institutional Review Board (IRB) at Milligan University
Project: *The relationship between social emotional learning and students' academic performance at a selected high school in Northeast Tennessee*
IRB Tracking Number: 2022-27
IRB Approval Number: Exp2209141109
Subject: Final Approval

On behalf of the Milligan University Institutional Review Board (IRB), we are writing to inform you that the above-mentioned study has been approved as expedited. This approval also indicates that you have fulfilled the IRB requirements for Milligan University.

All research must be conducted in accordance with this approved submission, meaning that you will follow the research plan you have outlined here, use approved materials, and follow university policies.

Take special note of the following important aspects of your approval:

- Any changes made to your study require approval from the IRB Committee before they can be implemented as part of your study. Contact the IRB Committee at IRB@milligan.edu with your questions and/or proposed modifications;
- If there are any unanticipated problems or complaints from participants during your data collection, you must notify the Milligan University IRB Office within 24 hours of the data collection problem or complaint.

The Milligan University IRB Committee is pleased to congratulate you on the approval of your research proposal. Best wishes as you conduct your research! If you have any questions about your IRB Approval, please contact the IRB Office and copy your faculty advisor if appropriate on the communication.

On behalf of the IRB Committee,

David D. Gibbons, Ph.D.
Chair, Institutional Review Board
Milligan University



Appendix B

Student SEL Survey

Q4_1	Please indicate how true each of the following statements is for you: not at all true, a little true, somewhat true, mostly true, completely true. - Before you make a decision, you think about how it will affect other people
Q4_2	Please indicate how true each of the following statements is for you: not at all true, a little true, somewhat true, mostly true, completely true. - You believe you can learn if you try hard enough
Q4_3	Please indicate how true each of the following statements is for you: not at all true, a little true, somewhat true, mostly true, completely true. - You know when you are doing something well
Q25_1	Please indicate how true each of the following statements is for you: not at all true, a little true, somewhat true, mostly true, completely true. - You have learned to grow through feedback
Q25_2	Please indicate how true each of the following statements is for you: not at all true, a little true, somewhat true, mostly true, completely true. - You evaluate the pros and cons of the choices you face
Q25_3	Please indicate how true each of the following statements is for you: not at all true, a little true, somewhat true, mostly true, completely true. - You work to discover creative solutions to challenges
Q26_1	Please indicate how true each of the following statements is for you: not at all true, a little true, somewhat true, mostly true, completely true. - You look for the opportunity to work on problems you care about
Q26_2	Please indicate how true each of the following statements is for you: not at all true, a little true, somewhat true, mostly true, completely true. - You can do well in a subject even if you are not naturally good at it
Q26_3	Please indicate how true each of the following statements is for you: not at all true, a little true, somewhat true, mostly true, completely true. - You care about helping the people in your school
Q5	How excited are you about going to your classes?
Q6	Overall, how much do you feel like you belong at your school?
Q7	Overall, how high are your teachers' expectations of you?
Q8	Overall, how interested are you in your classes?
Q9	When things go wrong for you, how calm are you able to remain?
Q10	When things go wrong for you, how focused are you able to remain?
Q11	If you have a problem while working towards an important goal, how well can you keep working?
Q12	How clearly are you able to describe your feelings?
Q13	How much do you agree or disagree with the following statement: If I have a problem, I can solve it or find someone who can help me solve it.
Q14	Is there at least one teacher or other adult in your school that you can talk to if you have a problem?
Q37_1	How strongly do you agree or disagree with the following statements: - I try to do my best in school.
Q37_5	How strongly do you agree or disagree with the following statements: - Students in this school respect each other's differences (for example, gender, race, culture, sexual orientation)

Appendix C

Consent to Participate in Research Letter

Dear Parent or Guardian:

Your child is invited to participate in the school Social and Emotional (SEL) Survey. The SEL Survey focuses on a student's academic and social-emotional learning progress during their high school career. The survey asks your child to reflect on his/her own feelings and understanding about themselves, their school community, and the greater community. The survey will also allow your child to reflect on their own academic experience. Your child's teachers will also contribute qualitative and quantitative observations about your child's progress along several academic indicators.

The data from these survey questions and observations will inform broader and deeper definitions of student success across multiple areas of development, both academic and social-emotional. The survey is designed to support the school's continuous improvement practices by providing actionable information about students that can help our school target interventions and truly know our students in rich, multi-dimensional ways.

Risks and Benefits:

There are no risks associated with participating in this survey.

Privacy Policy:

We shall take all reasonable measures to protect the confidentiality of the data as required by federal and state laws and regulations applicable to the administration of this survey. These may include but are not limited to the federal Social Security Act and Family Education Rights and Privacy Act; internet security laws, and regulations put into effect by these acts. Students will log in to the survey using secure student IDs, and only approved school personnel will view student-level results.

Student's Rights:

Your child's participation is voluntary, and your child has the right to withdraw his/her consent or discontinue participation at any time without penalty or loss of benefits to which she/he is otherwise entitled. Within the survey, your child has the right to refuse to answer any question with which he/she is not comfortable. Your child's individual privacy will be maintained in all published and written data resulting from the survey. If you have read this form and have decided NOT TO ALLOW YOUR CHILD TO PARTICIPATE, please return this form to Mrs. Sheri Nelson, Assistant Principal, to keep your child from participating in this survey.

Contact Information:

Questions or concerns- If you have any questions or concerns about the SEL survey, its procedures, risks, and benefits, please contact our Assistant Principal and Data Coordinator, Sheri Nelson, at 423-547-8015, ext. 1511 or sheri.nelson@ecschoools.net.