

BEYOND ACADEMICS: A CORRELATIONAL STUDY OF SOCIAL EMOTIONAL
LEARNING COMPETENCY GROWTH AND STUDENT DEMOGRAPHIC DATA

Robert Wagner

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Irene Wong, PhD

Dissertation Chair

Mishan Jensen, PhD

Dissertation Committee

Dedication

This dissertation is dedicated to my parents. They have unconditionally supported and encouraged me in my personal, educational, and professional journeys. I am grateful for their sacrifices and efforts to develop me into the person I am today.

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Abstract

A growing body of evidence highlights the relationship between youth attainment of social emotional learning (SEL) competencies and school outcomes such as academic performance, school attendance, school attainment, behavioral problems in school, and persistence of antisocial behavior. A lack of clear diversity in student populations in prior research leads to questions regarding growth in social emotional learning competencies in diverse populations. Given disparities in academic performance between low-income minority students and their affluent peers and the potential impact of SEL on student outcomes, this topic deserves further exploration. The present study explored social emotional learning competency growth in youth investigating the following questions:

To what extent do student demographic and socio-cultural characteristics (gender, age, enrollment in special education, English language learner status, free/reduced lunch status) relate to social emotional learning competency growth?

In what way does a student's grade level relate to their rate of social emotional learning competency growth?

This correlational study explored SEL competency data collected by a large charter school network via the Panorama Social Emotional Survey, an open-source assessment that measured student social emotional skills and mindsets via student self-report. The survey was conducted twice, once in the fall and again in the spring. Multiple regression analysis and One-way Analysis of Variance (ANOVA) tests were used to answer the research questions. Regression models were tested with three measures of social emotional learning competencies in spring as dependent variables, demographic and socio-cultural characteristics as independent variables, and fall scores included as control variables. Data suggests positive associations between development in all 3 SEL competencies and age. Student grade level, gender, enrollment in special education, enrollment in free and reduced lunch programming, and English language learner status each had significant positive or negative associations with one to two measures of SEL competency growth. Implications for study findings include expanded research into other SEL competencies and associations with socio-cultural and demographic characteristics, development of SEL interventions, and applications of social emotional learning competency training in diverse and historically underrepresented populations.

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Chapter 1: Introduction and Background

Statement of the Problem

Research indicates a strong relationship between school outcomes and factors such as neighborhood, home life, specific school, and community resource access (Bronfenbrenner, 1979; Elias & Haynes, 2008). Beyond a child's life conditions, a growing body of evidence highlights the correlation between their attainment of social emotional competencies (e.g. emotional regulation skills, communication skills, self-control, problem internalization) and school outcomes such as academic performance, school attendance, school attainment, behavioral problems in school, and persistence of antisocial behavior (Black & William, 2010; Moffitt et al., 2011; Joffe & Black, 2012; Raver & Knitzer, 2002; Riglin et al., 2014; Tan et al., 2018). Jones et al.'s study of kindergarten students highlights a strong connection between mastery of these social-emotional skills in early development and life outcomes beyond school performance including employment, criminal activity, substance use, and mental health (2015).

The leading voice of SEL strategy, promotion, and initiatives over the last 25 years, Collaborative for Academic, Social, and Emotional Learning (CASEL), describes social 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 (CASEL, 2019, para. 1)”

A meta-analysis of 213 SEL school-based interventions for over 270,000 students across grades kindergarten through 12 found that compared to a control, SEL interventions lead to an 11-percentile-point increase in academic outcomes and a reduction in school disciplinary issues (Durlak, et al., 2011). Three meta-analyses that followed Durlak et al. and included international

and longitudinal studies reinforce previous findings and indicate a long-term effect post-intervention (Mahoney et al, 2019). SEL interventions have the most significant impacts among youth with the highest number of risks and needs, which includes students under resourced communities or who are academically or behaviorally less developed than their peers (Jones et al., 2019, p. 133).

Research indicates the significant impact of cultural influences, including immigrant status, race or ethnicity, socioeconomic status, gender, among others on SEL competency development (Chen, 2009). It is unclear if the CASEL competencies are correspondingly equal from culture to culture, or if competencies are similar across cultures but are different in their structure and purpose. National data indicates an increasing gap in academic performance between low-income minority students and their affluent peers (National Center for Education Statistics, 2019), and research shows that living in poverty increases a youth's risk of limiting social-emotional skills and mental health (McCoy et., 2018; Sibley et al., 2019). An investigation into the diversity of samples used in Durlak et al.'s 2011 meta-analysis found that diversity characteristics related to ethnicity and socioeconomic status of the students studied were incongruously reported and questioned the universalization of effectiveness for diverse populations (Rowe et al., 2018).

Purpose of the Project and Significance of the Study

This study seeks to explore relationships between social emotional learning competency growth and student demographic and socio-cultural characteristics such as gender, age, enrollment in special education, English language learner status, and free/reduced lunch status. The population that makes up this study is largely racial minority youth from a Title I charter school district (children from low-income families make up at least 40 percent of enrollment).

Given the impact of SEL competency growth on academic performance and life outcomes and the expressed need for additional research as it relates to diverse student populations, findings will help to inform future research questions and SEL interventions for students across a wide variety of demographic and socio-cultural backgrounds. Ultimately, this research will support an increased understanding of SEL development across a variety of populations and improved support for youth receiving SEL interventions in schools.

Project Overview

This study includes a literature review of the rationale for SEL interventions in schools, the history of the development of the SEL framework, definitions of SEL competencies, a description of the developmental SEL process, the impact of SEL on youth outcomes, SEL assessment and measurement, the current state of SEL, diverse populations and SEL, and a description of adolescent development. Data collected from a Fall and Spring implementation of the Panorama Social Emotional Learning Survey will be analyzed to identify relationships between changes in SEL competency growth and student demographic and socio-cultural characteristics. What follows is a discussion including interpretation of results, limitations, implications for policy and practice, and recommendations for future research.

Research Questions

The survey data collected from the charter school district implementing the Panorama SEL Survey will be analyzed alongside student demographic and socio-cultural data to seek to answer the following questions:

To what extent do student demographic and socio-cultural characteristics (gender, age, enrollment in special education, English language learner status, free/reduced lunch status) relate to social emotional learning competency growth?

In what way does a student's grade level relate to their rate of social emotional learning competency growth?

Chapter 2: Literature Review

The Need for SEL in Schools

Today's youth are navigating a progressively sophisticated world with rapid changes in technology and media, increasingly diverse and multicultural populations in schools, and rising economic and social challenges (Weissberg et al., 2019, p. 5). Researchers share consensus that student engagement in an academic setting is equally as essential to other educational constructs and estimate that by the time students reach high school, somewhere between 40% and 60% of students across urban, rural, and suburban settings become "chronically disengaged" from school (Klem & Connell, 2004). Young people also face a variety of unique interpersonal challenges. According to the 2019 Youth Risk Behavior Survey results, approximately 19.6% of high-school age students experienced bullying on school property, 15.7% reported experiencing electronic bullying, and 8.7% reported not attending school due to feelings of unsafety either at school or on their way to and from school (Centers for Disease Control and Prevention, 2019). These challenges in combination with risky behaviors (e.g., sex, interpersonal violence, substance use) impact both academic and personal life outcomes.

Research indicates a strong relationship between school outcomes and factors such as neighborhood, home life, specific school, and community resource access (Bronfenbrenner, 1979; Elias & Haynes, 2008). As schools continue to grow in diversity of student populations across a variety of measures—racial, ethnic, and socio-economic (Weissberg et al., 2014), the education community recognizes that students need learning supports in the school setting beyond academics to meet the demands of our modern world and succeed in life. Additionally, students that lack competence in social emotional skills not only underperform academically but also interrupt learning of their peers (Benson, 2006). The public at large also shares the belief

that schools must prepare students appropriately for personal and professional success with “21st century skills” including analytical thinking, multi-tasking, interpersonal communication, teamwork, and self-sufficiency (National Research Council, 2012).

Development of SEL Framework

Attention to the impact of competencies beyond academic success first garnered attention from Dr. James Comer and a team at the Yale University Child Study Center in 1968 through their exploration of “whole child” supports in two schools in New Haven, Connecticut. Over the course of the next decade and a half, the team noticed significant improvements in student behaviors and academic performance compared to national averages. The success of the Child Study Center’s efforts led the superintendent of New Haven Public Schools to increase social emotional interventions. This resulted in the development of the New Haven Social Development program which explored SEL interventions in schools from 1987-1992. Concurrently, Drs. Roger Weissberg and Maurice Elias built a group of thought leaders together to begin the work of establishing a social and emotional learning framework (CASEL, n.d).

In 1994, A coalition of teachers, researchers, and child advocates known as The Fetzer Group collaborated to create the conceptual framework known as “Social and Emotional Learning,” or “SEL” (CASEL, 2019) in response to the growing support regarding this movement. The Fetzer Institute’s meeting in 1994 was the birthplace of the Collaborative for Academic, Social, and Emotional Learning (CASEL), the leading voice of the SEL strategy, promotion, and initiatives over the last 25 years (CASEL, 2019). CASEL’s mission is to incorporate SEL interventions as a foundational aspect of education alongside academic instruction across the spectrum of k-12 education through research, the development of

evidence-based SEL interventions, and federal and state policy advocacy (Weissberg et al., 2019, p. 5).

Social Emotional Learning Competencies

In 1976, Economists Bowles and Gintis created the term ‘non-cognitive personality traits’ (p. 116) to describe the skills needed in the labor market that are not formally addressed and assessed in the United States education system. In the years that have followed, noncognitive childhood traits including perseverance, attention, and self-regulation and their associations with adult development and well-being have been widely investigated. Noncognitive traits including self-discipline, academic motivation, and interpersonal skills have shown to be a higher predictor of success in the workplace than measures of cognitive ability (Levin, 2012). These traits are developed with age, are necessarily intertwined (Jones & Kahn, 2017, p. 7), and their growth is associated with developmental tasks (Denham, 2018, p. 1). A systematic review and metaanalysis found some evidence of a positive association with these skills and traits and improved outcomes with a recommendation of further, higher-quality studies to inform future interventions (Smithers et al., 2018).

CASEL has utilized existing research into noncognitive skills and traits to identify five interrelated core skills, habits, and mindsets as Social Emotional Competencies (the “CASEL 5”) that fall under the umbrella of SEL and “provide a foundation to navigate school and life successfully” (Weissberg et al., 2015, p. 6). These five core SEL competencies include:

Self-Awareness: understanding one’s thoughts, emotions, and values and their influences on behavior in various settings. Self-awareness includes holding self-confidence while recognizing one’s own assets and limits (CASEL, 2020, p.2).

Social Awareness: understanding and empathizing with other perspectives across lines of diversity, adapting to and knowing the role cultural contexts play in various social settings, and recognizing the importance of family and community resources (CASEL, 2020, p.2).

Self-Management: accomplishing goals through managing emotions, thoughts, and behaviors in diverse circumstances. Having capability to delay gratification, utilize coping skills when stressed, and holding a sense of personal agency and motivation (CASEL, 2020, p.2).

Relationship Skills: Creating and preserving supportive relationships, navigating situations with others across lines of diversity. Using active listening and assertive communication skills, settle conflict positively, and contributing as a helper in times of need (CASEL, 2020, p.2).

Responsible Decision-Making: Making thoughtful and positive choices in various situations, considering choices in the context of personal, community, and broader well-being (CASEL, 2020, p.2).

Regarding the universality of SEL competencies, research indicates the significant impact of cultural influences, including immigrant status, race or ethnicity, socioeconomic status, gender, among others (Chen, 2009). It is unclear if the CASEL competencies are correspondingly equal from culture to culture, or if competencies are similar across cultures but are different in their structure and purpose; however, it is theorized that “the competencies have universal utility even if they are often defined (structured), expressed (processed), and achieved (functional) differently across cultures (Hecht and Shin, 2015, p. 58).”

How does Social Emotional Learning Occur?

CASEL conceptualizes SEL 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 (CASEL, 2009, para. 1).” The SEL process seeks to develop skills in youth that reduce risk factors and promote protective factors (Durlak et al., 2011, p. 406) and is grounded in Waters and Sroufe’s (1983) description of individual competency as those who are able “to generate and coordinate flexible, adaptive responses to demands and to generate and capitalize on opportunities in the environment” (p. 80). Because executive functioning (self-control and self-regulation) can be taught and interventions that improve executive functioning in youth may play a role in reducing gaps in achievement (Diamond & Lee, 2011), development of these competencies through SEL is thought to improve academic outcomes, increase positive social behaviors, decrease misbehaviors, and improve emotional regulation (Greenberg et al., 2003) in the short term. In the long term, this process is theorized to change an individual from feeling controlled by external factors towards an internal sense of self-management (Durlak et al., 2011, p. 406).

A number of curricula and procedures are effective in fostering SEL competency growth (Jones et al., 2019, p. 132). Research indicates that development of SEL competencies can be facilitated through deep, understanding relationships and experiences and interventions in classroom, schools, families, and communities (CASEL, 2020, p. 3). Cultural context is also an essential aspect of SEL (Bronfenbrenner and Morris, 2006). Most standard models of SEL instruction involve teacher delivery of a lesson to model a specific social or emotional skill, student practice of the skill independently or in small groups, and reinforcement of the concepts through school structures throughout the day (Weissberg et al, 2015, p. 3). Many SEL

interventions or programs also provide students with opportunities to build a sense of belonging by participating as meaningful members of their classroom and/or school community (Hawkins, Smith, and Catalano, 2004), and are designed with developmental level and cultural relevance in mind (CASEL, 2003).

When describing evidence-based interventions, CASEL identifies 4 components of effective SEL practice, signified by the acronym SAFE. Strong SEL program is sequenced, meaning that the activities for skill development are aligned to one another, active, or utilize dynamic multi-modal teaching and learning, focused, or committed to developing both personal and social skills, and explicit, or centering on specific social and emotional skills (CASEL, n.d.).

SEL interventions seek to build beyond student competency development by also supporting teachers to cultivate classroom management strategies that lead to psychological safety and a compassionate and empathetic classroom environment, establishing school-wide community-building events, and building peer-to-peer relationships (Cook et al., 1999; Hawkins et al., 2004; Schaps, Battistich, & Solomon, 2004). While the vast majority of SEL interventions are designed to be universally experienced by students during their school day, many incorporate the family or community and take place outside of a traditional academic setting (Weissberg et al, 2015, p. 3).

Impact of SEL on Student Outcomes

The SEL field has built a robust foundational knowledge of the relationship between social, emotional, and intellectual development and each of their influences on life outcomes over the course of its 30-year history. A growing body of evidence highlights the correlation between youth attainment of social emotional competencies and school outcomes such as

academic performance, school attendance, school attainment, behavioral problems in school, and persistence of antisocial behavior (Black & William, 2010; Moffitt et al., 2011; Joffe & Black, 2012; Raver & Knitzer, 2002; Riglin et al., 2014; Tan et al., 2018).

Supporters of SEL purport that school-wide programming likely impacts both short- and long-term outcomes for students, starting with positive self-attitudes and leading to prosocial behavior, improved academic performance, and increased mental health (Mahoney et al., 2019). Students reach academic success in school when they understand their own identities and can manage their emotions, relate to their peers and attempt to understand the perspective of others, and make appropriate choices for their personal lives and relationships (Weissberg et al., 2019, p. 7). Other short-term positive results of SEL programming include increased self-esteem, confidence, empathy for others, an increase in prosocial interactions with peers and adults, a reduction in risky behaviors, increased ability to tolerate challenging emotions, and improvements in academic and attendance (Durlak et al., 2011). Some SEL interventions have shown efficacy in targeting and addressing adjustment issues in youth (Payton et al., 2008).

Research is limited in longer-term impacts of SEL interventions as most follow-ups on studies are conducted within one year of intervention (Taylor et al., 2017). However, the skills associated with the social and emotional competencies described earlier are essential in improving adult life outcomes including incarceration, marital status, and mental health (Moffitt et al., 2011). Jones et al. conducted a longitudinal study of kindergarten students in 4 low-socioeconomic settings that evaluated associations between social emotional development and life outcomes. At 13-19 years later, the study found statistically significant associations between mastery of social-emotional skills in early development and life outcomes beyond school performance including employment, criminal activity, substance use, and mental health (2015).

Four meta-analyses assessed SEL competency domains as well as other indicators (attitudes, positive social behaviors, conduct problems, emotional distress, and academic performance) (Durlak et al., 2011; Sklad et al., 2012; Taylor et al., 2017; Wigglesworth et al., 2016). Two meta-analyses focused on short-term outcomes and found statistically significant effects, most notably that SEL has as significant an impact on learning outcomes as programs designed to only improve academic outcomes (Durlak et al., 2011; Wigglesworth et al., 2016). Durlak et al. found an 11-percentile point increase in academic performance from SEL interventions that focused on all five of the core competencies (2011). Growth in SEL competencies and skills is positively linked with student ability to meet new nation-wide academic standards via the Common Core curriculum, a set of high-quality academic standards in mathematics and English language arts/literacy (Elias, 2014).

The long-term effects studied in other two meta-analyses determined that while effects diminished over time (Sklad et al., 2012; Taylor et al., 2017) shorter term impact is the strongest indicator for longer term impact in SEL competencies (Mahoney et al., 2019). Results from these studies imply that SEL has significant potential to influence not only the academic and interpersonal outcomes of students in the short-term but also lasting impact in adulthood if social and emotional skills are taught consistently from kindergarten through 12th grade. A 2021 systematic review found evidence that beyond improving noncognitive skills, SEL interventions also provide short-term reductions of mental health symptoms related to anxiety and depression (Clarke et al.).

Evidence indicates that school wide SEL interventions have a universal (school-wide) impact with student populations. Duncan et al.'s 2016 study found that a preventative SEL intervention aimed at impacting positive and negative behaviors in students provided favorable

impact on all participants, no matter the trajectory of the students' behaviors. Universal interventions also provide a public health service in schools by not only supporting as a protective factor that mediates risk for all students (Domitrovich et al., 2017) but also in supporting to identify students who need more intensive services or access to resources outside of the traditional school model (Greenberg et al., 2017).

SEL interventions have the most significant impacts among youth with the highest number of risks and needs, which includes students from low socioeconomic backgrounds or who are academically or behaviorally less developed than their peers (Jones et al., 2019). For most youth, schools are ground zero for socialization. One study found that growth in SEL skills alongside improvements in parent and student report of behavior regulation led to an increase in social interaction competencies (McKown et al., 2009).

SEL Assessment and Measurement

Measuring student academic mastery is an essential piece of the educational systems. Because SEL traditionally occurs in a classroom setting, a variety of assessment measures to monitor student social emotional development growth have emerged. In a 2017 poll of public attitudes toward public schools, Phi Delta Kappan reports that 84% of individuals said that schools should use assessment for student interpersonal skills (2017). The benefits of SEL competency assessment include the creation of normed language to be used between stakeholders in SEL, a deepened understanding of SEL instruction and intervention efficacy, and further knowledge on how youth develop and grow in SEL competencies (Taylor et al., 2018, p. 6). The field may be impeded in evaluating the efficacy of SEL interventions; while researchers have developed a number of SEL assessment measures, there are no standardized criteria for evaluating SEL intervention efficacy at this time (Ura et al., 2020, p. 77).

Unlike the use of assessment related to academics, CASEL advises against the use of any SEL measures for accountability purposes in educational settings as competency assessments are still a relatively new and developing field (Taylor et al., 2018, p. 8) and to mitigate risk of potential fraud as has historically occurred when assessments are tied to state or district accountability systems (Hamilton et al., 2012). The organization also recommends the use of a strength-based approach (centering student resources) as opposed to a diagnostic approach (assessment for student deficits or areas for improvement) (Taylor et al., 2018, p. 7).

Denham (2015) recognizes the importance of developmental processes for youth in assessing SEL competencies, noting that these assessments “must be viewed in terms of key tasks faced by children at each age range from early childhood to adolescence. Assessment tools should acknowledge, at least implicitly, these shifts in developmental focus” (p. 286). At this time all SEL assessment measures are grounded in ratings systems such as self-report, peer-rating, teacher/adult rating (Taylor et al., 2018, p. 8) that may be influenced by bias (Kyllonen, 2012). To mitigate the influence of subjectivity, Denham recommends further refinement to assessment tools in the future that are grounded in theory, are psychometrically sound, and utilize direct observation in context of a youth’s developmental level (p. 297).

State of Social Emotional Learning Today and Effective Implementation

Interest in SEL has significantly increased over the course of the last two decades; families, communities, and schools have championed the need for its inclusion in school curriculum, and policies have been developed with bipartisan support at the local, state, and federal levels related to the development of SEL in youth (Weissberg et al., 2015, p. 3). Illinois became the first state to develop SEL learning standards in 2004 for grades kindergarten through 12 (p. 4). Today, 43 states in the United States have established SEL development standards

(Dusenbury et al., 2015, p. 534). The United States Department of Education has included SEL in their competitive grant funding opportunities, and in 2015 Congressman Tim Ryan introduced H.R. 850: Academic Social, and Emotional Learning Act of 2015 to provide SEL professional development for teachers and leaders (Weissberg et al., 2015, p. 10).

CASEL has partnered with 20 US school districts (1.7 million students) to integrate SEL into existing school structures since 2004 (CASEL, 2019), and thousands of schools around the world currently implement SEL programming (Mahoney et al., 2019). Teachers respond positively to the inclusion of SEL into schools but share that the success of these interventions rely heavily on the advocacy of school and district leaders, policies regarding implementation, and community support (Bridgeland et al., 2013; Merrell & Guelder, 2010). Effective programming in individual classrooms and at the school-wide level have the highest potential for success when they are named as priorities across a coalition of stakeholders from district leaders to school boards, and teachers' unions (Mart et al., 2015). As interest expands in SEL from parents, educators, leaders in education, and with legislators, CASEL continues to pursue efforts in improving and constructing additional approaches to evaluating SEL competencies. (Jones et al., 2019, p. 129).

Far too often, efforts to implement SEL practices are clumsy and disjointed (Shriver and Weissberg, 1996). Districts and schools will need to remain coordinated and unified in creating the infrastructure needed to implement cross-functionally effective SEL programming. Weissberg et al. contend that the most effective systemic coordination of SEL programming includes a shared vision of SEL for all students, an assessment of currently existing SEL practice strengths, the creation of a centralized team, staffing structures, and infrastructure that provide SEL professional development, the implementation of district-wide SEL standards and an

evidence-based SEL program, the infusion of SEL practices into essential school operating mechanisms, and ongoing assessment of program effectiveness (2015, p. 11).

Diverse Populations and SEL

An investigation into the diversity of samples in SEL studies found that almost one third of studies did not report race/ethnicity or socioeconomic status. The researchers questioned the universalization of effectiveness for diverse populations, noting, “Overall, then, our assessment of what we know about the generalizability of this SEL meta-analysis and its findings with specific reference to diversity is that we know very little” (Rowe et al., 2018, p. 574). Taylor et al.’s metaanalysis of SEL studies found that 51 of 82 interventions noted the socioeconomic status of the population studied, with just 26 reporting the percentage of students from low SES households (Taylor et al., 2017, p. 1160). The lack of clear reporting on diversity in the data leads to questions as to whether SEL interventions can be considered evidence-based practices for diverse populations. While cultural adjustments or modifications are advised as it relates to preventative interventions such as SEL, no such framework or methodology on how to adapt SEL curricula as it relates to matters of diverse populations currently exists (Hecht and Shin, 2015).

This study explores various socio-cultural and demographic variables and their relationship to SEL competency growth. One of the demographic groups studied is English language learners (ELLs), or students whose native language is not English. As of the 2014-2015 academic year, ELLs made up about 10% of the total students in K-12 schools in the United States, and approximately 75% were Hispanic or Latino (United States Department of Education, n.d.). While research is limited for SEL interventions and competency growth in ELL students, a qualitative study of teacher perspectives for SEL with ELL students found that teachers

identified social awareness and relationship skills as important for development, and that their view of their ELL student SEL needs were largely deficit-based (Cho et al., 2019). Studies into the SEL interventions for Latino immigrant students found that the interventions were effective (Brown et al., 2012), and that the inclusion of cultural adaptations to already existing curricula resulted in increased SEL knowledge (Castro-Olivo & Merrell, 2012, Castro-Olivo, 2014); another SEL adaptation study with an ELL classroom found CASEL's framework applicable to SEL development with ELL students, but stressed the importance of strong assessment of ELL student needs alongside collaboration with school leadership and instructional staff (Kao, 2017).

Enrollment in special education is another demographic group that is essential to the educational landscape and part of this study. The Individual with Disabilities Education Act (IDEA) guarantees a “free appropriate public education” to students with disabilities. As of the 2020-2021 academic year, approximately 7.5 million students receive special education services through IDEA (United States Department of Education, n.d.). While research is limited into explicit relationships between enrollment in special education and SEL competency development, one study of SEL program implementation and its relationship to retention found that low-income kindergarten students participating in the SEL intervention were less likely to receive special education services by the time they aged to fifth grade (McCormick et al., 2019). A systematic review of eleven studies on social emotional learning interventions with students enrolled in special education found evidence to support the efficacy of SEL interventions for this population (Hassani & Schwab, 2021).

Given disparities in academic performance between low-income minority students and their affluent peers (National Center for Education Statistics, 2019), the limited research on SEL development and interventions with ELLs and students enrolled in special education, and the

potential impact of SEL on academic performance and life outcomes for students from a variety of socio-cultural and demographic backgrounds, this topic deserves further exploration. Living in poverty increases a youth's risk of limiting social-emotional skills and mental health (McCoy et., 2018; Sibley et al., 2019). Because of SEL curricula's demonstrated impact in academic performance and life outcomes and the expressed need for additional research as it relates to diverse student populations, this research study seeks to explore relationships between student-level demographic data and social emotional learning competency growth.

Adolescent Development

One of this study's questions explores the relationship between student age and SEL competency rate of growth. While SEL competency growth rates by age have not been previously studied, an understanding of adolescent social and emotional development is crucial in investigating this topic. Youth entering into early adolescence begin a significant developmental phase of life that includes dramatic physical, social, and mental changes. These youth navigate a complexity of challenges and opportunities in the shift from elementary school to middle school, including emotional and behavioral issues, decreases in self-esteem and connection to school, and increases in anxiety and depression (Steinberg, 2017). Adolescent youth grow in the awareness of both their own feelings and those of others, and experiment with their independence while also navigating their own levels of confidence (U.S. Department of Health & Human Services, n.d., para 1).

The adolescent brain's plasticity comes second only to that of an infant's (Steinberg, 2017), and its growth continues well through the teen years (Paus, 2005). The brain structures in the prefrontal cortex associated with emotional and behavioral regulation, calibration of risk and reward, and the ability to inhibit responses to distractions make significant development from

early adolescence through the late teen years (Steinberg, 2005, p. 69). These maturation processes occur at a disproportionately slower rate to puberty's biological processes that impact stimulation and motivation. It is hypothesized that the disparity between these developments may increase a youth's susceptibility to challenges with behavioral issues, affect regulation, and increased risk-taking in middle adolescence. As summarized by adolescent development expert Laurence Steinberg, "the developments of early adolescence may well create a situation in which one is starting an engine without yet having a skilled driver behind the wheel (2005, p. 70)."

While the roles of puberty onset and brain development are unequivocally associated with adolescent social and emotional development, peers and social stimuli also play a significant role in shaping teen behaviors. Teens are more likely to use substances (Chassin et al., 2004) or become sexually active (DiBlasio & Benda, 1992; East, Felice, & Morgan, 1993; Udry, 1987) when their peers engage in these activities. Steinberg's study into this topic affirmed an association between peer presence, the activation of a neural socio-emotional network in the brain, and engagement into risky behavior (2017). Navigating adolescence is no small feat, however there is hope. As the frontal lobes mature, individuals develop regulatory competence (Steinberg, 2005, p. 70) and emerge into young adulthood with a "more fully conscious, self-directed, and self-regulating mind (Keating, 2004)."

Summary of Literature

Social emotional learning (SEL) has been studied for over 50 years as a response to the need for "whole child" supports. Developed as a formal framework in the early 1990s, SEL is a process in which both children and adults develop the skills needed to identify and manage their emotions, relate to others and build relationships, create and achieve goals, and engage in responsible decision making. The literature suggests a strong relationship between social

emotional competency development and school outcomes including academic achievement, school engagement, and prosocial behaviors. Beyond benefits in the academic setting, longitudinal studies indicate associations between SEL competency development and longer-term benefits such as increased mental health, securing employment, and reductions in substance use and criminal activity.

Most SEL interventions occur in the school setting and occur through direct instruction and student practice of SEL skills to build efficacy in these competencies. Interest in SEL has significantly increased over the course of the last two decades; today, 43 states in the United States have established SEL development standards. While researchers have developed a variety of assessment measures to monitor student SEL competency development, there is no standardized SEL assessment at this time.

SEL competency growth rates by age have not been previously studied. This study explores SEL development in students between ages 12 and 19, when the adolescent brain's plasticity comes second to an infant brain. Brain maturation processes during this period are hypothesized to occur at a disproportionately slower rate to puberty's biological processes and may increase a youth's susceptibility to challenges with behavioral issues, affect regulation, and increased risk-taking. Peers and social stimuli also play a significant role in shaping adolescent behaviors.

Past research in SEL competencies has inconsistently reported demographic data for students and indicates a need for further study into SEL competencies and SEL development with diverse populations; almost one third of studies did not report race/ethnicity or socioeconomic status. Additionally, national data indicates an increasing gap in academic performance between low-income minority students and their affluent peers. Research is limited on the impact of SEL

interventions with ELL students and students enrolled in special education, but some evidence suggests its efficacy.

The scope of literature regarding the benefits of SEL and gaps in reporting demographic data for SEL interventions and competencies indicate a need to explore SEL development with diverse populations further. To better understand SEL competency development and its relationship to diverse populations, this study examines the following questions: To what extent do student demographic and socio-cultural characteristics (gender, age, enrollment in special education, English language learner status, free/reduced lunch status) relate to social emotional learning competency growth? In what way does a student's grade level relate to their rate of social emotional learning competency growth?

Chapter 3: Research Design and Methods

Design

This study examined the association of SEL competency growth with student demographic and socio-cultural characteristics. The study utilized secondary data shared by a charter school network via a data sharing agreement that includes student responses to a series of 45 prompts on the Panorama SEL survey (Appendix A), and de-identified individual demographic data of participants for both Fall 2021 and Spring 2022 administrations. Students completed the survey as part of standard in-district practices to regularly assess student social emotional learning competencies and student perceptions on school culture and climate, teacher relationships, and sense of belonging. The data obtained via these surveys is analyzed by district and school leaders to better understand student perspectives and to inform the design of school-wide interventions and potential efficacy of social emotional learning interventions.

Setting

The study was conducted using data from students attending a large charter school network located across 4 states. The network operated over 130 schools and served approximately 76,000 students across grades pre-k through 12 at the time of study. The network reports that over the last 15 consecutive years, 100% of seniors who graduated from the charter school network have been accepted to college.

Sample Size, Method, and Recruitment Procedures

This study utilized data collected by the Panorama Social Emotional Learning survey from students in grades 6 through 12 attending a large charter school network in Texas. The school district collects student level data twice a year as standard practice to assess student SEL

competencies. Students complete the survey virtually via a survey format. The school district sends guardians of all students a letter to inform them of the survey with the ability to opt out of participation (Appendix B). If parents complete the opt out form, the students are not asked to complete the survey. Additionally, the district does not require that students complete the survey and provides students the option to read a book or complete an alternative assignment if they do not want to participate.

The Protection of Pupil Rights Amendment (PPRA) provides guidance on topics that require parental consent prior to student permission (U.S. Department of Education, 2020). The scope of questions asked in the Panorama Social Emotional Survey do not relate to any of the eight “protected area” as laid out in the PPRA document, therefore researcher is not required to seek parental consent in student survey completion. Per guidance and reflections from Plummer et al. in their 2015 paper *A Behind-the-Scenes Guide to School-Based Research*, school counselor sends letters to parents of students describing the study with a message that not returning the letter or otherwise contacting the school implies parental consent (Appendix B) and follows up with an automated phone message reiterating the contents of the letter to provide two notification points for parents to imply consent.

Retention, Subject Payments, Tracking Procedures

Subjects are not paid to participate in the survey as this is a standard assessment procedure for the school district. Because students take the survey twice a year, attrition is expected.

Human Subjects

Given the unique nature of the school setting in research, consultation with state and federal guidelines related to human subjects and youth are imperative in ensuring protection of study participants. This secondary data analysis study does not have access to personally identifiable information (PII), as the data set generated had values of study variables without the identifying information of individual students.

Data on Refusers and Drop-Outs

Because this study was conducted at the beginning and end year, some students did not participate in either the start or end of the year. Data was only utilized by students who completed both surveys.

Measures

Data source includes student composite scores from the Panorama Social Emotional Learning Survey from all students collected. Student demographic and attendance measures were collected via PowerSchool attendance record.

Independent Variables

The following independent variables were studied for students in grades 6-12 who participated in both Panorama survey administrations for the 2021-2022 school year: age, free/reduced lunch status. The variables and their definitions are listed in the “Independent variable names and definitions” table.

Table 3.1. Independent variable names and definitions

Variable name	Definition
Student age	Age in years
Student sex	1=female, 2=male
Special education enrollment	1= enrolled in special education, 0=no
Free/reduced lunch status	1=Qualifies for free or reduced lunch, 0=no
English language learner status	1 = English language learner, 0=no
Student Grade Level	Grade level in which student is enrolled 6=6 th grade, 7=7 th grade, 8=8 th grade, 9=9 th grade, 10=10 th grade, 11=11 th grade, 12=12 th grade

Dependent Variable

Student self-Report of SEL competencies is measured by student's composite score upon completion of the Panorama Social Emotional Learning Assessment. The Panorama SEL survey measures were designed by researchers and experts in the field, and aligned to the CASEL framework (Panorama Education, n.d.). Students responded to 45 prompts in completing the assessment. The questions and response options are noted in Appendix A. The survey provides an average composite score for the following dimensions: self-management, social awareness, and emotion regulation (Panorama Education, 2019, p. 6).

Table 3.2. Student level measures and definitions

Student level measure: Self-Management	How well students manage their emotions, thoughts, and behaviors in different situations. Student responses in likert scale format to 10 questions in the self-management competency.
Student level measure: Social Awareness	How well students consider the perspectives of others and empathize with them. Student responses in likert scale format to 8 questions in the social awareness competency.
Student level measure: Emotion Regulation	How well students regulate their emotions. Student responses in likert scale format to 6 questions in the emotion regulation competency.

Each of the three Panorama SEL measures assessed with students aligns to two CASEL framework competencies. The measures assessed by the survey and their alignment to the CASEL framework competencies are listed in the “Panorama SEL measure and CASEL framework alignment” table below (Panorama Education, n.d.).

Table 3.3. Panorama SEL measure and CASEL framework alignment

Panorama SEL measure	CASEL framework competencies
Self-management	Self-management Responsible decision-making
Social awareness	Social awareness Responsible decision-making
Emotion regulation	Social Awareness Responsible decision-making

All topics covered in the survey meet or exceed sufficiency threshold of .70 through reliability assessment using Cronbach’s alpha. Panorama Education, the developer of the open-source SEL survey, conducted confirmatory factor analyses to evaluate the structural validity of each survey topic (if each topic measured only one dimension as opposed to many). A value of 1 is the maximum that each topic can receive and would indicate that the topic fits a “one dimensional solution” (Panorama Education, 2020, p. 11), while .90 is considered adequate and .95 is ideal. The analyses found that all but one topic covered (self-management) met the preferred threshold of .95 or above (Panorama Education, 2020, p. 11).

Data Preparation

The Research and Analysis Team at the charter school network linked individual student identification numbers with student demographic data, school level data, and SEL survey responses and in the school data district system. The data was shared in excel spreadsheet format and imported into IBM SPSS Statistics version 28.

Data Analysis Strategy

To describe the sample as a whole, Means, SD, and Minimum and Maximum scores were calculated for all continuous variables (age, fall self-management, fall emotion regulation, fall social awareness, spring self-management, spring emotion regulation, spring social awareness, and attendance). Frequencies were calculated for the number and percent of students in each of the following categories: gender, race and ethnicity, enrolled in special education, enrolled in free/reduced lunch, English language learning status, grade level, attendance of over/under 90%.

Multiple regression analysis and One-way Analysis of Variance (ANOVA) tests were used to answer the research questions. Three regression models were tested with three measures of SEL competencies as dependent variables, demographic characteristics as independent variables, and Fall scores included as control variables:

1. $\text{SpringSelfManage} = \text{Age} + \text{Gender} + \text{SpecEd} + \text{LunchStatus} + \text{ELL} + \text{Fall Self-Manage}$
2. $\text{SpringEmoReg} = \text{Age} + \text{Gender} + \text{SpecEd} + \text{ELL} + \text{LunchStatus} + \text{Fall EmoReg}$
3. $\text{SpringSocialAware} = \text{Age} + \text{Gender} + \text{SpecEd} + \text{LunchStatus} + \text{ELL} + \text{Fall SocialAware}$

Average SEL competency scores were compared across the seven grade levels using three ANOVA tests, one for each dependent variable: self-management, emotion regulation, and social awareness.

Chapter 4: Results

A total of $N=11294$ students participated in the study, of which slightly over half identified as female ($n=5833$, 52%), 86% identified as Hispanic ($n=9739$), and almost half were in the 6th or 7th grade ($n=5429$, 48.1%). A large number of students received free or reduced lunch ($n=9218$, 81.6%), and a small percentage of the sample was enrolled in special education ($n=832$, 7.4%). Almost 40% ($n=4271$) were English language Learners and approximately 78% ($n=8778$) had an average attendance rate of 90% or above. See Table 4.1 for additional detail.

Table 4.1.*Demographic Characteristics of Sample at Time 1 (Fall)*

		N	%
Gender	Female	5833	51.6
	Male	5461	48.4
Race	Asian/PI	123	1.1
	Black	887	7.9
	Hispanic	9739	86.2
	White	505	4.5
	Other	40	0.4
Grade Level	6	2842	25.2
	7	2587	22.9
	8	1637	14.5
	9	1583	14.0
	10	1440	12.8
	11	747	6.6
Receives Free/Reduced Lunch	No	2076	18.4
	Yes	9218	81.6
Enrolled in special education	No	10462	92.6
	Yes	832	7.4
English language learner	No	7023	62.2
	Yes	4271	37.8
Attendance 90% or above	No	2516	22.3
	Yes	8778	77.7

The average age of the sample at time 1 (Fall 2021) was 13.74 and ranged from age 11 to age 20. On a scale from 0 to 4, the average self-management score at time 1 was 3.07, the average emotion regulation score was 2.65, and the average social awareness score was 2.65. On a scale 0 to 4, the average self-management score at time 2 (Spring 2022) was 2.98, the average emotion regulation score was 2.87, and the average social awareness score was 2.61. The average attendance rate for the school year was 93%. See table 4.2 for additional detail.

Table 4.2

Descriptive Statistics for Continuous Variables at Time 1 (Fall 2021) and Time 2 (Spring 2022)

	Fall				Spring			
	Mean	SD	Min	Max	Mean	SD	Min	Max
Age	13.74	2.00	11	20				
Self management	3.07	0.62	0	4	2.98	0.69	0	4
Emotion regulation	2.39	0.86	0	4	2.87	1.08	0	4
Social awareness	2.65	0.68	0	4	2.61	0.73	0	4
Percent Attendance	93.11	5.89	42.60	100				

Research Question 1: To what extent do student demographic and socio-cultural characteristics (gender, age, enrollment in special education, English language learner status, free/reduced lunch status) relate to social emotional learning competency growth?

As shown in Table 4.3, the combination of variables in the first regression model explained 27% of the variance in spring self-management [$R^2=0.27$, $F(5, 11287) = 708.38$, $p<0.001$]. Age, enrollment in special education, and receiving free or reduced lunch were all significant predictors of spring self-management score when controlling for fall self-management score. For every additional year in age, spring self-management score increased by 0.02 of a

point ($B=0.02$, $p<0.001$). Students who were enrolled in special education scored, on average, 0.04 of a point lower on self-management in the spring than students who were not ($B=-0.04$, $p=0.04$). Students who were enrolled in free or reduced lunch scored, on average, 0.04 of a point lower on spring self-management than students who were not ($B=-0.04$, $p=0.02$).

Table 4.3

Multiple Regression Analysis of Self-Management at Time 2 (Spring)

	B	SE	B	t-value	p-value
(Constant)	0.99	0.05		18.53	<0.001
Age	0.02	0.00	0.05	6.10	<0.001
Binary Gender	-0.02	0.01	-0.01	-1.71	0.09
Enrolled in Special Education	-0.04	0.02	-0.02	-2.02	0.04
Free/Reduced Lunch	-0.04	0.01	-0.02	-2.42	0.02
English Language Learner	0.01	0.01	0.01	0.68	0.49
Self-Manage Fall Score	0.57	0.01	0.52	63.50	<0.001
$R^2=0.27$; $F(5, 11287)=708.38$, $p<0.001$					

As shown in Table 4.4, the combination of variables in the second regression model explained 32% of the variance in spring emotion regulation [$R^2=0.32$, $F(5, 11286) = 896.94$, $p<0.001$]. Age, gender, and enrollment in special education were all significant predictors of spring emotion regulation score when controlling for fall emotion regulation score. For every additional year in age, spring emotion regulation score increased by 0.05 of a point ($B=0.05$, $p<0.001$). Students who identified as male scored, on average, appropriate one quarter of a point higher on spring emotion regulation than students who identified as female ($B=0.24$, $p<0.001$). Students who were enrolled in special education scored, on average, 0.04 of a point lower on spring emotion regulation than students who were not ($B=-0.04$, $p=0.04$).

Table 4.4

Multiple Regression Analysis of Emotion Regulation at Time 2 (Spring)

	B	SE	B	t-value	p-value
(Constant)	0.52	0.07		7.34	<0.001
Age	0.05	0.00	0.08	10.26	<0.001
Binary Gender	0.24	0.02	0.11	14.22	<0.001
Enrolled in Special Education	-0.07	0.03	-0.02	-2.05	0.04
Free/Reduced Lunch	-0.04	0.02	-0.01	-1.70	0.09
English Language Learner	0.03	0.02	0.01	1.80	0.07
Emotion Regulation Fall Score	0.66	0.01	0.52	66.38	<0.001
$R^2=0.32$; $F(5, 11286)=896.94$ $p<0.001$					

As shown in Table 4.5, the combination of variables in the third regression model explained 29% of the variance in spring social awareness [$R^2=0.29$, $F(5, 11286) = 755.89$, $p<0.001$]. Age and English language learning status were both significant predictors of spring social awareness when controlling for fall social awareness score. For every additional year in age, spring social awareness score increased by 0.02 of a point ($B=0.02$, $p<0.001$). Students who

were English language learners scored, on average, 0.05 of a point higher on spring social awareness than students who were not ($B=0.05$, $p<0.001$).

Table 4.5

Multiple Regression Analysis of Social Awareness at Time 2 (Spring)

	B	SE	<i>B</i>	t-value	p-value
(Constant)	0.78	0.05		14.78	<0.001
Age	0.02	0.00	0.06	7.28	<0.001
Binary Gender	0.00	0.01	0.00	-0.28	0.78
Enrolled in Special Education	-0.02	0.02	-0.01	-1.09	0.28
Free/Reduced Lunch	-0.03	0.02	-0.01	-1.80	0.07
English Language Learner	0.05	0.01	0.04	4.33	<0.001
Social Awareness Fall Score	0.57	0.01	0.53	66.15	<0.001
$R^2=0.29$; $F(5, 11286)=755.89$, $p<0.001$					

Research Question 2: In what way does a student’s grade level relate to their rate of social emotional learning competency growth?

As shown in Table 4.6, overall differences were found at Time 2 (Spring) among grade levels on self-management [$F(6, 11287)=8.94$, $p<0.001$], emotion regulation [$F(6, 11286)=9.31$, $p<0.001$], and social awareness [$F(6, 11286)=5.07$, $p<0.001$].

Table 4.6*Analysis of Variance of Dependent Variables at Time 2 (Spring) by Grade Level*

		Sum of Squares	df	Mean Square	F-value	p-value
Self-Management	Between Groups	22.12	6	3.69	8.94	<0.001
	Within Groups	4652.07	11287	0.41		
	Total	4674.18	11293			
Emotion Regulation	Between Groups	49.33	6	8.22	9.31	<0.001
	Within Groups	9970.86	11286	0.88		
	Total	10020.19	11292			
Social Awareness	Between Groups	14.21	6	2.37	5.07	<0.001
	Within Groups	5272.43	11286	0.47		
	Total	5286.63	11292			

Students in grade 6 scored significantly lower on emotion regulation than students in grades 9-12 and scored significantly lower on social awareness than students in grade 11. Students in grade 7 scored significantly lower on self-management than students in grades 6, 9, 10 and 11; scored significantly lower on emotion regulation than students in grades 9-12; and scored significantly lower on social awareness than students in grades 9-11. Students in grade 8 scored significantly lower on self-management than students in grade 9 and 10 and scored significantly lower on emotion regulation than students in grades 9-12. See table 4.7 for additional detail.

Table 4.7***Bonferroni Adjusted Significant Differences Among Grade Levels***

Scale	Grade Level	Grade Level	Mean Difference	SE	p-value	
Self Management	7	6	-0.06	0.02	0.01	
		9	-0.11	0.02	<0.001	
		10	-0.12	0.02	<0.001	
		11	-0.12	0.03	<0.001	
	8	9	-0.08	0.02	0.02	
		10	-0.08	0.02	0.01	
	Emotion Regulation	6	9	-0.13	0.03	<0.001
			10	-0.15	0.03	<0.001
11			-0.15	0.04	<0.001	
12			-0.17	0.05	0.01	
7		9	-0.12	0.03	<0.001	
		10	-0.14	0.03	<0.001	
		11	-0.14	0.04	0.01	
		12	-0.15	0.05	0.03	
8		9	-0.11	0.03	0.01	
		10	-0.13	0.03	<0.001	
		11	-0.13	0.04	0.04	
		12	-0.15	0.05	0.07	
Social Awareness	6	11	-0.09	0.03	0.03	
		9	-0.08	0.02	0.01	
	7	10	-0.08	0.02	0.01	
		11	-0.11	0.03	<0.001	

Chapter 5: Discussion and Conclusions

Question 1:

To what extent do student demographic and socio-cultural characteristics (gender, age, enrollment in special education, English Language Learner status, free/reduced lunch status) relate to social emotional learning competency growth?

This study's findings contribute to the knowledge base of SEL competency development for diverse populations across a variety of measures. In the study sample, over 95% of students identify as a race other than White, 82% met criteria to receive free or reduced lunch, and more than a third identify as English language learners. The diversity of this sample regarding race/ethnicity and socioeconomic status is significant given the substantial gaps in reporting data from previous SEL studies (Rowe et al., 2018, Taylor et al., 2017). The findings from this study as related to diversity are of particular importance given the disparities in academic performance between low-income minority students and their affluent peers (National Center for Education Statistics, 2019), the link between SEL competency development and student academic performance, attendance, and behavioral problems (Benson, 2006, Black & William, 2010; Moffitt et al., 2011; Joffe & Black, 2012; Raver & Knitzer, 2002; Riglin et al., 2014; Tan et al., 2018), and the risk factor that living in poverty increases a youth's risk of limiting social-emotional skills and mental health (McCoy et., 2018; Sibley et al., 2019).

This study identified associations between the SEL competencies assessed (self-management, emotion regulation, and social awareness) and student demographic/socio-cultural characteristics, described in detail later in this chapter. Positive associations were found between all 3 competencies and age, negative associations were found between enrollment in special

education and self-management as well as emotion regulation growth, a negative association was found between enrollment in free or reduced lunch and self-management growth, a positive association was found between students who identified as male and emotion regulation growth, and a positive association was found between student English learner status and social awareness. As evidence suggests that SEL interventions and adaptations are effective with students across socio-cultural and demographic backgrounds (Brown et al., 2012, Castro-Olivo & Merrell, 2012, Castro-Olivo, 2014, Hassani & Schwab, 2021, Kao, 2017), the data from this study can inform future SEL research and interventions with diverse populations as described later in this chapter.

Age and SEL Measurement Growth

Positive associations were found between age and growth in all 3 of the SEL measurements assessed (self-management, emotion regulation, and social awareness). When controlling for the fall competency scores, with each additional year in age, self-management scores increased by 0.02 points (0.5%), emotion regulation increased by 0.05 (1.25%), and social awareness increased by 0.02 points (0.5%). Although growth is consistently relatively small across the three domains, the relationship between this development and student age is not surprising. Our findings regarding age and SEL scores are consistent with current understandings of adolescent brain plasticity and frontal lobe maturation. These brain structures are associated directly with SEL competencies such as emotion regulation and response inhibition (Steinberg, 2005) and the development of regulatory competence (Steinberg, 2005). Given the prior research on the significant relationship between peer influence and adolescent development (Chassin et al., 2004, DiBlasio & Benda, 1992; East, Felice, & Morgan, 1993; Udry, 1987), the relationship between age and SEL growth might be explained by the role of peer influence in increasing SEL

as students age. As youth mature and the influence of their peers grows, so does their ability to consider the perspectives of others and empathize with them.

Enrollment in Special Education and SEL Measurement Growth

Negative associations were found between enrollment in special education and the SEL measures of self-management and emotion regulation growth. These students represent 7.4% of the study sample. This study did not explore individual diagnostic and Individual Education Plan (IEP) information for each student, and each student receives different school-based academic and behavioral support as a result of their diagnosed disability and plans. This study found that when controlling for the fall emotion regulation and self-management scores, students who were enrolled in special education scored, on average, 0.04 points (1%) lower in both self-management and emotion regulation competencies in the spring than students who were not. SEL interventions have been determined as effective with this population (Hassani & Schwab, 2021), and one study found that low-income kindergarten students participating in the SEL intervention were less likely to receive special education services by the time they aged to fifth grade (McCormick et al., 2019). Given the wide variety of disabilities associated with enrollment in special education, the gaps in self-management and emotion regulation may be associated with the developmental delays and disabilities that qualified students for their special education status.

No significant relationship was found between enrollment in special education and social awareness. This may be explained by the socially inclusive nature of the school setting. No matter what accommodations a student receives, they still participate as active members of classroom communities, navigate relationships and conflict with peers and school staff, and communicate needs to receive support.

Enrollment in Free or Reduced Lunch and SEL Measurement Growth

A negative association was found between enrollment in free or reduced lunch and self-management growth. When controlling for the fall self-management score, students enrolled in free or reduced lunch scored, on average, 0.04 of a point (1%) lower in this competency than their non-enrolled peers. Students in Texas from families with incomes at or below 130 percent of the Federal poverty level qualify for enrollment in free lunch, and those from families with incomes between 130 and 185 percent of the Federal poverty level may enroll in programming for reduced price meals (Benefits.gov, 2022). 81.6% of students studied were enrolled in this program, representing an overwhelming majority. This result is consistent with research into disparities in academic performance between low-income minority students and their affluent peers (National Center for Education Statistics, 2019) and the risk of limited social emotional skill development for youth living in poverty (McCoy et., 2018; Sibley et al., 2019). However, no significant associations were found between this demographic status and the emotion regulation and social awareness competencies.

Gender and Emotion Regulation:

A positive association was found between students who identified as male and emotion regulation growth. When controlling for the fall emotion regulation score, students who identified as male scored, on average, about one quarter of a point (or 6%) higher on spring emotion regulation than students who identified as female. This represents the highest percent difference in scoring between groups where statistically significant results were found. The internalization of gender stereotypes and expectations, cultural narratives regarding gender and adolescence, and popular media may play a role in these results. Boys and young men are often portrayed or understood as not in control of their emotional regulation, yet these same

institutions also position boys as “natural” leaders, encourage risk-taking, and promote independence at an early age. Career paths for boys and young men include leadership and managerial roles. Potentially, these cultural narratives which in turn impact the school setting may result in inflated senses of emotional competence and mastery in adolescents.

Society portrays contrasting messages for girls and young women. While girls and young women are often portrayed as highly aware of and in control of their emotions, cultural narratives and institutions send messages that promote following the leadership of others, collectivism, and caregiving. Suggested career paths for girls and young women include roles that provide for others such as teaching or nursing. The awareness of one’s own emotions and attentiveness to the emotions of others may have led this population indicate a deflated sense of emotional competence and mastery.

English Language Learner Status and Social Awareness:

A positive association was found between students’ English learner status and the social awareness measure. When controlling for the fall social awareness competency score, English language learning students scored, on average, 0.05 of a point (1.25%) higher on spring social awareness than students who were not. The data shows that this population represents 37.8% of the sample at large, and that 96.2% of the English language learners in this sample are Hispanic students.

Since these students come from predominately Hispanic homes that speak Spanish as the family’s first language, it is likely that these students develop skills to connect with others and navigate across cultures as they attend English speaking schools. This may accelerate a student’s ability to seek to understand the perspectives of others and empathize with them. Students

spending the majority of their waking weekdays in a setting that uses English as a first language may lead them to a sensitivity to the perspectives of others, an awareness of differences between this population and the general population of the school, and the development of a skill set to explain their own needs while also remaining attuned to the needs of others. ELL students may feel a sense of urgency around developing this skill set as compared to their peers in order to build social networks and connections. This data point stands in contrast to the deficit-based perspective of ELL teachers who noted that this population needed development in social awareness and relationship skills (Cho et al., 2019).

Question 2:

In what way does a student's grade level relate to their rate of social emotional learning competency growth?

All statistically significant differences related to lower scores in competencies for middle school students as compared to high school students across all three domains, although for different competencies. Students in grade 6, 7, and 8 scored significantly lower on emotion regulation than students in grades 9-12. Students in 7th grade scored significantly lower in self-management than students in 6th grade and almost all high school grades, as well as social awareness when compared to students in grades 9-11. Students in 8th grade scored lower in self-management than students in grades 9 and 10.

These results are consistent with the literature regarding the onset of puberty co-occurring with brain development. Brain maturation processes occur at a disproportionately slower rate to puberty's biological processes, and this disparity may increase a youth's susceptibility to a variety of behavioral and emotional challenges in middle adolescence (Steinberg, 2005). The

emotion regulation data most clearly aligns with current understandings of adolescent development as the prefrontal cortex is associated with emotional and behavioral calibration in early adolescence, or the middle school years.

The data related to 7th grade student competency growth as compared to all other peer groups is of particular interest; this grade level scored statistically lower than between 3 to 4 other grade levels, depending on the competency assessed, and below their younger 6th grade peers in the self-management competency. There is no specific literature that would suggest students in this grade have unique experiences as compared to other middle school students. However, more students in this grade level may generally be between ages 12 and 13 and at a heightened susceptibility for risk factors associated with the start of biological puberty compared with their younger 6th grade peers who may only be beginning or not yet started biological puberty process, or their 8th grade peers whose brain and biological processes may now have caught up to one another.

Limitations

These findings are limited because they are based on survey data from students who completed both surveys. This study did not explore the data of non-completers, students who did not take the survey at all, or students who only completed one of the two assessments, making the representation of the sample a limitation. While the school district has adopted a district wide SEL curriculum, it is used inconsistently across and within schools. There is limited understanding in the role that explicit SEL instruction may or may not have played in student SEL competency growth or diminishment.

This study did not explore the classroom conditions that may have played a role in the student experience when completing the fall and spring assessments. A number of factors may have influenced student engagement with the survey, including (but not limited to) the time of day that students took the assessment (e.g., in the morning, after lunch, at the end of the school day), whether the assessment followed academically challenging materials or other assessments during the school day, the day of the week that the survey was administered, or teacher fidelity to the delivery of the survey instructions. The current educational climate that includes multiple rounds of high-stakes testing may also have led students to experience survey “fatigue.”

While the emotion regulation and social awareness measures met thresholds in a structural validity analysis of the Panorama SEL survey, it was determined through a confirmatory factor analysis that the “self-management” competency was close to a sufficient comparative fit index (CFI) of .90 but did not meet the preferred threshold of .95 or above (0.89). This competency also failed to meet the root mean square error of approximation of 0.08 (0.09). The analysis notes the “self-management” competency missed these thresholds “marginally,” implying that the failure was just short of preferred thresholds but not of great concern from the analysis. The analysis also notes that this competency has the largest number of questions associated with it (Panorama Education, 2020, p. 11).

This study is limited in the number of competencies measured. CASEL identifies five interrelated core skills, habits, and mindsets as Social Emotional Competencies (the “CASEL 5”) that fall under the umbrella of SEL and “provide a foundation to navigate school and life successfully” (Weissberg et al., 2015, p. 6). These five core SEL competencies include “self-awareness,” “social awareness,” “self-management,” “relationship skills,” and “responsible decision-making (CASEL, 2020).” While this study explored the relationship between socio-

cultural/demographic data and SEL competency growth, the SEL competencies of “self-awareness” and “relationship skills” were not assessed via the Panorama SEL survey measures, thus giving only a partial picture of these relationships. There may be additional relationships that were not identified or articulated between socio-cultural/demographic characteristics and competency growth as a result of these omissions.

As 100% of graduates from this school district are accepted to college, the high-performing nature of the student population and the interventions employed by the school district limit external validity. This may prove challenging when generalizing these results for secondary students outside of the school district. There are additional limitations due to the non-probability, choice-based sampling to include students only from this school district, and within the school district, only students from Texas schools. As acknowledged earlier, the vast majority of states in the U.S. have adopted SEL standards and these may impact SEL competency growth differently across the country.

Implications for Policy, Practice, and Recommendations for Future Evaluation:

The results of this study have a myriad of implications for policymakers, researchers, school districts, schools, and practitioners as they seek to improve SEL development and interventions for students. These implications will add to the growing base of SEL research that highlights the strong association between SEL competency development and school success, ultimately impacting life outcomes.

The significant association between SEL competency growth and age deserves further exploration; while many SEL curricula differentiate by age, further research may explore explicitly how student developmental level, SEL competencies, and SEL curriculum interact

with one another. This study's inquiry into student grade level and rate of SEL competency growth highlighted gaps in growth rates for students in middle school when compared to students in high school. Given the knowledge base of adolescent development, the known risk factors associated with this age group, and this study's findings, researchers may want to further examine SEL competency development and effective interventions for this population. School districts and SEL practitioners can prioritize interventions with this population to address gaps in competency growth, ultimately impacting student academic and behavioral success and potentially mitigating risky behaviors associated with this developmental level. Policymakers can consider building on the growing mandate of SEL standards across the country and set guidelines for effective SEL intervention practice that prioritizes students in early adolescence.

The positive association found between age and SEL competency development deserves attention from researchers and curriculum developers who can create increasingly sophisticated SEL interventions for older youth. High school students may be prepared for more complex interventions than already developed; younger students may need more differentiation. Policymakers and school districts can consider integrating SEL standards into college and career readiness programming. SEL development beyond high school is an important topic that deserves further exploration with the understanding that the human brain develops well into the mid to late 20s (Aamodt & Wang, 2011); further research can explore SEL competency growth and effective interventions with young adults in college and beyond.

This study did not explore associations between all 5 of the "CASEL 5" competencies. Notably, the competencies of "self-awareness" and "relationship skills" were not assessed via the Panorama SEL survey assessment measures. Given the consistent findings regarding the association between adolescent peer relationships and engagement in risky behaviors (Chassin et

al., 2004; DiBlasio & Benda, 1992; East, Felice, & Morgan, 1993; Udry, 1987), researchers may further explore relationships between socio-cultural and demographic data and these competencies.

This study's findings regarding negative associations between enrollment in special education and growth in SEL measures of self-management and emotion regulation when compared to their peers not enrolled in special education indicate a need for further research. There is limited research regarding students enrolled in special education, their social emotional learning development, and specialized interventions. Researchers may want to explore how these competencies interplay with a student's special education enrollment status. This may lead to the development of focused curricula specifically for students in this population. Social awareness competency growth rate was similar between students enrolled in special education and their non-enrolled peers; researchers may investigate how this competency is developed similarly and differently between special education students and their peers. Policy makers may seek to explicitly name SEL competency development as part of mandated curriculum for students enrolled in special education. SEL practitioners and teachers should be particularly mindful of the curriculum they currently use with this population and seek to differentiate or expand their interventions to address self-management and emotion regulation.

Research indicates significant academic performance disparities between low-income students and their more affluent peers in the United States (National Center for Education Statistics, 2019). While academic performance is not the same as SEL competency growth, the research indicates that the two are tied closely to one another (Durlak et al., 2011; Wiglesworth et al., 2016). Federal and local government entities should consider allocating explicit funding for SEL development and intervention in Title I schools just as they do with funds for improving

academic achievement with these students. It is recommended that further research should be conducted into the relationships between socioeconomic status and other SEL competencies as well.

The relationship between gender and emotion regulation invites further research into the impacts of socialization, cultural gender norms, and male and female identities in youth. This may lead to tailored interventions or even SEL assessments based on students' gender. In contrast to a deficit-based research approach that focuses on gaps in data and seeks to understand how problems exist, the field of SEL can join the growing strengths-based research movement to understand the development of resilience and healthy development (Maton et al., 2004). The positive association between English language learner status and social awareness competency development is an example of this. This population in United States public schools navigates complex cultural, familial, and school structures. These students live in homes that do not speak English as a native language but attend schools where English is used daily by peers, teachers, and school staff. In turn, school practices enforce dominant cultural structures that position English language learning students as operating from a deficit that needs to be corrected as opposed to building on their strengths of using multiple languages in home and school (Shapiro, 2014). Researchers should learn more about the healthy development of this competency with English language learners which in turn may impact interventions for other diverse populations.

Conclusions

The literature base indicates a strong relationship between social emotional learning (SEL), SEL competency development, and school and life outcomes including academic achievement, school engagement, and prosocial behaviors. Gaps in demographic reporting data for SEL interventions and competencies create the need to further explore SEL research and

interventions in diverse populations. This study examined the association of SEL measure growth in self-management, emotion regulation, and social awareness with student demographic and socio-cultural characteristics. Data suggests positive associations between development in all 3 SEL competencies and age. Student grade level, gender, enrollment in special education, enrollment in free and reduced lunch programming, and English Language Learner status each had significant positive or negative associations with one to two measures of SEL competency growth. Findings related to these associations indicate that socio-cultural and demographic characteristics influence SEL measure growth, and notably that student age plays a significant role in positive SEL competency development. Findings may inform future research into relationships between socio-cultural and demographic characteristics and SEL development, the development and refinement of interventions, and the creation of policies that support SEL development with diverse populations of students. Developments in research, policy, and practice that reflects the rich diversity of youth with ultimately enable equitable access to whole-child development that supports positive academic and life outcomes.

Appendix A: Panorama Social Emotional Learning Survey

Self-Management

How well students manage their emotions, thoughts, and behaviors in different situations.

Grades 6-12

Question	Response Options				
<i>During the past 30 days...</i>					
How often did you come to class prepared?	Almost never	Once in a while	Sometimes	Frequently	Almost all the time
How often did you follow directions in class?	Almost never	Once in a while	Sometimes	Frequently	Almost all the time
How often did you get your work done right away, instead of waiting until the last minute?	Almost never	Once in a while	Sometimes	Frequently	Almost all the time
How often did you pay attention and resist distractions?	Almost never	Once in a while	Sometimes	Frequently	Almost all the time
When you were working independently, how often did you stay focused?	Almost never	Once in a while	Sometimes	Frequently	Almost all the time
How often did you remain calm, even when someone was bothering you or saying bad things?	Almost never	Once in a while	Sometimes	Frequently	Almost all the time
How often did you allow others to speak without interruption?	Almost never	Once in a while	Sometimes	Frequently	Almost all the time
How often were you polite to adults?	Almost never	Once in a while	Sometimes	Frequently	Almost all the time
How often were you polite to other students?	Almost never	Once in a while	Sometimes	Frequently	Almost all the time
How often did you keep your temper in check?	Almost never	Once in a while	Sometimes	Frequently	Almost all the time

Social Awareness

How well students consider the perspectives of others and empathize with them.

Grades 6-12

Question	Response Options				
<i>During the past 30 days...</i>					
How carefully did you listen to other people's points of view?	Not carefully at all	Slightly carefully	Somewhat carefully	Quite carefully	Extremely carefully
How much did you care about other people's feelings?	Did not care at all	Cared a little bit	Cared somewhat	Cared quite a bit	Cared a tremendous amount
How often did you compliment others' accomplishments?	Almost never	Once in a while	Sometimes	Frequently	Almost all the time
How well did you get along with students who are different from you?	Did not get along at all	Got along a little bit	Got along somewhat	Got along pretty well	Got along extremely well
How clearly were you able to describe your feelings?	Not at all clearly	Slightly clearly	Somewhat clearly	Quite clearly	Extremely clearly
When others disagreed with you, how respectful were you of their views?	Not at all respectful	Slightly respectful	Somewhat respectful	Quite respectful	Extremely respectful
To what extent were you able to stand up for yourself without putting others down?	Not at all	A little bit	Somewhat	Quite a bit	A tremendous amount
To what extent were you able to disagree with others without starting an argument?	Not at all	A little bit	Somewhat	Quite a bit	A tremendous amount

Emotion Regulation

How well students regulate their emotions.

Grades 6-12

Question	Response Options				
When you are feeling pressured, how easily can you stay in control?	Not easily at all	Slightly easily	Somewhat easily	Quite easily	Extremely easily
How often are you able to pull yourself out of a bad mood?	Almost never	Once in a while	Sometimes	Frequently	Almost always
When everybody around you gets angry, how relaxed can you stay?	Not relaxed at all	Slightly relaxed	Somewhat relaxed	Quite relaxed	Extremely relaxed
How often are you able to control your emotions when you need to?	Almost never	Once in a while	Sometimes	Frequently	Almost always
Once you get upset, how often can you get yourself to relax?	Almost never	Once in a while	Sometimes	Frequently	Almost always
When things go wrong for you, how calm are you able to remain?	Not calm at all	Slightly calm	Somewhat calm	Quite calm	Extremely calm

Appendix B: Social Emotional Survey Parent Letter

Social-Emotional Learning Survey Parent Information

Dear Families,

Social-emotional learning (SEL) describes the mindsets, skills, attitudes, and feelings that help students succeed in school, career, and life. At its core, SEL focuses on students' fundamental needs for motivation, social connectedness, and self-regulation as prerequisites for learning. The skills that make up SEL are an important part of a well-rounded education.

On *(insert date here)*, your child will be asked to complete a brief social-emotional learning survey from Panorama Education. The Panorama Student Survey is designed to help educators understand their students' social-emotional competencies and students' perceptions of how supported they are in their school environment.

The survey includes the following measures of student competencies, or the social, emotional, and motivational skills that help student success at school, and in life:

- **Social Awareness:** How well students consider the perspective of others and empathize with them.
- **Emotion regulation:** How well students regulate their emotions.
- **Self-Management:** How well students manage their emotions, thoughts, and behaviors.
- **Self-Efficacy:** How much students believe they can succeed in achieving academic outcomes

- Teacher-student relationships: How strong the social connection is between teachers and students within and beyond the school.
- School climate: Perceptions of the overall social and learning climate of the school.
- Sense of Belonging: How much students feel that they are valued members of the school community.
- School safety: Perceptions of student physical and psychological safety while at school.

If you have questions about this survey or want to exempt your student from participation, please contact the school at *(insert phone number here)* or via email at *(insert email address here)*.

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