

THE INFLUENCE OF HOME ENVIRONMENTAL FACTORS,
SOCIO-EMOTIONAL FACTORS AND ACADEMIC
RESILIENCE ON READING ACHIEVEMENT

by

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DEDICATION

Dedicated to Dr. Natalie Bohlmann. Until you told me I would, I never thought I could. Thank you for planting the seed. I appreciate you and your foundational contributions to my education.

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ABSTRACT

Research shows that the influences of home environment, as well as social and emotional behaviors, have a significant relationship to academic achievement. Emerging research, as well as this study, shows that positive learning behaviors such as persistence, attention to task and adaption to change in routines can mediate negative influences of poor social-emotional behaviors and at-risk home environments (McTigue, Washburn & Liew, 2009). These positive learning behaviors are referred to as academic resilience, traits that are gaining increasing awareness as important to academic achievement. The purpose of this study was to investigate the relationships among social and emotional factors, home environment, academic resilience and reading achievement for third-grade students who participated in the Early Childhood Longitudinal Study Kindergarten Class of 1998-1999 (ECLS-K), conducted by the National Center for Education Statistics (NCES, 2004). Structural Equation Modeling (SEM) using Stata 14.0 (Stata Corp., 2105) was used to analyze the relationships and to answer the research questions for this study. Additionally, SEM analysis was conducted based on the third-grade model was conducted by gender, socioeconomic status, and racial groups.

Social and emotional behaviors were found to have a significantly negative relationship with academic resilience and reading achievement. Home Environment was not found to be significantly related to either academic resilience or reading achievement. Academic resilience was found to mediate 33% of the total effects of negative social and emotional behaviors on reading achievement. Similar results were found for the subgroup analyses. This study highlights the importance of academic resilience behaviors for mediating the negative social and emotional factors many students struggle with every day. Results from this study suggest the inclusion of social and emotional learning in the K-12 curriculum beginning in the primary years. Such instruction can bolster behavior related to academic resilience and thus promote increased academic achievement. School administrators will need to select a curriculum that is complementary to community programs that seek to provide the same type of instruction and to meet the needs of school and community stakeholders in general. Teachers will need to reconsider instructional responsibilities to include the integration social and emotion learning into classroom instruction.

CHAPTER ONE

INTRODUCTION TO THE STUDY

Introduction

The process of human development has been written about extensively over the past century; in fact, the range of thinking is quite vast: from construction of knowledge to behavioral theories and the more contemporary view of information processing, all of which are theories of development with great bodies of research within and ongoing (Schunk, p. 444, 2012). The progressive ways in which humans develop physically, socially, and cognitively occur as a result of a series complex reciprocal interactions between humans and other persons, objects, and symbols within their environment (Bronfenbrenner, 1994). For example, parent-child interactions, peer interactions during group activities, interactions with others formal organizations such as schools and informal environments within neighborhoods. Bronfenbrenner (2006) has proposed a model of human development that attempts to explain the complex interplay of competing factors that influence the overall development of human beings.

Bronfenbrenner's BioEcological Model of Development

Urie Bronfenbrenner (1994) has published extensive research on the theory of Ecological Models of Human Development and this theory is a key component of this study. Utilizing existing research dating back to 1870 in which a study in Berlin looked at neighborhood impacts on children's development, Bronfenbrenner has continued that

research on into an ecological paradigm. This theory looks at human development as ongoing and lifelong. Additionally, this theoretical lens is ideal for this study because it looks at every level of human development from the micro level to the macro, including, but not limited to: school and family relationships, culture, economics, customs, and knowledge bases. Bronfenbrenner explains the interworking of these relationships as reciprocal, which is an ideal fit for this study. Bronfenbrenner explains child development as a complex environmental process in which academic achievement is part of that overall development, both a contributing factor and a benefactor.

Bronfenbrenner and Morris (2006) discuss two particular manifestations of generative dispositions that help to frame this study. The first of these is selective responsiveness as part of the ecological model, which explains that there is a natural draw toward physical and social environmental aspects that is comfortable and familiar. This is then followed by structuring proclivities which are generally more challenging tasks in which the learner chooses to engage. It is in this way the social-emotional factors determine an individual's selective responsiveness. This plays into learning reading, writing, and mathematic skills because that next level, structural proclivities, is needed for further development of the aforementioned skills. Without these, we can assume a lack of what will be described later as academic resilience.

Importance of Social-Emotional Factors

The importance of Social-Emotional Factors as indicators and contributors to students reading achievement has been largely overlooked in academic research to this point. Research by McTigue, Washburn, and Liew (2009) define these factors as

personality traits; this emerging research shows the legitimacy of temperament and self-belief factors as real factors in relation to students Reading Achievement from the early primary years and on into secondary education. Clearly, research is limited in this regard and further study is needed. Research by Metsapelto, Pulkkinen, and Tolvanen (2010) showed that the increase of extracurricular activities in nine and ten-year-old students as part of their school day not only increase their social-emotional skill and attitudes but that these activities also lead to a decrease in problem behaviors and an increase in academic achievement.

Home Environment and Social-Emotional Factors

The importance of home environment as indicators and contributors to students reading achievement has been well researched, as discussed by Bennett, Weigel, and Martin (2002). General findings show significant connections between home environment and reading achievement. One of the greatest elements of home environments as a contributing factor is how it relates to motivation to read because that motivation is, as research has thoroughly proven, is directly related to reading behavior, and reading behavior is the number one indicator of attainment of literacy skills (Law, 2003). The importance of this is exponentially greater as reading proficiency is at the heart of all learning in the education system, and without that proficiency, students struggle in all subjects, not just English and reading (Law, 2003).

Chiu, Hong, and Hu (2015) identify a subcategory of home environment as family cultural capital. These factors include thinking habits, language utilized, values, and behaviors that are important to the family life in so much as they are taught, passed on,

modeled, and expected in each family unit. They found that family cultural capital has a significant and positive correlation to reading motivation, which is key to students' attainment of reading skills. As Law (2003) points out, home environments that encourage literacy correlate to student reading motivation. In this way, we can see how home environment plays a direct role in reading achievement—the connection is clear and has been established.

While there is an extensive body of research analyzing the relationship between home environment and literacy achievement (Foster, Lambert, Abbott-Shim, McCarty, Franze, 2005), there are home environment factors that are generally overlooked as contributing factors directly correlated to reading achievement; these include some of the ECLS Spring Parent Interview prompts that include components related to how extracurricular time is spent with the child, how many books are in the home, and the parents' reading habits. This study seeks to identify those overlooked factors that do have significant and positive correlations to students' reading achievement.

Academic Resilience

Research suggests that even some students who suffer from negative social-emotional factors have what is referred to as academic resilience and this is quite apparently a quintessential component in reading achievement. Research by McTigue, Washburn, and Liew (2009) defined academic resilience in the terms of self-esteem, self-efficacy, temperament, and other factors when tracking first-grade students on through later primary years. Among their findings was that temperament in first grade had a direct and positive correlation to reading achievement in those same students when they were in

the third-grade. School psychologists, for example, report that reading deficiency is the most common problem referred to them (McTigue, Washburn, and Liew, 2009).

Bennett, Weigel, and Martin (2002) discuss how family factors can insulate young readers from negative external circumstances while simultaneously providing time and resources for language and literacy acquisition, thereby bolstering students' academic resilience. They discuss this as an environment for learning that is provided by the family, rather than the school, in so much as that the formal instruction received at school is only one piece of the equation and that the home environment is equally relevant in terms of impacting students' reading achievement.

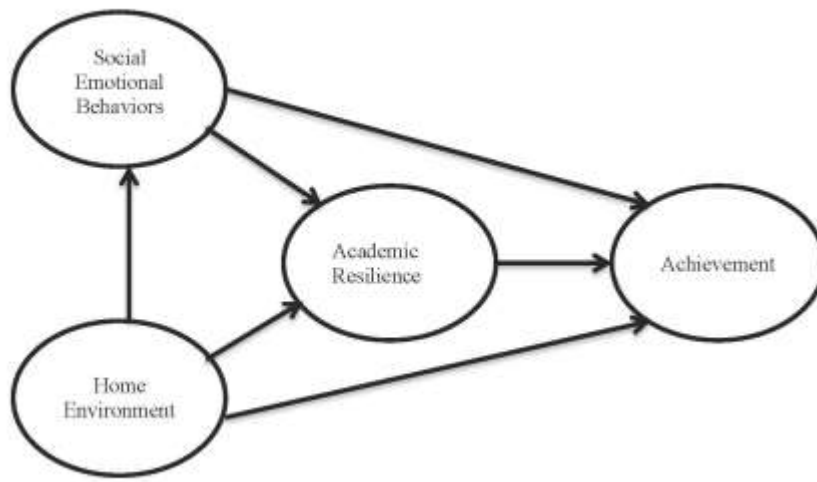
The prevalence of reading problems and other academic deficiencies experienced by students suggest, due to social-emotional difficulties and less than desirable home environments, a need to bolster academic resilience is evident. This study will examine academic resilience among the ECLS-K third graders with the Teacher Social Rating Scale items that ask third-grade teachers to rate students' learning approaches. More specifically, these items ask teachers to characterize behaviors such as student's organization skills, attention, and task persistence, focusing in particular on the questions as reported by the students themselves.

Conceptual Model

All points of the model feed into reading achievement as this study seeks to determine the interrelatedness of social-emotional factors, home environment, and academic resiliency and what correlation they have to reading achievement (see Figure 1) Likewise, this study also seeks to identify any correlation between social-emotional

factors and home environment as well as their impact on reading achievement without academic resilience.

Figure 1. Conceptual Model



Finally, this study will look for the greatest indicator of reading achievement among academic resilience, social-emotional factors, and home environment. Because there is relatively little research on the relationship between academic resilience and the aforementioned other factors, further research is needed.

Problem Statement

According to the Organization for Economic Cooperation and Development (OECD, 2014), Literacy rates in the United States continue to lag behind our global competitors—we are 15th of 27 ranked countries—and is it reasonable to attribute students' literacy development to foundational habits and attitudes that are formed early

on in elementary years? For years, the primary focus regarding literacy rates has been on the instruction and intervention techniques facilitated by classroom teachers without consideration of social-emotional factors outside of school—particularly at home—that are perhaps even greater predictors of students’ literacy achievement than what is done in the classroom (Chiu, Hong, and Hu, 2015). While previous research has supported the belief that what happens at home extends and solidifies what happens in the classroom, the truth regarding literary achievement very well may be that what happens in the classroom augments what happens at home (Bennett, Weigel, and Martin, 2002).

Nailing Xia (2010) refers to the social-emotional factors as family process factors and reports that the research findings with family process factors and achievement are inconclusive as he found studies showing positive evidence and others showing insignificant or negative effects. His findings are supported by the imbalance that exists considering the number of research studies that focus on interventions to improve achievement as compared to studies focused on the influence of family factors and in particular social-emotional factors that influence the cognitive development of students. For example, Horowitz-Kraus, and Finucane (2016) recently completed an empirical study on reading interventions, which focused entirely on phonology, fluency, and comprehension—all necessary and relevant issues in reading skill acquisition, but still no mention of the social-emotional factors which impact those facets of reading development. Findings from research that investigates the impact of social-emotional factors on students’ reading achievement will provide teachers, counselors, and school administrators with the information they need to not only plan and implement effective

interventions to improve student achievement but also prepare families before intervention is necessary by guiding parents in that process.

Purpose Statement

The purpose of this study is to describe the relationship between social-emotional factors, home environment, and academic resilience on reading achievement among third graders who participated in the Early Childhood Longitudinal Study Kindergarten Class of 1998-1999 (ECLS-K), conducted by the National Center for Education Statistics (NCES, 2004).

This study will investigate the relationships between home affective environment, social-emotional factors, academic resilience, and academic achievement of third-grade students. These factors are self-reported through the questionnaire as students responded to questions about their friends (number, quality, and impact), feelings of sadness, and feelings of worry. This data set may be cross-referenced with parental perceptions of the child from the ECLS Spring Parent Interview for the same students; the purpose of the cross-reference analysis would be to trace a connection between reported negative social-emotional factors and home environment.

Research Questions and Hypotheses

Research Question 1: Is there a relationship among academic resilience, home environment, social-emotional behaviors and Reading achievement?

H₀: There is not a relationship between Social-Emotional Behaviors and
Academic Resilience

H₁: There is a relationship between Social-Emotional Behaviors and Academic Resilience

H₀: There is not a relationship between Social-Emotional Behaviors and Reading Achievement

H₁: There is a relationship between Social-Emotional Behaviors and Reading Achievement

H₀: There is not a relationship between Home Affective Environment and Academic Resilience

H₁: There is a relationship between Home Affective Environment and Academic Resilience

H₀: There is not a relationship between Affective Home Environment and Reading Achievement

H₁: There is a relationship between Home Affective Environment and Reading Achievement

Research Question 2: Is there a relationship between Home Affective Environment and Social-Emotional Behaviors?

H₀: There is not a relationship between Home Affective Environment and Social-Emotional Behaviors

H₁: There is a relationship between Affective Home Environment and Social-Emotional Behaviors.

Research Question 3: Does academic resilience mediate the effects of social-emotional and home environment factors on reading achievement?

H₀: Academic Resilience does not mediate the effects of Home Effective Environment on Reading Achievement

H₁: Academic Resilience mediates the effects of Home Effective Environment on Reading Achievement

H₀: Academic Resilience does not mediate the effects of Social-Emotional Behaviors on Reading Achievement

H₁: Academic Resilience mediates the effects of Affective Home Environment on Reading Achievement

Research Question 4: Does the relationship among academic resilience, home environment, and social-emotional factors differ by gender, SES, or racial groups?

H₀: The relationships among academic resilience, home environment, and social-emotional factors do not differ by gender, SES, or racial groups

H₁: The relationships among academic resilience, home environment, and social-emotional factors do differ by gender, SES, or racial group.

Research Question 5: Does academic resilience mediate the effects of social-emotional and home environment factors on reading achievement across gender, SES, and racial groups?

H₀: Academic Resilience does not mediate the effects of Social-Emotional Behaviors on Reading Achievement across gender, SES, and racial groups

H₁: Academic Resilience mediates the effects of Affective Home Environment on Reading Achievement across gender, SES, and racial groups.

Research Question 6: Is there a relationship between Home Affective Environment and Social-Emotional Behaviors across gender, SES, and racial groups?

H₀: There a relationship between Home Affective Environment and Social-Emotional Behaviors across gender, SES, and racial groups.

H₁: There a relationship between Home Affective Environment and Social-Emotional Behaviors across gender, SES, and racial groups.

Conceptual Framework

Urie Bronfenbrenner (1999) first published his theory on the bioecological development of the child in 1979 and has continued to further develop and apply that theory since. What is categorically different in Bronfenbrenner's work as opposed to other developmental research is rooted in the distinct separation he outlines between environment and process, whereas traditional developmental research tends to lump these together under environment (1999, p. 4). Bronfenbrenner's term process can be defined as the ongoing interaction between the person and the home environment. What is of great importance here though is the focus placed on the fact that all of these factors change over time and impact each other in a reciprocal manner; Bronfenbrenner labels the individual as a product and a producer (1999, p. 5). Additionally, he places further emphasis on the reality that for any of these factors to actually impact the trajectory of another, the key ingredient is time—consistency of the activity over a historical period.

Bronfenbrenner reviews a study by Drillien (1957) in which the bioecological model is used with child development charted based on the factors of socioeconomic status, birth weight, and the quality of the interactions between mothers and their babies.

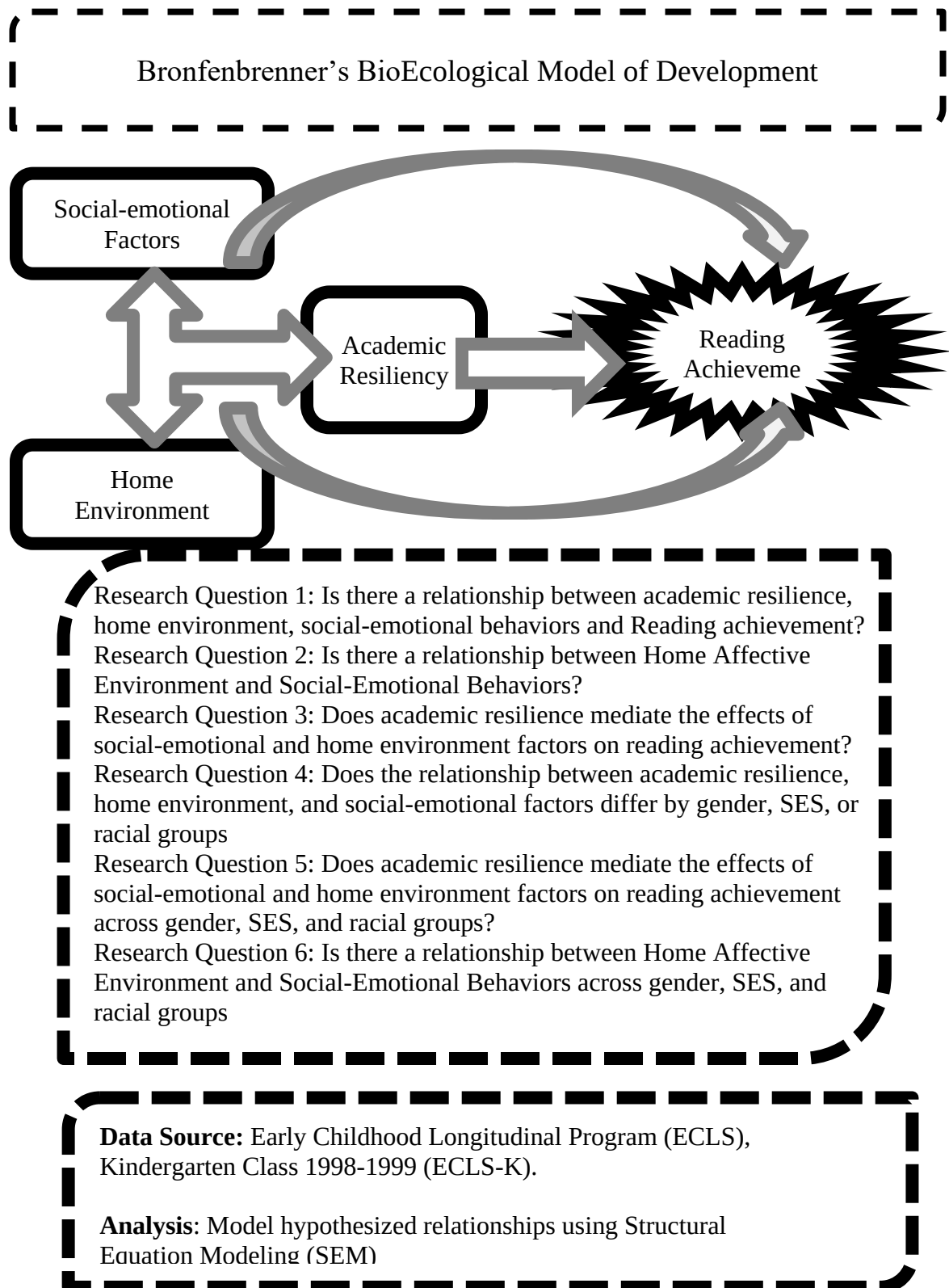
These factors are then used to measure their impact and relationship with the children's behavioral problems. The Drillien study clearly showed that children with high-quality interactions with their mothers tend to experience far fewer behavior problems when compared to those who have low-quality interactions with their mothers. This work supports the theoretical framework of this study because we can see that the quality of the interactions is components of the home environment, the children's behaviors are relative to the social-emotional factors, and what Bronfenbrenner calls process is the relationship between the two. Drillien's research clearly shows, by way of Bronfenbrenner's bioecological model, that home environment has a significant impact on social-emotional factors.

Bronfenbrenner further hypothesized that process (the two-way interaction between home environment and social-emotional factors) is a joint function of environment and outcome (outcome in this usage is not referring to academic achievement, but rather behavioral outcomes). He conducted another study in 1999 investigating the relationships between parental monitoring and academic achievement in over 4,000 high school students. While environmental factors did play a role in the student's achievement, the results of this particular study showed that parental monitoring had the greatest positive significance, by a considerable margin, in relation to student achievement. The concept of parental monitoring is unique because although it is rooted in the home it is not limited to the home, but would still be considered a factor of home environment because it is the set of expectations clearly set forth by the parent and the magnitude to which those expectations are enforced (1999, p. 10). This work supports the

theoretical framework of this study because we can see that an aspect of home environment absolutely has an indirectly positive impact on student achievement by way of social-emotional factors and, I hypothesize, academic resiliency.

Earlier research by Bronfenbrenner (1979, 1993) recognizes the reciprocal impact of academic resilience as has been applied in the model of this study; Bronfenbrenner uses the term developmental forces in this regard however as the phrasing academic resilience had both not yet been coined nor brought to the forefront of academic research. He writes that “Developmental forces have real power, and the degree of that power is directly dependent upon the nature of the environment the forces are occurring in” (1999, p. 11). This is proven in the aforementioned parental monitoring study where there was a clear impact differential based upon the type of family structure that the students have at home. This work supports the conceptual framework of this study because the implication for academic resiliency is that it very clearly has a significant correlation to achievement, regardless of whether the resiliency is sourced from home environmental factors or social-emotional factors (although the model does leave room for home environmental factors to impact social-emotional factors that then lead to academic resiliency).

Figure 2. Conceptual Framework



Research Methods

This is a quantitative research study utilizing secondary data analysis. The data comes from a large-scale survey conducted by the Early Childhood Longitudinal Program, 1998 Cohort (ECLS -K) for the National Center of Educational Statistics (U.S. Department of Education, 2004). The ECLS-K program used a complex sampling design to collect data from more than 22,000 children across the United States as they advanced from kindergarten to eighth grade. The Tournageau, Nord, Le, & Sorogran study (2004) explains that the ECLS-K program was designed to collect data to:

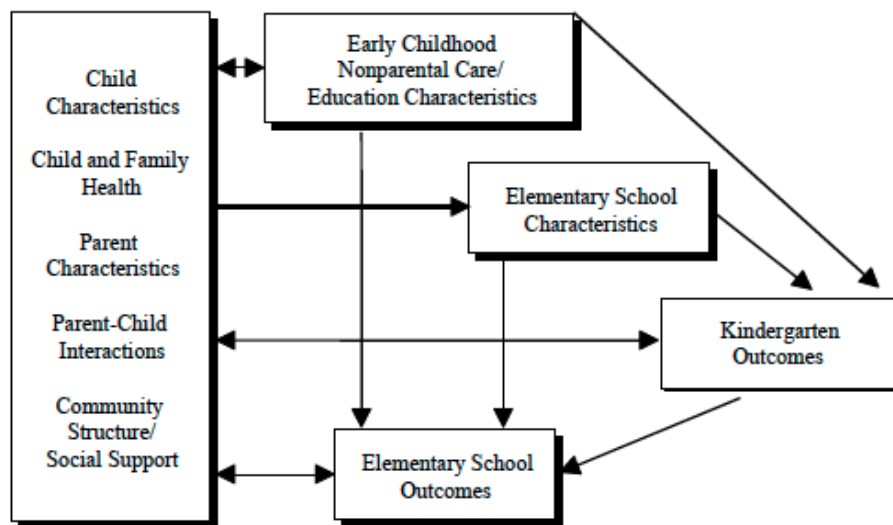
“(1) Study of achievement in the elementary and middle school years; (2) assess the developmental status of children in the United States at the start of their formal schooling and at key points during elementary and middle school; (3) allow for cross-sectional studies of the nature and quality of kindergarten programs in the United States; and (4) to study of the relationship of family, preschool, and school experiences to children’s developmental status at school entry and their progress kindergarten, elementary school, and middle school (p. 1-3)”

The importance of the ECLS-K data collection program is that it provides data that researchers can analyze to investigate research questions focused on factors that influence children’s early success in school; explore school readiness and the relationship between the kindergarten experience and middle school performance; and to investigate children’s academic growth as they move into middle school.

The data used for this study was taken from the Public-Use ECLS-K data files, which provides responses from direct child assessments, parent interviews, teacher and school administrator questionnaires, student records, and school facility checklists. The difference between the public use and restricted ECLS-K data file is that National Center

for Educational Statistics (NCES) modified the public data use files to minimize individual identification of children, parents, and teachers participating in the ECLS-K study. The conceptual model for the ECLS-K 1998-1999 is represented in Figure 1. This research study uses third-grade data from students, parents, and teacher questionnaires as well as third-grade student achievement data.

Figure 3. ECLS-K 1998-1999 Conceptual Model (U.S. Department of Education, 2004)



Structural equation modeling will be used to investigate the relationships between home environment and social-emotional factors, academic resiliency, and reading achievement.

Limitations

Some potential weaknesses of this study include the fact that results are based upon self-reporting of students and parents. Therefore, honest responses are assumed but

not guaranteed. Additionally, this is a very large-scale data set, which thereby in itself limits the complexity of the research. The complex sampling design involved for the Early Childhood Longitudinal Study, Kindergarten Class of 1998-1999 (NCLS-K) requires the use of sampling weights calculated by NCES to ensure proper calculation of descriptive statistics and other more complex analysis. In particular, the weights used to ensure sample representativeness must be used to estimate variances accurately.

Variances must be precisely calculated to ensure that the standard errors used for significance testing are not biased. Cross-sectional weights are used to ensure represented of responses individual child data combined with parent interview data, individual child data combined with parent interview and teacher interview data and finally individual child data combined with parent, teacher, and administrator interview data. However, this combination of weights is not consistent when collecting data across cohorts. Weights may or may not reflect precisely the sample characteristics when using combinations of child, parent, and teacher items.

The ECLS-K data used for this study is a public release version and does not include some variables in efforts to reduce the likelihood that an individual school, teacher, parent, or child participating in the study can be identified. For example, a small number of variables related to certain unique subpopulations, such as children with disabilities, children with specific non-English home languages or countries of birth have certain variables were either eliminated or converted to categorical data for the public use dataset (U.S. Department of Education, 2004). Finally, the data analyzed for this study is limited to creating definitions of socio-emotional well-being, home environment and

academic resiliency using only the items collected on the ECLS-K child, parent, and teacher surveys.

Limitations

There are several limitations with the survey. First, it was a self-report measure and this may have influenced the quality of the home affective environment measurements (latent trait). Considering that this particular set of variables relied upon parents to self-disclose negative parenting traits to an interviewer who they are likely to perceive as someone calling from their child's school, there is a reasonable likelihood that accurate reporting did not occur in this regard. Additionally, the trait of home affective environment is difficult to measure based on other literature that we have reviewed. The limited literature found by this study which measured home (affective environment) included indicators in the domain of parental expectations and parental structure, this study did not. Finally, this study was limited by the items that are in the parent interview.

Delimitations

The ECLS-K study is a nationally representative sample of kindergarten children, kindergarten teachers, and schools with kindergarten programs for the 1998-1999 school year and a nationally representative sample of first-graders in the 1999-2000 school year. However, due to the complex, multistage sampling design used in subsequent years, the data is not nationally representative of third, fifth or eighth-grade students. Since the third-grade sample did not collect data from third graders who did not have a chance to participate in data collection during kindergarten or first grade, any results from analyses using the ECLS-K third-grade data are representative of the population cohort rather than all U.S. Third graders in 2001–02 (U.S. Department of Education, 2004). According to the User’s Manual for the ECLS-K Third-Grade Public-Use data file (U.S. Department of Education, 2004), the ECLS-K 1998-99 sample of third graders is not representative of third-grade students, third-grade teachers, or schools with third grades, but rather the 2001-2002-population cohort. Thus, data from this sample of children does not represent all third graders in 2001-2002 who were kindergarten students in 1998-1999 and does not represent third-grade teachers, or schools with third grades during the 1998-1999 school year. Third-grade students are the main focus of this analysis and thus results from this study will only be generalizable to third-grade students with similar demographic characteristics to those students included in this study. It is also important to note that results from this data should not be generalized to schools with third grades or third-grade teachers.

Definition of Terms

Academic Resilience: The attitude of not giving up in challenging situations because of the belief that effort and challenge lead to success more than ability (Dweck, 1999)

Ecological Model: A theoretical model of developmental research created by Urie Bronfenbrenner in which both environment and process are considered distinctly different, however overlapping, factors in human development

Effortful Control: An aspect of temperament that is the ability to inhibit a dominant response (Rothbart & Bates, 2006)

Ego-Resiliency: An aspect of temperament that is the ability to modify one's level of control according to the situation (Block & Block, 1980; Letzring, Block, & funder, 2005)

Home Environment Factors: The varying factors students face that include parental expectations, family beliefs, family culture, parenting practices, parental involvement, family structure, and physical aspects of the home itself in relation to facilitation of learning provisions and opportunities for academic practice

Self-Efficacy: A belief that one's actions can produce the results that they desire (Pajares, 2005)

Self-Esteem: A person's emotional reactions to his or her own accomplishments (Linnenbrink & Pintrich, 2003)

Self-Regulated Learning: An approach to a learning task involving forethought, performance control, and self-reflection (Schunk & Zimmerman, 2007)

Social-Emotional Factors: the varying personality traits that include (but are not limited to) temperament, ego, self-esteem, and self-efficacy

Structural Modeling: Focuses on modeling methods, practices, and theories associated with logic and mathematics that are not limited to any domain specific application (Dym, 1997)

Temperament: Innate behavioral style or predisposition (McTigue, Washburn, and Liew, 2009)

Significance of the Study

While issues that may be categorically assigned to home environment (parental expectations, family beliefs, family culture, parenting practices, parental involvement, family structure, physical aspects of the home itself, etc.) have been thoroughly researched in relation to student achievement, connections to other factors in this study (academic resilience and social-emotional factors) have not been extensively researched. Additionally, the concept of academic resilience in relation to reading achievement is in need of further development. Finally, social-emotional connections to reading achievement also lack extensive research, yet what is available clearly suggests a positive correlation.

Although the lacking body of research (collectively speaking) in itself more than justifies further exploration of the factors, there are much greater implications at stake in terms of child development and reading achievement. As the world around us continues to change, so too must our approaches to human development and education or we risk becoming archaic and irrelevant in modern society. It is because of this that it is imperative that we begin to view one of the most important elements of education—reading achievement—through the lens of all the other factors that impact students and their ability to learn and achieve on a daily basis with full respect to this emerging realization that many of those factors are coming from outside the school day, yet they impact it greatly.

What is more important than any one of the aforementioned factors, however, is the interworking and reciprocal relationship of them all together and how those relationships translate into reading achievement, or in unfortunate and negative situations, a lack of reading achievement. This significance of this study is that it thoroughly analyzes these relationships to shed light on non-academic factors that have significant impact on student achievement.

Chapter Summary

This chapter positions this study within the theoretical framework of Bronfenbrenner's ecological model of development. The key factors of this study are introduced as home environment, social-emotional, and academic resilience and justification is made for researching their reciprocal relationship and that impact upon reading achievement.

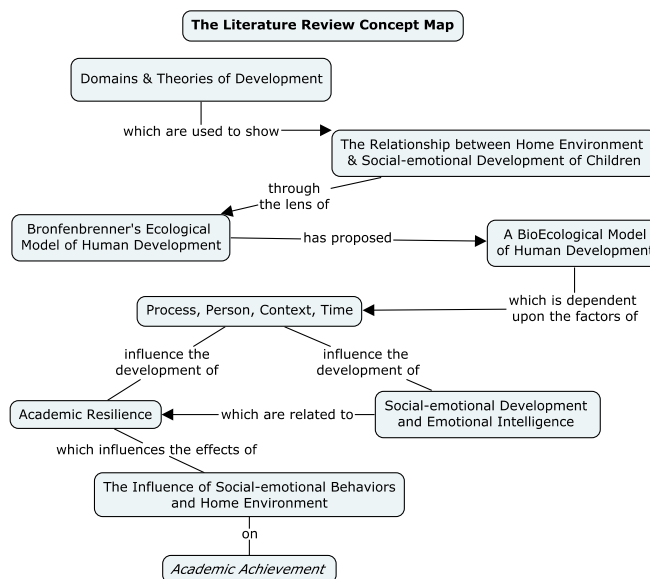
CHAPTER TWO

LITERATURE REVIEW

Introduction

The literature reviewed in this study provides an overview of theories related to human development, learning with special emphasis on the role of home affective environment on social-emotional development. In particular, these relationships are viewed through Bronfenbrenner's Ecological model of human development. Research related to the interactions of home affective environment and social-emotional behaviors on student achievement is also discussed within the context of positive learning approaches or behaviors related to academic resilience. Figure 4 presents a concept map that provides an overview of topics covered and their relationships to one another.

Figure 4. Literature Review Concept Map



John Watson viewed human development in behaviorist terms of a blank slate entirely molded by learning (Kail and Cavanaugh, 2010). This early theory quickly proved insufficient but has served as an important foundation for development theories to emerge from. In the beginning, this was one side of the nature versus nurture issue as the field of human development grew. However, as the research continued to evolve and expand, later studies by some key psychologists would not only intertwine nature and nurture, but also provide room for the blank slate theory to be at least partially legitimized in so far as the commonly accepted belief that human development is certainly impacted to varying degrees by both the environment and the experiences people face as they grow, while the consensus agrees the slate theory not to be all-encompassing.

Domains and Theories of Development

When looking at the plethora of development and learning theories and research that exist today, it is easy to understand the common knowledge assertion that there is a web of related forces impacting human development and it is the differences between the theories that either highlight and accentuate or downplay and minimize the relativity of each of these forces. For example, biological forces are those that are genetic and thus generally cannot be controlled or altered. The exception to this is health factors, which are either choice related or conditions that are treatable, of course. Psychological factors deal with emotions, cognition, and the vast array of internal elements that have an effect on human development. A major element here is how people see themselves and what causes those feelings to arise. Sociocultural forces are the forces on human development

emerging from relationships among people, with society, and in a given culture. This is the recognition of the relationship between people and their environment. Life-cycle forces are those events that people, in general, go through at various stages in life (Kail and Cavanaugh, 2010).

In order to properly and effectively utilize Bronfenbrenner's BioEcological Model of Human Development for this study, it is important to trace the root influences of the model, however direct or indirect they may be. The BioEcological model includes all aspects of development and does so with the necessary inclusion of the elements of time, context, process, and personal experience. Because the model is both all-encompassing and evolving in nature, it is quite apparent that Bronfenbrenner was building upon the previous work of development and learning theorists alike.

Several prominent theories have been proposed to explain how the aforementioned lifecycle forces interact to promote human development. For example, Psychosocial theory was proposed by Erik Erikson involved eight very specific stages of human development that all people ascend through (assuming they don't die early, of course). Erikson referred to the stages as a maturational plan that is internal and constantly interacting with the external events and pressures of society. That interaction then, according To Erikson, is how and where human development occurs (Kail and Cavanaugh, pp. 11-12, 2010).

Sigmund Freud founded the psychoanalytic theory, which has evolved considerably since it was first developed over a century ago. The theory does account for stages, however, modern scholars are generally less supportive of the sexual nature of

Freud's stages and more concerned with the main principles of his work. These include the unconscious (or subconscious) as a primary motivator for human behavior. That motivator impacts development because, as Freud explained, the experiences a person has over time shape current and future behavior, which we see utilized in Person Place Context Time (PPCT) constructs within Bronfenbrenner's BioEcological Model. Another major principle herein is that psychoanalysis is the method in which people learn to understand their subconscious forces alongside the impact of their previous experiences and so doing can help them to intentionally shape their own development moving forward (Curriculum Connection, pp. 38-39, 2010).

Learning Theory

Taking the behaviorist theory to a new and more applicable level, B. F. Skinner utilized primarily animal subjects to test operant conditioning with reinforcements and punishments. Reinforcements can be positive, like praises and treats, and can also be negative, like the removal of unpleasant things. This theory proposes that repetition of behaviors is determined by those punishments or reinforcements after the initial behavior (Kail and Cavanaugh, p. 12, 2010). Through Skinner's learning theory work we gain a foundational understanding of the learning process and see that environments and relationships impact learning, thereby impacting development, as later extrapolated in Bronfenbrenner's BioEcological Model.

Albert Bandura expanded upon Skinner's work as he developed social cognitive theory. Bandura believed that the experiences people have are the primary force in shaping their development and to explain this he used the term self-efficacy. According

to Bandura (1982), “Perceived self-efficacy is concerned with judgments of how well one can execute courses of action required to deal with prospective situations “ (p. 122). Individuals who have high levels of self-efficacy related to particular tasks are more likely to engage in those tasks and improve their skills. For example, individuals who perceive that they can successfully interact with others in the environment are motivated to interact more with others thus increasing the development of social skills. Likewise, students who feel that they can read successfully will be motivated to engage in reading activities even though they will likely encounter new words that are unfamiliar and will have to learn. People’s beliefs about their capabilities formed by their experiences and thereby influence their future behaviors, according to social cognitive theory (Kail and Cavanaugh, p. 13, 2010). The concept of self-efficacy can actually be seen in the center of Bronfenbrenner’s BioEcological Model, as the very beginning of the microsystem is the immediate self.

Jean Piaget also implemented stages in his cognitive theory of human development, but these stages are constructed around the idea that the child interacts with the world around him or her as a scientist would—by creating, testing, and revising theories. Piaget’s stages represent the manner and complexity with which the child approaches problem-solving (theory testing and revision) as he or she interacts with everything and everyone on a daily basis. This view of development then, according to Piaget’s theory, is fully driven by the individual’s desire to make sense of the world around him or her (Kail and Cavanaugh, pp. 13-14, 2010). There are considerable parallels between Piaget’s stages and Bronfenbrenner’s bioecological systems. While

Piaget looks at the actual development over a specific period (the stages), Bronfenbrenner's model shows a holistic approach to development in which all elements, not just development, are considered. In this way, Piaget's stages can actually fit within Bronfenbrenner's BioEcological Model.

Approaching human development from a different angle, Lev Vygotsky constructivist work on socio-cultural theory in the context of human development builds upon this while it also serves as a precursor to the BioEcological model in that he was among the first to theorize that the developing individual participates in the shaping of the surrounding environment (Schunk, 2012, p. 241). Focusing on the interactions of social, cultural, and historical elements, Vygotsky argued that context is an equal contributor of development. Urie Bronfenbrenner (1999) states that development is the "joint function of the person and environment" (p. 5) and this theme can be seen throughout his work with the bioecological model of human development, which he created. Bronfenbrenner's work built upon that of those who came before him. While Vygotsky argued that context is an equal contributor of development, Bronfenbrenner added the reciprocity of the context as proximal processes.

The Relationship Between Home Environment and Social-emotional Development of Children

The relationship between individuals' home environment and their social-emotional development as a portion of overall human development can be explained by Bronfenbrenner's BioEcological model. Home environment is related to social-emotional development and the process of social-emotional development is also dependent on

interactions with other persons (peers, significant others, teachers etc.) in the environment, and over time and within specific contexts. The majority of the social-emotional development occurs in the micro and mesosystems within the BioEcological model as the child's interaction in these parts of the model occur with parents and siblings (micro) and also friends and teachers (meso).

One of the most useful aspects of the bioecological model is the diversity of its application. While readily applicable to the field of educational research, the vast majority of studies, which Bronfenbrenner cites as using and supporting the validity of the BioEcological model, come from non-academic research. Bronfenbrenner suggests that the interactions of persons within their immediate environment are one element of that determines competent vs. dysfunctional social-emotional development (Bronfenbrenner, 2006). Research has shown that parent-child interactions heavily influence the social-emotional development of children (Snyder, Shapiro, & Treleaven 2011; Drillien, 1957).

For example, in a study conducted by Drillien (1964), babies (from infancy through the age of four) were analyzed by birth weight and social class in regard to their problem behaviors and what affect their mother's responsiveness had. The results were clear: high quality and high frequency of maternal interactions substantially reduced the behavioral problems of the child. This outcome is what Bronfenbrenner refers to as a proximal process (1999, pp. 6-9). A proximal process is one that is a joint function of two different processes, in the case of Drillien's research, a reciprocal relationship between

mother's interactions with the child and the child's behavior which clearly relates the impact of home environment on social-emotional factors.

Further support for the relationship between social-emotional development and parent-child interactions is found in results by a study conducted by Risken-Walraven (1978). They investigated the socio-emotional development nine-month-old babies in Netherlands. This study divided mothers and their nine-month-old babies into a group where mothers were taught to interact with their babies responsively while the other group of mothers interacted with stimulation. The responsive group was taught to allow the child to discover and then be praised for efforts while the stimulation group was taught to surround with stimulating experiences. The babies in the responsive group showed demonstrated a higher interest in more complicated objects as well as the act of exploring and they were proven to learn quicker in a variety of tasks. This result is consistent with Bronfenbrenner's (2006) explanation of social-emotional development within the context of the interaction of bio-ecological processes. Bronfenbrenner further suggests that parent interactions such as those described by Risken-Walraven (1978) indicated that children judged as securely attached in infancy have been shown to approach unfamiliar peers and adults more positively and with greater acceptance" (p. 816). That connection is clear in the aforementioned study with mother and their nine-month-old babies.

The family interactions other than just parent-child interactions have also been found to influence individual social-emotional development. Castro, Halberstadt, Lozada, and Craig (2014) discuss the importance of family processes with emotions in the home

environment. The developing child learns about understanding their own emotions and those around them through the emotional teaching and modeling of their parents. This study shows that with children who have been intentionally taught about this emotional recognition at home, there are far fewer reports of behavioral problems at school and teachers also report a higher instance of social competence in these students.

Parental Interactions related to children's school environment have also been suggested as having an important influence on the social-emotional development of children. For example, Metsapelto, Pulkkinen, and Tolvanen (2010) studied the influence of school environments on students' social-emotional development. They conducted this study with extracurricular activities that were based on the wishes of the children and their choices. Their results showed that students who participated in this targeted form of social-emotional development had significantly lower instances of anxiety and depression than the group of students who did not participate in the study. In order for the intervention to be effective, home support was necessary. Likewise, the results not only show the importance of intentionally providing opportunities for positive social-emotional development during the school day but also indicate the same need for this factor to be positively addressed within the home environment.

Specific to the role of social-emotional development and school environment are the interactions between student and teachers. Mortensen and Barnett (2015) researched the social-emotional development of young children based on their interaction with their teachers. These findings showed that children who could manage their own emotions and show age-appropriate social-emotional competency in kindergarten fared far better than

their peers who had less social-emotional development at the onset of their first years of public school. The kids who had been taught positive social-emotional skills in the home prior to entering school had higher literacy and math scores throughout their primary years and were reported to have better relationships with their peers. The implication here is clear: positive and intentional social-emotional development in the home environment translates to greater academic achievement.

Bronfenbrenner's Ecological Model of Human Development

Tudge, Mokrova, Hatfield, and Karnik (2009) conducted an extensive study in which they looked at a multitude of studies that applied Bronfenbrenner's model as a basis for human development. In reviewing what they deemed proper applications of the bioecological model, they were looking for research that adequately addressed the key concepts of the model which Bronfenbrenner coined Person, Place, Context, and Time; also acknowledging that a true study utilizing this model must include proximal process (the relationship of the above factors in regard to the individual's development) as well. They specifically note that the Person factor can be satisfied with the position of the father in the family and the severity of discipline that is implemented—that these impact development through a propensity to engage in problem behaviors. Tudge, Mokrova, Hatfield, and Karnik (2009) continue in their outline of applications for the bioecological model by explaining the proximal process (a key tenant of Bronfenbrenner's work) with the interactions that children have on a regular basis with people and things in their home and school settings.

Overview of the BioEcological Model

Urie Bronfenbrenner has pioneered the field of ecological models of human development as the body of his life work spans several decades and continues to increase in relevance today, even after his death. Bronfenbrenner first began his research using existing data from an 1870 study in Berlin that analyzed the impact that neighborhood conditions had on child development (1994). Up until the time of Bronfenbrenner's research, there has been an incredibly little amount of childhood development research outside of classroom practices and processes; exception to this is made in the form of home environment, as the plethora of conditions that constitute this arena have been often studied on individual terms, but generally with little or no connection to social-emotional factors, academic resilience, and or reading achievement.

Bronfenbrenner developed a ground-breaking theoretical model of ecological development that revolutionized our understanding of human development. The core feature of his two-part theory is that it proposes that human development from is not a destination (age 18, adulthood, graduation, marriage, etc.) but a life long journey that occurs where people are and life happens—thus the research follows suit (1994). The other main concept of Bronfenbrenner's developmental theory that sets it apart from some of the early theories is that it is living, breathing, and considers change over time—change being the process of development. His work in this regard built on earlier works, however, for example, Jean Piaget and his stages of development are very clear-cut stages and so are the psychosocial stages proposed by Erik Erikson. These two examples show how Bronfenbrenner built his work on the foundations of other research even

though he was simultaneously blazing a new trail in terms of understanding of human development and related research.

In its infancy, the ecological model seems to have emerged through the lenses of functionalism and symbolic interactionism as the general propositions focus on the relationships of people and their environments (think all-encompassing in this regard) (Bronfenbrenner, 1994). Additionally, Bronfenbrenner's ecological model explicitly identifies that the development experiences that sprout from and around these relationships will vary from person to person based on personal characteristics that are either magnified or minimized as a direct result of the very particular micro and macro environments that they are occurring in (Bronfenbrenner, 1994). In some sense, this model is less definable in its parts and characteristics when compared to traditional models of human development. Two examples that show this are Jean Piaget and his stages of development—these are very clear cut stages; the psychosocial stages proposed by Erik Erikson read like a script in that each stage leads to the next. While Erikson and Piaget's stages may afford some overlap in the transition from one to another, they do not occur simultaneously. Bronfenbrenner's model in this way considers the elements which earlier theories do not because while Piaget and Erikson focus on behaviors occurring at particular stages, like the use of symbols (Piaget, preoperational stage) or trying new things (Erikson, initiative versus guilt), Bronfenbrenner looks at the interactions among all the people and places that the developing person encounters throughout life and this model can be applied at any stage of development. Although more general in its proposes, this unquantifiable aspect of Bronfenbrenner 's ecological model opens an

entire frontier of applicable research possibilities that can actually benefit mankind as we seek to better understand this very important field of human development.

A key and defining characteristic of the ecological model is that the environment where development occurs is part of the context of development itself. Within this context are five socially organized subsystems: micro, meso, exo, macro, and chrono. Microsystems are personal relationships that occur in all areas of one's life; mesosystems are the unique connections each person has between his or her microsystems (like home and work); the exosystem is the connection that one has to other people's mesosystems because even though one is not a part of that mesosystem, it very much still impacts the person through the person involved in it; macrosystems are encompassed by the first three systems in an overarching way that we generally define as culture, customs, lifestyles, faith, beliefs, etcetera; the chronosystem is the timeframe in which all of the above occurs with special respect to the fact that it all changes and evolves or develops over time (Bronfenbrenner, 1994).

As Bronfenbrenner's research continued to evolve, so too did the model. In the 1990s, the ecological model itself shifted to a bioecological approach. The key addition is the distinction made between environment and process—another revolutionary development in the field (Bronfenbrenner, 1999). The processes characterizing bioecological development are defined as interactions that, in order to be significant, must occur regularly over time. Bronfenbrenner coined the term proximal process to describe these interactions, which are a key component of the bioecological model (1999). Proximal processes, as characterized by the bioecological model of human

development can also be viewed as the relationship between home environment and social-emotional factors.

Bioecological Model: Process, Person, Contexts, and Time

In a more recent publication, Bronfenbrenner (2006, p. 795, 801) restated the purpose of the ecological model in its discovery mode, that it is to facilitate alternative hypothesis and research that can be replicated while facilitating the design of elements which can counteract influences that are disruptive to human development. In this way, the implications for the bioecological model in education are abundant. Bronfenbrenner then goes on to define the model by four principal properties, which he says are synergistic and interdependent (p. 800).

Bronfenbrenner also introduced the process-person-context-time model as relationships that fit within the scope of the bioecological model. This concept works within the context of the bioecological model is because the person is now viewed as both a product and a producer of the development (Bronfenbrenner, 1999). Relating individuals, person to the process of development over time, serves as somewhat of a personal accountability measure in that this relationship acknowledges the reality that development is directly correlated to the level of engagement with the environment and the frequency with which this engagement occurs (Bronfenbrenner, 1999, pp. 5-6).

Process is the interaction; this involves proximal process. Process is the mode through which development is delivered. The compelling truth about process is that it is different for every person and impacted, changed, even limited by the individual characteristics of the other properties as experienced in and by the actual person (p. 795).

The Person is comprised of three main characteristics that have been shown to shape human development as an ongoing reality. The individual's dispositions are the first of these. Bioecological resources are the second (skill, ability, knowledge, experience, etc.) and play an important role in the effectiveness of the proximal process. The third of these is referred to as demand characteristics, which deal with the social environment's expectations on the individual in regard to either inviting or discouraging reactions. Bronfenbrenner does note, however, that age, gender, and ethnicity are quite definitive in this characteristic as they determine much about role and role expectations (Bronfenbrenner, 2006, p. 814).

Bronfenbrenner (2006) suggests that the role of context is a critical determinant of human development and likewise is unique to the bioecological model of human development that he has proposed. He refers to the key role of context in human development as "the growing hecticness, instability, and chaos in the principal settings in which human competence and character are shaped" (Bronfenbrenner, 2006, p. 796) and which include all aspects of home, neighborhood, and schooling. Bronfenbrenner suggests that time is the most revolutionary piece of the bioecological model (as it evolved from the ecological model) in that it has three very distinct and layered levels. Microtime is the consistency or lack of consistency of elements of the proximal process. Mesotime is the frequency with which these consistencies occur (in terms of days or weeks). Macrotime refers to generational and societal changes over time and how they are impacted by processes (p. 796). The most notable effects of ecological research are interactions (Bronfenbrenner, 2006, p. 802) and the bioecological model is clearly an

extension of that. Bioecological research and study then “show how development is influenced by variations in the components of the bioecological model occurring in already existing societies” (Bronfenbrenner, 2006, p. 808).

In summary, the Person, Place, Context, and Time components are key additions to Bronfenbrenner’s model as it evolved because they clearly define the reciprocal interactions of all components of the model. It is through these additions that both the evolving human (through development) and the evolving environment (because of the interactions that happen within) can be broadly utilized as an effective framework for development research. One of the most notable characteristics of Bronfenbrenner’s theory(s) of BioEcological development is the manner in which it can be used as both one theory of many phases and parts, or individual and different theories with different emphasis entirely. The three phases (or three versions of the theory) span from 1973 until his death in 2006. Rosa and Tudge (2013) point out that it is critical to make clear the phase or which part of the bioecological model is being used to understand human development. Their assertion does not mean that any part of the theory is outdated or inapplicable; in fact, quite the opposite is true. The theory has grown with Bronfenbrenner’s research over time—an indication of its strength, applicability, and provability. While the early phase dealt primarily with context on human development, and that remained an integral part of the theory throughout, the central point in the latest phase is what Bronfenbrenner referred to as proximal processes and the reciprocal influence those processes have with all contexts, time in its three tenses (past, present, and future), and people’s individual characteristics. Rosa and Tudge (2013) note that

Bronfenbrenner was prompted to initiate this research in its initial phase because, at the time, research was unable to answer many of the questions that were asked in relation to social policies dealing with families and the development of their children. Then, current practice was that social policy was informed by research, but Bronfenbrenner shifted that paradigm 180 degrees.

The second phase of the BioEcological theory began to explain the plethora of ways that conceptualization of the environment occurs. This phase also saw the introduction of the Person-Process-Context model, which is further developed in the third phase of the theory. The final phase sees the full emergence of the bioecological model with the focus on the “engines of development” (Bronfenbrenner & Evans, 2000, p. 118) as Bronfenbrenner refers to the proximal processes. This phase also saw the addition of the aspect of time to the model now known as Process-Person-Context-Time (PPCT), which is a foundational cornerstone of new applications of the emerging theory.

Academic Resilience

Academic resilience is a student’s ability to adapt successfully amidst academic circumstances that are perceived as threatening, challenging, or both (Cassidy, 2016). In schools that threatening is regarded as the acute adversity that negatively impacts educational development. Many students in these circumstances do not overcome them, but a significant number do. It is that reversal of misfortune into success that is considered academic resilience. Martin and Marsh (2006) point out that academic resilience translates to extra-curricular accomplishments in life and the hurdles, which students must ultimately overcome, are often rooted in experiences and conditions prior

to their current school status. Waxman et al. (2003) look at resilience through a slightly different lens considering it to be a set of processes and factors that mitigate stress-related behaviors and therefore result in academic achievement.

This characteristic is quite advantageous to students at all levels including the university. In the college context, students who have previously exerted successful levels of academic resilience are more likely to be able to cope with the pressures and stressors felt at the university level (Cassidy, 2016). Martin and Marsh (2006) mention that all students face difficulties at some point and that resilience-based interventions have the most positive academic effects.

Cassidy (2016) lists the most common characteristics associated with resilience as personal competence, social competence, self-acceptance, acceptance of life, adaptability, self-esteem, orientation towards action, strategizing for goal achievement, social support, problem-solving ability, family coherence, sense of humor, endurance, and external supports. One trait of academic resilience that should be added to this list is a parallel concept known as self-regulated learning. Zimmerman and Schunk (2001) define self-regulation as the internal control mechanisms that students have with their feelings and their thoughts as well as their actions. Another trait of academic resilience that research by Martin & Marsh (2006) has suggested as a defining characteristic is the construct of self-efficacy. Bandura (1997) describes self-efficacy in applicable terms here as how people judge their ability to plan and perform successful actions that ultimately lead to achievement of the pre-designated results.

Cassidy (2016) developed the Academic Resilience Scale (ARS-30) to measure student behaviors and attitudes that align with the construct of academic resilience. The ARS-30 consists of a set of thirty questions of which each relates to two hypothetical circumstances. In one circumstance a student must face his or her own academic deficiency and the other is an identical circumstance in which they are to respond as to what they think a hypothetical classmate should do in that same situation. The importance of the ARS-30 is that there now exists a tool for measuring students' academic resilience producing outcomes that can be used to address deficient attitudes and behaviors. During Cassidy's (2015) research when validating the ARS-30, he found a significant positive correlation between academic self-efficacy and resilience. These findings show that an effective method of building resilience in students is self-efficacy training.

Borman and Overman (2004) conducted a study on the academic resilience of poor and minority students related when learning mathematics. Their research focused on student behaviors and school environments that can be altered to support academic resilience. They found that all students, regardless of race, tended to benefit from both individual and school level resiliency-type interventions. Borman and Overman (2004) tested many different potential models of schooling to determine which was best suited for bolstering resiliency and what they discovered was that a model of a supportive school community most powerfully promoted academic resilience and that one of the key characteristics of those schools is that within them students are shielded from issues and stressors related to adversity. They note that the typical resilient student has both a high self-esteem and a high self-efficacy while being fairly autonomous; the child is strong

willed yet maintains a positive disposition and consequentially perseveres. However, one negative outcome was that limited access to resources provided both from within the school and the larger community has an adverse impact on academic resilience. While the provision of those resources has shown to have a powerful effect, Borman and Overman reveal that the most powerful contributor to academic resilience is efforts to shelter students from adversity and risk within the school, home, and community at large

The literature shows that social-emotional factors can influence student achievement. One factor that comes into the discussion here is academic resilience. The term academic resilience refers to students' ability achieve positive academic outcomes despite the adversities they face at home and school (Martin, 2013). Understanding academic resilience as a potential means to overcoming negative home environment and social-emotional factors may help lead more students to positive achievement outcomes.

Boon, Cottrell, King, Stevenson, and Millar (2011) advocate for applying Bronfenbrenner's bioecological model when identifying factors that support resilience. While the specific form of reliance their study focuses on applies to natural disasters, they acknowledge that there are some twenty-eight identifiable definitions of resilience (p. 384), which thereby makes reasonable allowance for application of their research to the concept of academic resilience. In line with the bioecological model, each of the various forms of resilience is developed over time and are as mutually supportive as they are interdependent (p. 392). Boon et al. (2011) point out that the history of the term itself dates back to research in the 1940s that dealt with at-risk children in relation to psychopathological disorders and that the purpose of studying resilience is "to understand

the complexity of community-environment interactions and the complexity of change” (p. 385). They propose utilizing the bioecological model for organizing resilience factors in relation to each individual’s ecosystem (the bioecological model as it translates to each individual person’s set of systems and relationships). At the core of this particular application is the idea that resilience is the measure of an individual (or a community’s) ability to overcome adverse elements that include anxiety, stress, and environmental pressures. While one can easily argue that the stakes are not as high in school as they are in natural disasters—live versus academic achievement—much of the same processes and types of governing emotions occur in the educational setting. Thus, just as we can see how to apply the bioecological model in terms of disaster resilience, so too can we see how it applies to academic resilience.

Attachment theory also relates well to academic resilience via home environmental impact on social-emotional factors. Bowlby (1988) states that people are supposed to have emotional connections with each other in intimate relationships and that basic human development (over the life course) is greatly impacted by how their parents treat them. Snyder, Shapiro, & Treleaven (2012) discuss the findings that depressed mothers tend to have negative interactions with their children which lead to behavior problems, but that positive interactions lead to better behaviors and healthier children.

Emotional Intelligence and Social-Emotional Development

The concept of emotional intelligence is also considered a social-emotional factor that influences student achievement (learning), but Salovey and Sluyter (1997) make a solid argument for intensified focus in this arena via their work on emotional intelligence.

This concept of emotional intelligence refers to one's ability to recognize and interpret the broad spectrum of emotions that one's self and others are feeling in real time. They describe this connection as what occurs between cognition and motivation—a key component in achievement. Salovey and Sluyter (1997) point out that not only is thinking altered by emotions but that “moods generally bias people's thoughts” (p. 5) and that conclusion is compellingly applicable to achievement. It is because of this that a heightened focus on students' emotional health (their social-emotional factors) is necessary; their social-emotional factors affect the way they think, how they are motivated, and consequentially, their achievement in all academic pursuits.

Billings, Downey, Lomas, Lloyd, and Stough (2014) point out that there is limited research in regard to emotional intelligence and young children's academic achievement. However, their work with 407 primary students in Australia utilizing a 68-item questionnaire does show some significant results. They discuss emotional intelligence as an ability that begins very early in childhood with progressively more complex elements as the developing person ages. They found significant correlations between emotional intelligence and both literacy as well as mathematics. More specifically, they discovered that understanding emotions, a key branch of emotional intelligence, accounted for eleven percent of the variance in both literacy and mathematics (p. 17). The need for educators and students alike to develop their emotional intelligence is imperative and that we do not view emotion and intelligence as adversaries; rather, recognition that emotions prioritize cognition is in order (Salovey & Sluyter, 1997).

Home Environment on Student Achievement

The home school Mesosystem, as discussed by Neihaus and Adelson (2014), is the extent to which parents are involved in their children's education. They shift their focus, however, to look at social-emotional outcomes rather than achievement and their findings show that parental involvement is effective in this regard. Neihaus and Adelson (2014) explain that children in homes where there is regular and consistent parental involvement, develop better social skills, have a more advanced social-emotional adjustment, and tend to experience far fewer behavior problems. They further suggest that the development of these characteristics in children is related to better academic outcomes.

Christian, Rounds, and Gourney (1992) analyzed home environment and family factors affecting student achievement. They acknowledge that a strong positive relationship between parental involvement and student achievement has been well documented and they use this to extrapolate their findings. They find that the term parent is better suited when replaced with the term family as the reality of today's youth is that so many of them are at least partially raised by those other than their parents (often when in conjunction with the parents too). They had five specific findings that they outlined: all parents generally want their children to perform well in school, the term involvement refers to home and school involvement in the education process, parents get more involved when they know that it impacts their child's success, teachers' prodding is the most effective element in instigating parental involvement, and successful programs

reach out and appeal to all parents with collaboration and comprehensiveness in mind in a convenient manner.

Four of the types of family processes identified by the research include parent expectations and attributions, structure for learning, affective home environment, and discipline (Christian, Rounds, and Gourney, 1992; Xia, 2010). They found that parental expectations are very complex and include numerous variables. High parental expectations have a consistent correlation to achievement. The structure for learning refers to what physical provisions are made to support and supplement learning and schoolwork within the home environment. Their findings showed that there was a significant correlation between the structure for learning and elementary students' reading achievement. The home affective environment deals with the emotional state that is produced by the parent/child relationship. They found that a positive affective home environment has a significant connection to students' persistence through challenging tasks and developing social competence. Discipline was defined by three styles; authoritarian, permissive, and authoritative. Only authoritative parenting has a positive correlation with achievement.

As Christian, Rounds and, Gorney point out, home environment is part of the person and environment interaction (Process, Person, Contexts, and Time) within the bioecological model. Childhood learning in the schools is influenced by their home context; this includes the parental structure factor. Parental structure has been shown to be an important determinant in student achievement. For example, Jeanne Paratore (2011) thoroughly studied the issue of home environmental impact on achievement. She

found that student achievement results varied significantly depending upon contextual factors. However, regardless of the amount of variance, it is clearly that there is a connection between parental engagement and student achievement. In a review of studies related to parental expectations, Paratore discusses a compilation of findings showing that parental expectations have a strong relationship with academic achievement, even more than parental involvement. (2011, p. 407). She found that in general students want to please their parents and what pleases the parents is clearly articulated as high academic expectations. Paratore contends that when students strive to please their parents there is a greater likelihood that they will put in the effort to meet those expectations. The burden, however, is on the educators to facilitate this paradigm shift in homes where this reality is not known or practiced.

Further evidence to support the importance of parental support on student achievement is found by a study conducted by Fires, Nichols, and Rickelman (2000). Their study demonstrated that an experimental group of first grade students' reading levels rose significantly greater than the control group when their parents received some at home training to assist their children reading and language acquisition skills. Again, the burden of facilitation of above support systems lies squarely with the school systems and the educators they employ.

Nailing Xia (2010) sought to identify connections between six particular home environment factors and achievement: these include available resources and learning structures provided as well as parental expectations, beliefs, discipline practices, and involvement. The results of Xia's study were significant, with moderate to large effect

sizes with the above home environment factors positively associating with student achievement. Additionally, Xia notes (2010, p. 30) that there was a significantly positive association reading achievement with the interactions of parents and their children.

Xia's results were replicated in a study by Heath et al. (2014) in Australia in which a whole 25% of the ninth graders in their study suffered from reading below the national grade level benchmark. They acknowledge the gap in literature between the "interactive contribution of both child and family factors" (p. 1) as part of the problem needing to be addressed. Taking this a step further, they argue that the diverse home environments that students come from in the very early years of their education explain the variance in student achievement and literacy acquisition.

Parental expectations have also been identified as another home environment factor that influences a child's academic achievement. Hoge, Smit, & Crist (1997) examined this relationship by conducting a longitudinal study of 300 middle school students and their home environment factors with special emphasis on parental expectations. In this study, they found that the most impactful home environment factor was parental expectations. These findings were even greater when specific disciplines were the focal point of those expectations in comparison to general expectations. As long as the expectations are realistic and thereby obtainable, Hoge, Smit, & Crist (1997) found that those expectations are strong predictors of student achievement.

Melhuish et al. (2008) point out that socioeconomic status factors account for only about five percent differences in achievement, and that is what led them to look for more significant explanations of learning and achievement gaps (p. 96). In their study of

pre-school students, they actually found that the greatest influence on student achievement was home learning activities. Hoge, Smit, & Crist (1997) found that the least impactful element was home learning environment, but their study included middle school students, not pre-school students. Their results suggest that there are likely age ranges of best applicability for home environment factors and the students' ages should be taken into consideration.

Reglin, Cameron, and Losike-Sedimo (2012) found evidence proving the power of (what Bronfenbrenner refers to as) proximal process for student interventions. They analyzed seventh graders who had failed reading examinations in the previous school year. The experimental group was set up with supports over a twelve-week period to guide parental intervention in which the parents received regular strategy helps in advance, were supplied with daily review questions, participated in attendance and school-importance discussions, received parental listening strategies, read aloud to their children, conducted teacher-student role play, and facilitated the use of word processing programs. After twelve weeks, the results were clear: the increase in reading scores was attributed to the above-structured support activities at home (Reglin, Cameron, and Losike-Sedimo, p. 23, 2012). While the above results are with at-risk students, Pillinger and Wood (2014) take it a significant step further in that they found the above literacy-related activities to account for over eighteen percent of the variance in reading scores in students overall. They suggest that this proves that what parents do is far more important than who parents are. Their findings also indicate that the most important take away herein is the correlation between the extent of the effect and the age of the student: the

younger the students are when the parents get involved in their literacy activities, the greater and more enduring the effects prove to be.

Ko & Chan (2009) suggest that a key component of the home environment academic achievement relationship is the volume of text that exists in the home. Their research suggests that while availability of reading materials is an indicator of the attitudes and beliefs held by the parents, Ko & Chan also conclude that the availability of diverse reading materials is a significant indicator of successful reading attainment. The utilization of the home resources predisposes children to reading skill acquisition, which facilitates more rapid development at school (p. 35). This study shows that students who have home access to more than one hundred texts have greater success in reading achievement.

Home Affective Environment, Student Social-Emotional Factors and Academic Achievement

Home affective environment is related to social-emotional development; however, the process of social-emotional development is also dependent on interactions with other persons (peers, significant others, teachers etc.) in the environment, and over time and within specific contexts. Christian, Rounds, and Gorney (1992) found that the emotional development in the home (home affective environment) plays a significant role in student achievement by way of their persistence through challenging tasks and developing social competence. Davis-Kean & Sexton (2009) further report that in the literature related to home environment and student academic success, parental warmth has been consistently related to student achievement.

As Christian, Rounds & Gorney found in their study, socio-emotional development is heavily dependent on the relationships that individuals have with their parents. Parental monitoring, for example, is one type of interaction in the home where parents where parents set and enforce expectations for achievement in both academic and extra-curricular activities. These expectations serve to promote the development of social-emotional behaviors related to self-regulation such as completing homework or chores prior to recreational activities or persisting in an extracurricular activity. A study conducted by Bailey in 2006 found that homework designed to include parental involvement not only improved parent-child engagement but also improved achievement. Just as importantly, as a result of parental involvement students evidenced improvements in social- emotional attributes such as feelings of competence and the development of more mature self-regulation skills. These outcomes from Bailey's study support Bronfenbrenner's concept of proximal processes having a positive impact on both social-emotional development and learning.

Another study conducted by Small and Luster (1990), investigated parental monitoring of over 4,000 students' home environments. They stratified the data based upon family makeup (both parents, mother only, father only) and parental education (high school only, education beyond high school). Utilizing a 12-point scaled student questionnaire and cross referencing it with students' grade point averages, the authors point out that this study showed that parental monitoring was a much greater indicator of achievement than the environments the monitoring occurs in. Although, Small and Luster conclude that parental monitoring is critical to academic success, this finding does not

negate the importance of other home environmental factors (such as discipline, parental makeup, the number of texts in the home, etc.) that may influence student academic success Bronfenbrenner (1999, p. 10) labels parental monitoring as proximal process and in that way we can see it as a bridge between home environment and achievement as well as home environment and social-emotional factors (which then, in turn, impact achievement as well), but the distinction should be made that home monitoring is still an aspect of, or at least rooted in, home environment.

Influences of School Environment on Social-Emotional Development and Achievement

Social-emotional factors often go overlooked in academic research that investigates various treatments designed to improve student academic success (learning etc.). These social-emotional factors are a result of the person's interaction with the environment, in particular, parents, peers, and significant others (Mortensen and Barnett, 2015; Metsapelto, Pulkkinen, and Tolvanen, 2010; Castro, Halberstadt, Lozada, and Craig 2014).

The traditional focus in teacher preparation is on content areas and longstanding pedagogical practices, however, emerging research is beginning to show that social-emotional factors ought to have their own focus in the forefront of classroom instruction (Hymel, Reichl, & Miller, 2006). Relationships tend to be the common thread through which social-emotional factors are gaged. At home, for instance, a key factor in social-emotional development is the relationships with parental figures that Bronfenbrenner considers a proximal process. At school, however, relationships with peers and teachers

are equal contributors to students' social-emotional health. Although these factors have not been a priority in public education, their effect on student achievement is starting to be more widely recognized. The above discussion has been proven through extensive research on children's relationships and significant connections have been made students developing issues with anxiety, depression, antisocial behavior, and low self-esteem; additionally, research is also pointing to the reality that there is a significant connection with social-emotional problems in primary students and their disengagement in secondary years (Hymel, Reichl, & Miller, 2006). Mark Greenberg (2006) brings notice to the fact that (at the time of publication) there was still no teacher preparation programs in North America that had any coursework aimed at social-emotional factors, and given the grave reality that these are legitimate educational issues, that is troubling.

Hymel, et al. (2006) lists five evidence-based reasons why social-emotional factors warrant classroom instruction and focus. The first of these is the sheer volume of students who experience serious problems in this regard—approximately one in five, yet seventy percent of these receive no help or intervention (p. 4). A key point of relevance which they make is that “children with internalizing disorder, including mood disorders such as depression and anxiety disorders, may suffer the most” yet these are often undiagnosed, untreated, and the most likely to negatively impact academic achievement (Hymel et al., p. 5). Their second reason is simply that the growth in awareness of this real problem has proven that this struggle in the classroom is real and cannot be ignored. Research by McKinney (1989) (McKinney and Feagans, 1984) shows that students with social-emotional/behavior disorders have rising behavior problems as they age and also a

steady decline in academic achievement. To this Hymel, et al. (2006) points to the need for safe and caring school environments that facilitate social emotional learning equally alongside academic learning. The third reason they mention is the all too often overlooked reality that the overarching mission of public education is stewarding good citizenship and that is not limited to learning and academic skills. To this end, Hymel, et al. (2006) point to recent reforms in Canada that mandate through their educational mission statements in various provinces the renewed focus on the dual and reciprocal issues of citizenship quality and social-emotional factors. Reason number four leans heavy on John Dewey and Lev Vygotsky in that “the development of the mind is a social process” (Hymel, Reichl, & Miller, 2006, p. 13); the essential message therein that social-emotional learning should not be an aside or an intervention in the classroom today, rather it is fundamental, a foundational brick of success in life and academic achievement alike. To prove this, they point to a 2005 study by Weissberg and Durlak showing that students who participated in social-emotional learning instruction actually achieved ten percentage points higher academically than did their peers who had not had that same training. Furthermore, Wentzel (1999) points out that positive social-emotional factors were actually better indicators of student achievement in middle school than the standardized testing that has recently reduced the time that teachers require to present critical curricular concepts. The fifth reason they give is simply that schools are already impacting social-emotional factors of their students via the hidden curriculum, and that impact would better serve students if it were guided, intentional, and properly trained and prepared for through teacher education and continuing education alike. Currently,

through the hidden curriculum we focus on sports and honor roll achievements, much less on arts, improvement, and extracurricular intellectual pursuits—and even less on positive social behaviors.

The translation of social-emotional factors impact on academic resilience occurs in the work by Ryan and Powelson (1999). In their research, they show how both engagement and disengagement of students can be directly linked to their senses of competence, belonging, and autonomy. This is a key issue because we are starting to see the emergence of a new school of thought that respects the social-emotional aspect of learning as legitimate as academics. That's huge, because as Hymel, Reichl, & Miller (2006, p. 17) point out, this work “on how the social context of the school affects academic performance is still in its infancy” thereby justifying the need for further research.

Viewing human development from a different perspective, we can see that home environment can impact the elderly just as it does school children. While the measurement for the elderly is no longer academic achievement, it is fair to correlate their longevity, health, and quality of life in the same way we look at the academic achievement of young children. This correlation is a fair one to make because both are measurable and quantifiable aspects of people at opposite sides of the age spectrum. Bronfenbrenner (1999) references a study conducted on the elderly in terms of environmental factors, but at a closer look, we can see that what is actually being measured clearly falls in the category of social-emotional factors (Langer & Rodin; Rodin & Langer, 1977). That is not at all to argue with Bronfenbrenner's method of

classification at all, however, it just shows that when the distinction of social-emotional factors is omitted, they naturally fall under a larger umbrella of home environment. The study was simple: a group of elderlies in a nursing facility were randomly assigned into two different groups in which everyone was given a plant; one group was told that staff would care for the plant, the other group was told that they had to care for the plant. For three weeks, these basic premises were revisited, instilled, and supported. Then the researchers came back eighteen months later. The results were astonishing, the group with responsibility for their plants were significantly happier, healthier, and had a death rate of half that of the other group (Bronfenbrenner, 1999, p. 13). We can see here that home environmental factors impact the social-emotional factors which thereby impact achievement—or, in the case of the elderly, longevity, and quality of life.

A similar study conducted by Riksen-Walraven (1978) in the Netherlands with mothers and their nine-month-old babies in which the groups were split by either being taught to interact with their babies responsively or with stimulation. The responsive group was taught to allow the child to discover and then be praised for efforts while the stimulation group was taught to surround with stimulating experiences. This study fits in the category of social-emotional because it is the seeds of mother interaction sprouting through initial behaviors that are instigated and supported by the environment. The babies in the responsive group showed demonstrated a higher interest in more complicated objects as well as the act of exploring and they were proven to learn quicker in a variety of tasks. Bronfenbrenner (2006) states “children judged as securely attached in infancy have been shown to approach unfamiliar peers and adults more positively and with

greater acceptance” (p. 816). That connection is clear in the aforementioned study with mother and their nine-month-old babies. Herein this study shows that social-emotional factors impact early childhood development, which is also an indicator of similar correlations applicable in school-aged children.

Chapter Summary

In summary, the subsystems of the bio-ecological model (micro, meso, exo, macro, and chrono) address every level of human development all the way from within and home to the farthest reaches of culture and exterior environment. With the addition of Person, Place, Context, and Time, Bronfenbrenner’s use of proximal process combines with the above socially organized subsystems to encompass all aspects that impact human development. The bio-ecological model is fundamentally about human development via the relationships people have with the various people and environments they have in their life. Furthermore, it takes into consideration the very real implications for development that include where (place), when (time), with whom (person(s)), and why (context).

The conceptual model designed for the purposes of this study utilizes the research, methodology, and approach of Bronfenbrenner’s bioecological model in a multifaceted manner. The subsystems and PPCT of the bio-ecological model serve as a lens through which to view the relationships outlined in the model for this study. This study’s model illustrates the reciprocal relationship between home environment and social-emotional factors, how those factors impact academic resiliency, and how all three affect reading achievement.

CHAPTER THREE

METHODOLOGY

Introduction

According to the Organization for Economic Cooperation and Development (OECD, 2014), Literacy rates in the United States continue to lag behind our global competitors—we are 15th of 27 ranked countries—and is it reasonable to attribute students' literacy development to foundational habits and attitudes that are formed early on in elementary years? For years, the primary focus regarding literacy rates has been on the instruction and intervention techniques facilitated by classroom teachers without consideration of Social-emotional factors outside of school—particularly at home—that are perhaps even greater predictors of students' literacy achievement than what is done in the classroom (Chiu, Hong, and Hu, 2015). While previous research has supported the belief that what happens at home extends and solidifies what happens in the classroom, the truth regarding literacy achievement very well may be that what happens in the classroom augments what happens at home (Bennett, Weigel, and Martin, 2002).

Nailing Xia (2010) refers to the Social-emotional factors as family process factors and reports that the research findings with family process factors and achievement are inconclusive as he found studies showing positive evidence and others showing insignificant or negative effects. His findings are supported by the imbalance that exists considering the number of research studies that focus on interventions to improve achievement as compared to studies focused on the influence of family factors and in

particular social-emotional factors that influence the cognitive development of students. For example, Horowitz-Kraus and Finucane (2016) recently completed an empirical study on reading interventions, which focused entirely on phonology, fluency, and comprehension—all necessary and relevant issues in reading skill acquisition, but still no mention of the Social-emotional factors which impact those facets of reading development. Findings from research that investigates the impact of Social-emotional factors on students' reading achievement will provide teachers, counselors, and school administrators with the information they need to not only plan and implement effective interventions to improve student achievement but also prepare families before intervention is necessary by guiding parents in that process.

The purpose of this study is to describe the relationship between Social-emotional factors, home environment, and academic resilience on reading achievement among third graders who participated in the Early Childhood Longitudinal Study-Kindergarten Class of 1998-1999 (ECLS-K), conducted by the National Center for Education Statistics (NCES, 2004). This study analyzed social-emotional factors of third-grade students and seeks to discover a relation between those factors and reading achievement. These factors are self-reported through the questionnaire as students responded to questions about their friends (number, quality, and impact), feelings of sadness, and feelings of worry. This data set may be cross-referenced with parental perceptions of the child from the ECLS Spring Parent Interview for the same students; the purpose of the cross-reference analysis would be to trace a connection between reported negative Social-emotional factors and

home environment. The research questions and hypotheses posed for this study are as follows:

Research Questions and Hypotheses

Research Question 1: Is there a relationship between academic resilience, home environment, social-emotional behaviors and Reading achievement?

H₀: There is not a relationship between Social-Emotional Behaviors and Academic Resilience

H₁: There is a relationship between Social-Emotional Behaviors and Academic Resilience

H₀: There is not a relationship between Social-Emotional Behaviors and Reading Achievement

H₁: There is a relationship between Social-Emotional Behaviors and Reading Achievement

H₀: There is not a relationship between Home Affective Environment and Academic Resilience

H₁: There is a relationship between Home Affective Environment and Academic Resilience

H₀: There is not a relationship between Affective Home Environment and Reading Achievement

H₁: There is a relationship between Home Affective Environment and Reading Achievement

Research Question 2: Is there a relationship between Home Affective Environment and Social-Emotional Behaviors?

H₀: There is not a relationship between Home Affective Environment and Social-Emotional Behaviors

H₁: There is a relationship between Affective Home Environment and Social-Emotional Behaviors.

Research Question 3: Does academic resilience mediate the effects of social-emotional and home environment factors on reading achievement?

H₀: Academic Resilience does not mediate the effects of Home Effective Environment on Reading Achievement

H₁: Academic Resilience mediates the effects of Home Effective Environment on Reading Achievement

H₀: Academic Resilience does not mediate the effects of Social-Emotional Behaviors on Reading Achievement

H₁: Academic Resilience mediates the effects of Affective Home Environment on Reading Achievement

Research Question 4: Does the relationship between academic resilience; home environment and social-emotional factors differ by gender, SES, or racial groups

H₀: The relationships between academic resilience, home environment, and social-emotional factors do not differ by gender, SES, or racial groups

H₁: The relationships between academic resilience, home environment, and social-emotional factors do differ by gender, SES, or racial group.

Research Question 5: Does academic resilience mediate the effects of social-emotional and home environment factors on reading achievement across gender, SES, and racial groups?

H₀: Academic Resilience does not mediate the effects of Social-Emotional Behaviors on Reading Achievement across gender, SES, and racial groups

H₁: Academic Resilience mediates the effects of Affective Home Environment on Reading Achievement across gender, SES, and racial groups.

Research Question 6: Is there a relationship between Home Affective Environment and Social-Emotional Behaviors across gender, SES, and racial groups?

H₀: There a relationship between Home Affective Environment and Social-Emotional Behaviors across gender, SES, and racial groups.

H₁: There a relationship between Home Affective Environment and Social-Emotional Behaviors across gender, SES, and racial groups.

Research Design

This is a quantitative research study utilizing secondary data analysis. The data comes from the public use data from the large-scale survey conducted by the Early Childhood Longitudinal Program (ECLS-K), Kindergarten 1998-1999 for the National Center of Educational Statistics. The data was collected from a large group of students who entered kindergarten in the 1998-1999 school year and were tracked all through their primary years. Data from third-grade student achievement measures and questionnaires, third-grade student parent questionnaires and third-grade teacher questionnaires. These data sources will be used as indicators of the constructs designed to measure third-grade

students' Home Affective Environment, Social-emotional Behaviors, Academic Resilience, and Academic Achievement. Structural equation modeling will be used to investigate the hypothesized relationships between home affective environment social-emotional behaviors, academic resiliency, and academic achievement.

Prior Research Using Structural Equation Modeling with ECLS-K 1998-1999 Survey Data

The use of structural equation modeling has been used in previous studies analyzing the ECLS-K complex survey data. For example, Beaver and Wright (2007) utilized the ECLS-K data to examine the stability of low self-control in young children. Specifically, they looked at the eighteen-month period of time from kindergarten through first grade. The hypothesis they were testing was to see if children under the age of eight exhibit low self-control as a stable characteristic. To analyze this data, they used structural equation models. Their findings showed that low self-control is relatively stable in early childhood. As Bodovski and Youn (2010) point out, structural equation modeling combines measurement components, as well as structural components in one model, and that is why it is ideal for analyzing a large data set with data entry points occurring over a period of time. They also used the ECLS-K data for their study in which they analyzed the long-term impact of what they called family emotional climate (essentially the combination of home affective environment and social-emotional status) on academic achievement and classroom behavior from kindergarten to fifth grade. Their findings showed that family emotional climate has a positive correlation with academic achievement and classroom behavior—negative family emotional climates were

indicators of lower achievement and negative behaviors while positive family emotional climates were indicators of higher achievement and less negative behaviors.

In a study by Beets and Foley (2008), we can see the breadth and depth of the ECLS-K data set as they analyzed kindergarteners' physical activity in correlation with father involvement and quality of neighborhood. Their multilevel structural equation model revealed that the amount of time that fathers spend with their kids had a positive correlation to the amount of engagement their children have in physical activity and that family sports done together also increase this engagement while neighborhood quality also had a significant and consistent impact (high-quality neighborhoods facilitated increased levels of physical activity while low-quality neighborhoods had decreased levels of physical activity). Lin, Lawrence, and Gorrell (2003) utilized the ECLS-K data set to look at children's readiness for school, as reported by kindergarten teachers. Their results showed that the social aspects of learning (akin to social-emotional status and classroom behavior) were heavy influences on students' readiness. They also found that readiness expectations varied based on geographic location, gender, and age.

Sackes, Trundle, Bell, and O'Connell (2010) looked at kindergarten science experiences in correlation to end of year science achievement in kindergarten as well as third-grade. Using structural equation modeling they could determine that early science experience in kindergarten is not an indicator of end of kindergarten and end of third-grade science achievement. However, their results indicated that cooking activities did positively impact science achievement. In their analysis, they do that the limitations of the science time and activities provided could be related to their limited effect.

Stapleton (2006) explains that structural equation modeling is ideal for analyzing large survey data sets because of its capacity to model complex relationships. The ECLS-K data set is such an ideal fit for structural equation modeling that she uses it as the model for her explanation of methods for large data analysis with data sets similar to and including the ECLS-K. She discusses the linearization method with cluster identifiers, the linearization method with stratum and cluster identifiers, the design effect adjusted weighting method, and the conventional method with design-effect adjustments of standard errors (p. 38). Stapleton (2006) further explains that weighting is necessary in order to limit error. She also recommends the software program LISREL for the analysis of structural equation modeling done with ECLS-K data.

Participants

The ECLS-K 1998-99 program employed a multistage probability sample design to select a nationally representative example of approximately 22,000 children who attended kindergarten during the 1998-1999 school year (U.S. Department of Education, 2004). The third-grade data was collected from base-year respondents from the 1998-1999 initial round of data collection and children sampled in first grade who had not been enrolled in kindergarten in 1998-99 and therefore had no chance of being included in the ECLS-K base-year kindergarten sample. As reported in the Early Childhood Longitudinal Study, Kindergarten Class of 1998-99 (ECLS-K) (U.S. Department of Education, 2009), a representative sample of kindergarteners enrolled in American schools was achieved through a the “multistage probability sample design” in which the first stage consisted of primary sampling units (PSUs) comprised of 1335 geographic regions (counties or

groups of counties) from which 100 geographic regions were then selected. According to the User's Manual for the ECLS-K Third-Grade Public-Use data file and Electronic Code Book (U.S. Department of Education, 2004), the PSUs in the base year were selected with probability proportional to size (PPS); this was on the quantity of students that were five years old. To ensure unbiased analyses, this sample was modified with the intent to oversample the amount of Asian and Pacific Islanders (APIs). The largest twenty-four PSUs, of the 100 that were selected, were part of the study with the designation of self-reporting (SR). The remaining seventy-six PSUs were then combined into groups of equitable sizes. There was a total of sixty-two groups. From this, cross-referencing the Metropolitan Statistical Area (MSA) with the census region created eight "superstrata." Using minority makeup, PSU size, and per-capita income, these groups were divided and two of the PSUs were chosen with Proportion Probability Sampling.

In the second stage, 1280 public and private schools offering kindergarten programs were sampled while in the third and final stage, an average of 23 kindergarteners was selected from each of the sampled schools. Asians and Pacific Islanders were over-sampled to ensure sample sizes large enough for subgroup analyses thus requiring the use of sampling weights to ensure that these groups are not overrepresented when analyzing data (U.S. Department of Education, 2004).

Both public and private schools were selected in the second stage of the sampling from the base-year using a frame that was designed utilizing then-current data from the schools. Department of Defense schools, as well as those listed with the Office of Indian Education Programs Education Directory, were included in the adjusted frame (U.S.

Department of Education, 2004). Based on kindergarten enrollment and the oversampled API, a systematic selection was conducted with the probability proportional to a weighted measure. In order to guarantee equitable representation across each stratum's characteristics, the schools were sorted accordingly.

Kindergarten students were selected from each school during the third stage of the base-year sampling with a design that was approximated to be self-weighting with precision goals met through meeting minimum requirements of API sample sizes. Sampling strata in the selected schools were used for grouping the students from the full list of kindergarten students who were enrolled at that time. The ECLS-K Combined User's Manual (U.S. Department of Education, 2009) reports that a sampling technique referred to as "equal probability systematic sampling" (p. 4-5) was used for selecting the students and there was a higher rate used for the APIs. The study's goal was to have 24 students selected, with parental consent, from each selected school. A census was taken of the kindergarten teachers during the fall semester, which was when students and teachers were linked together; new and special education teachers were added in during the spring semester. Special education teachers and students were linked accordingly during the spring as well.

Students included in this study came from diverse programs: public, private, full, and part day. Likewise, the students represent a broad range of ethnicities, racial backgrounds, and socioeconomic statuses from schools all over the United States. The data in this study comes not only from the students but also the parents and teachers. This study uses data gathered twice during these students' third-grade year (the data was

gathered every semester kindergarten through eighth grade). The data was collected via comprehensive survey questionnaires and focused on cognitive, emotional, social, and physical development of the children. Their home and school environments and activities were also focal points of the questioning.

Third-Grade ECLS-K Sample

The sample of ECLS-K third-grade children represents the cohort of children who were in kindergarten in 1998–99 or in first grade in 1999–2000. According to the User’s Manual for the ECLS-K Third-Grade Public Use Data File and Codebook 16,670 third-grade students were included in the third-grade sample (U.S. Department of Education, 2004). Since the third-grade sample did not include third graders students who did not have a chance to participate in the kindergarten or first-grade data collection, estimates from the ECLS-K third-grade data are representative of the third-grade population cohort rather than all third graders in 2001–02 (U.S. Department of Education, 2004). The characteristics of this sample of third-grade students then is not representative of third-grade students, third-grade teachers, or schools with third grades, but rather the 2001-2002 population cohort. The reason for this non-representativeness is that the third-grade sample was freshened that is third-grade students were added to the third-grade sample who did not participate during their kindergarten because they were out of the country. Thus, data from this sample of children does not represent all third graders in 2001-2002 who were kindergarten students in 1998-1999 and does not represent third-grade teachers, or schools with third grades during the 1998-1999 school year.

The third-grade participants for this study were only those students who had complete data from the Self-Descriptive Questionnaire (SDQ), Parent Interview and the Teachers Social Rating Scale (SRS). Data for a total of 10,395 third-grade students were analyzed for this study. Table 1 reports the demographic information for the third-grade students included in this study.

Table 1. Third-Grade Participant Demographic Data

Demographic Variable	n	Weighted Percent of Sample
Gender		
Male	5256	51.8
Female	5139	48.2
Socioeconomic Status		
Low SES	4326	47.9
High SES	6069	52.1
Race		
White	6629	57.1
Black	1110	16.0
Hispanic	1550	19.2
Asian	542	2.8
Native Hawaiian, other	136	.70
Pacific Islander		
American Indian or other	160	1.7
Alaska Native		
More Than One Race	268	2.5
Total Third-Grade Sample	10, 395	

It is important to note that all racial groups were included in the full third-grade analysis. However, due to sample size only the White, Black, and Hispanic third-grade students were included in the subgroup analysis.

Sample Weights

The User's Manual for the ECLS-K Third-Grade Public Use Data File and Codebook (U.S. Department of Education, 2004) explains that the "third-grade data were weighted to compensate for differential probabilities of selection at each sampling stage and to adjust for the effects of nonresponse (p. 4-17). Two key issues causing biased parameter estimates when using multistage, complex sampling designs as compared to a simple random sample design are (a) differential sampling rates/weights for subgroups of the population (e.g., Asians and Pacific Islanders were sampled at a higher rate) and (b) clustering of schools and students within the sampled geographic areas (Xu, 2008). Stapleton & Thomas (2008) explain that sample weights serve to bring biased sample proportions back in correspondence with the proportions of the known population proportions. The use of weights in analyzing data from complex surveys is important for obtaining unbiased parameter estimates. Several sets of weights were computed for third-grade to ensure representativeness of responses from survey instruments administered to sampled children and their parents, teachers, and schools. Weights were derived from third-grade cognitive and physical assessments for children, parent instruments, several types of teacher instruments, and several other school instruments.

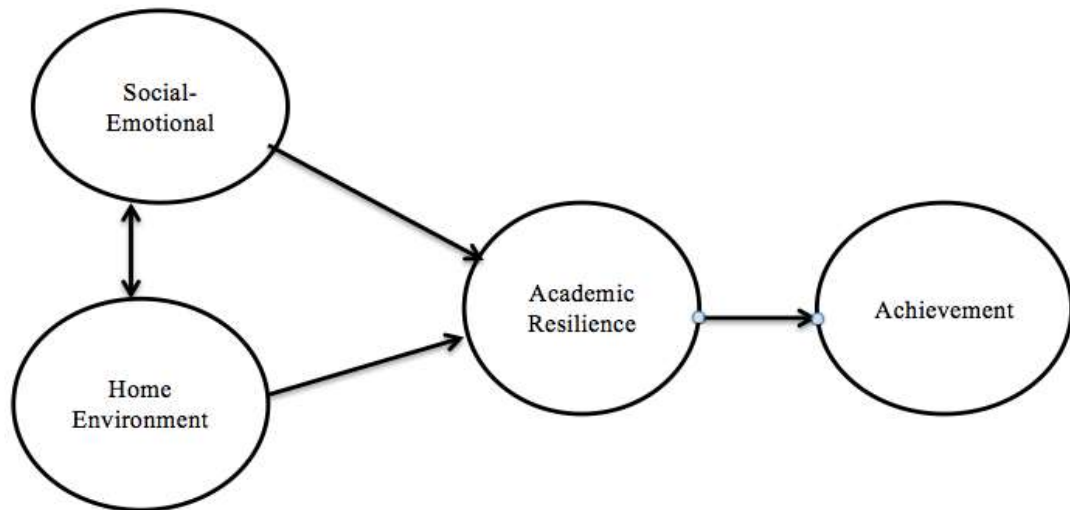
Variables

Data used for this study was taken from the Public-Use ECLS-K data files, which provides responses from direct child assessments, parent interviews, teacher and school administrator questionnaires, student records, and school facility checklists. The difference between the public use and restricted ECLS-K data file is that National Center

for Educational Statistics (NCES) modified the public data use files to minimize individual identification of children, parents, and teachers participating in the ECLS-K study. Variables that posed the greatest risk to privacy and confidentiality were either suppressed or modified variables to ensure that individuals participating in the ECLS-K data collection would not be identified. Although modifications were made to some variables, the overall quality of the data is not affected and will provide most of the information that researchers desire (U.S. Department of Education, 2004). The restricted ECLS-K data cannot be obtained unless a license is obtained from NCES.

For the purposes of this study, the public use ECLK-S 1998-1999 data provided the information needed. These data sources were used to operationalize the constructs investigated in this study, which include Home Affective Environment, Social-emotional Behaviors, Academic Resilience, and Achievement. The conceptual model representing the hypothesized relationships between these constructs is illustrated in Figure 3.

Figure 5. Hypothesized Relationships Between Home Environment, Social-Emotional Behaviors, Academic Resilience, and Achievement



Based on the research questions posed it is hypothesized that home affective environment will be related to home environment and both home environment will be indirectly related to academic achievement while academic resilience will mediate the effects of home environment and social-emotional behaviors on academic achievement. The constructs investigated for this study were operationalized by using items from the Third-Grade Self-Descriptive Questionnaire (Social-emotional Behaviors), Third-Grade Parent Interview (Home Affective Environment), Third-Grade Reading (Reading Achievement), Third-Grade Mathematics (Math Achievement), and the Approaches to Learning (Academic Resilience) items from the Teacher Social Rating Scale (SRS).

Table 2. Categorized List of ECLS-K Outcome

ECLSK Code	ECLS-K Variable	Data Source	Scale
<u>Academic Resilience</u>			
RDC5SDQ	Reading Competence	SDQ	Average score of child's ratings of reading items from the SDQ
T4SRS24	Pays attention well	Teacher SRS	Four points ranging from 1 = Never to 4 = Very often
T5SRS11	Keeps belongings organized	Teacher SRS	Four points ranging from 1 = Never to 4 = Very often
T5SRS14	Shows eagerness to learn new things	Teacher SRS	Four points ranging from 1 = Never to 4 = Very often
T5SRS15	Works independently	Teacher SRS	Four points ranging from 1 = Never to 4 = Very often
T5SRS21	Easily adapts to changes in routine	Teacher SRS	Four points ranging from 1 = Never to 4 = Very often
T5SRS23	Persists in completing tasks	Teacher SRS	Four points ranging from 1 = Never to 4 = Very often
T5SRS24	Pays attention well	Teacher SRS	Four points ranging from 1 = Never to 4 = Very often
T5SRS26	Follows classroom rules	Teacher SRS	Four points ranging from 1 = Never to 4 = Very often
<u>Social-Emotional Behaviors</u>			
C5SDQEX	Average of Externalizing Problem Behavior Items	3 rd Grade SDQ	Average score for 6 items. Four-point scale ranging from 1 = Not at all true to 4 = Very true
C5SDQINR	Average Internalizing Problem Behavior Items	3 rd Grade SDQ	Average score for 8 items. Four-point scale ranging from 1 = Not at all true to 4 = Very true
<u>Home Affective Environment</u>			
P5WARMCR	{child} and I often have warm times together	3 rd Grade Parent Interview	Four points ranging from 4= Completely True to 1 = Not at all True
P5CHLIKE	Most of the time I feel that {child} likes me and wants to be near me	3 rd Grade Parent Interview	Four points ranging from 4 = Completely True to 1 = Not at all True

Table 2 Continued

ECLSK Code	ECLS-K Variable	ECLS-K Variable	Scale
P5SHOWLV	Even when I am in a bad mood I show {child} a lot of love	3 rd Grade Parent Interview	Four points ranging from 4 = Completely True to 1 = Not at all True
P5EXPRES	I express affection by hugging, kissing and praising {child}	3 rd Grade Parent Interview	Four points ranging from 4=Completely True to 1 = Not at all True
P5FEELAN	I often feel angry with {child}	3 rd Grade Parent Interview	Four points ranging from 1 =Completely True to 4 = Not at all True
P5CHHARD	{Child} seems harder to care for than most	3 rd Grade Parent Interview	Four points ranging from 1 =Completely True to 4 = Not at all True

Reading Achievement

C5R4RTHT	Reading Theta Score	3 rd Grade Reading Test	The IRT scale scores in reading can take on any values between 0 and 186
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Mathematics Achievement

C5R4MTHT	Mathematics Theta Score	3 rd Grade Mathematics Test	IRT scale scores in mathematics range from 0 to 153
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Socioeconomic Status

W3DADSCR	Father's Prestige score	3 rd Grade Parent Interview	Twelve income ranges where \$5,000 defines the bottom of the lowest range and 200,001 or more defines the highest range.
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Table 2 Continued

ECLSK Code	ECLS-K Variable	ECLS-K Variable	Scale
<u>Socioeconomic Status</u>			
W3MOMSCR	Mother's Prestige score	3 rd Grade Parent Interview	Twelve income ranges where \$5,000 defines the bottom of the lowest range and 200,001 or more defines the highest range.
P5SAFEPL	How Safe in Neighborhood to play outside	3 rd Grade Parent Interview	1= Not Safe at All, 2 = Somewhat Safe, 3 = Very Safe
P5GARBAG	Garbage, litter on Street	3 rd Grade Parent Interview	1= Not Safe at All, 2 = Somewhat Safe, 3 = Very Safe
P5DRUG	Selling/Using Drugs in Area	3 rd Grade Parent Interview	1= Not Safe at All, 2 = Somewhat Safe, 3 = Very Safe
P5BUGLAR	Burglary/Robbery in the Area	3 rd Grade Parent Interview	1= Not Safe at All, 2 = Somewhat Safe, 3 = Very Safe
P5VIOLENT	Violent Crime in the Area	3 rd Grade Parent Interview	1= Not Safe at All, 2 = Somewhat Safe, 3 = Very Safe
P5VACANT	Vacant Houses in the Area	3 rd Grade Parent Interview	1= Not Safe at All, 2 = Somewhat Safe, 3 = Very Safe
<u>Gender</u>			
R5GENDER	Child Composite Gender		R5GENDER
<u>Ethnicity</u>			
W3RACETH	Ethnicity	3 rd Grade Parent Interview	1 = White, 2 = Black/African American, 3 = Hispanic (Race specified), 3 = Hispanic (Race not specified), 4 = Asian, 5 = Native Hawaiian Other Pacific Islander, 6 = American Indian or Alaska Native, 7 = More Than One Race, NonHispanic.

Social-Emotional Behaviors

The Third-Grade Student Descriptive Questionnaire (SDQ) was administered in order to obtain a measurement of the Social-emotional development of children. The items for the third-grade SDQ were adapted from the Self Descriptive (11) developed by Marsh (1992). The items for the SDQ are based upon 42 questions in which children rate themselves based on their competence and interest in three categories: all subjects, mathematics, and reading. Their rating scale was a four-point system ranging from “not at all true” to “very true.” SDQ items are divided into six subtests assessing third students, perceptions of their reading, mathematics, all school subjects, and peer relationships. The anger and distractibility, and sadness, loneliness, and anxiousness items are collapsed into two subtests represented externalizing (anger, distractibility) internalizing behaviors (loneliness, sad and anxiousness) Test administrators read the test questions to each of the students and they were allotted a few seconds to mark each response. The administrators were trained not to remain unresponsive to all answers so that they did not impact or lead the student responses. Each questionnaire lasted the duration of approximately five minutes.

The reliabilities are all acceptable as we generally want the Alpha Coefficient to be .80 or higher. The Alpha Coefficient of perceived interest/competence in math and reading were .90 and .87, respectively, while internalizing problems Alpha Coefficient was .81—also acceptable. Externalizing problems and the perceived interest/competence in peer relations and all subjects were very close to the .80 threshold at .77, .79, and .79, respectively. The reliabilities for the third-grade SDQ subtests are presented in Table 3.

Table 3. Self-Descriptive Questionnaire (SDQ) scale reliabilities for Spring Third-Grade School Year 2001-2002.

Description	Number of Items	Alpha Coefficient
Perceive Interest Competence - Reading	8	.87
Perceive Interest Competence – Math	8	.90
Perceive Interest Competence – All Subjects	6	.79
Perceive Interest Competence – Peer Relations	6	.79
Externalizing	6	.77
Internalizing	8	.81

Table note. Reliability information obtained from (U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 1998–99 (ECLS-K), spring 2002

The Self Descriptive Questionnaire items were originally developed and validated by Marsh, (1990). He wrote items to assess student’s perceptions of their competence for 13 academic areas and found that through factor analytic studies that perceived competence is very subject specific. Results published in the SDQ – II technical manual and other research conducted by Marsh (1990, 1992) support the construct validity for the six subtests designed to assess student perceptions of their reading, mathematics, all school subjects, peer relationships, anger and distractibility, and sadness, loneliness, and anxiousness further supports the use of items for assessing perceived competence in reading, mathematics, and all subjects for the ECLS-K third-grade students.

The thirteen third-grade indirect and direct measures were correlated and examined for evidence of convergent and discriminant validity. The indirect measures included the six teacher rating scales created to assess students’ language and literacy, Mathematical Thinking, Science, Social Studies, Approaches to Learning, Interpersonal skills, and Self Control. In addition, the three indirect Self-Descriptive Questionnaire measures were included that assessed children’s perceptions of the competence in reading, math, and all

subjects. The three direct cognitive third-grade assessments were for reading, math, and science.

Inter-correlations among the indirect and direct cognitive measures show that language/literacy was highly correlated with direct reading assessment while mathematical thinking was correlated with the assessment of direct mathematics. However, teacher ratings of third-grade students' science skills were more highly correlated with both reading and mathematics direct cognitive assessments than with the direct measure of science. The relatively low convergent validity is a result of the high correlations among the indirect measures of cognitive ability from teacher and child ratings. These interactions ranged from .77 to .83. Correlations of this magnitude are unlikely to show strong differential relationships with other variables designed to assess similar constructs.

Academic Resilience

Academic resilience is similar to the general construct of resilience but with particular attention to adaptive behaviors related to academic success. Wang, Haretal, & Walberg, 1994, define academic resilience as the “the heightened likelihood of success in school and other life accomplishments despite environmental adversities brought about by early traits, conditions, and experiences (p. 46). Studies related to academic resilience suggest that individual self-perceptions about themselves in current and future achievement situations are one of the key contributors to academic resilience (Cassidy, 2016; Martin & Marsh, 2006).

A key trait of academic resilience is self-regulated learning behaviors (Cassidy, 2016; Martin & Marsh, 2009). The concept of Self-Regulated Learning is characterized by Zimmermann and Schunk (2001) as the way in which learners' control their thoughts, feelings, and actions in order to achieve academically. Third-grade student responses to items on the SDQ that measure self-perceptions of external and internal problem behaviors will be used as indicators how effectively learners control these potential problem behaviors. In addition, the Approaches to Learning items from the Teacher Social Rating Scale (SRS) will be used to assess students' academic behaviors within their classroom environment.

Academic Resilience was assessed using items from the Teacher Social Rating Scale (SRS). Third-grade teachers were asked to use the Social Skills Rating Scale (SRS) developed by Gresham & Elliot, 1990) to indicate the frequency with which student exhibited certain social skills and behaviors. The third-grade SRS is comprised of 26 items which were written to six specific behavioral areas: Approaches to Learning, Self-Control, Interpersonal, Externalizing Problem Behaviors, Internalizing Problem Behaviors, and a combination of Self-Control and Interpersonal (Peer Relations). The Approaches to Learning Items will be used as indicators for the academic resilience.

The reliabilities for each of the five behavioral scales were found to be high. Split half reliabilities reported in the ECLS-K technical manual were: Approaches to Learning = .91, Self-Control = .79, Interpersonal = .89, Externalizing Problem Behaviors = .89, Internalizing Problem Behaviors = .76 and Combination of Self-Control & Interpersonal (Peer Relations = .92). Construct validity was established by using exploratory and

confirmatory factor analysis techniques to demonstrate that items clustered into the behavioral subdomains they were written to assess (Gresham & Elliot, 1990).

Third-Grade Parent Interview

Children who have a positive affective relationship with their parents are more likely to initiate and persist in challenging intellectual tasks (Estranda, Arsenio, Hess & Holloway, 1987) and engage in positive social behaviors with their peers and others. Lack of parental warmth (Dodge & Pettit, 2003) and a coercive parent-child relationship characterized by harsh discipline and negative reinforcement creates a home environment that thwarts the development of positive socialization and the acquisition of behaviors related to school success (Christenson, Rounds & Gorney, 1992). The Discipline, Warmth, and Emotional Supportiveness (DWQ) items from the Third-Grade Parent Interview were selected as indicators of Home Affective Environment.

The third-grade parent interview utilized a process known as a computer-assisted interview (CAI). This was done mostly in English but exceptions were made for non-English speaking parents. While a small minority, only two percent, of the interviews were done in person, the majority were phone interviews. The third-grade parent interview conducted in the spring of 2002 consisted of 500 questions that were asked in an average of 62 minutes per interview. These questions focused on home environment, parental involvement, and family structure. The spring interview conducted added questions about reading materials in the home, parental reading, and if there was a specified schoolwork station at home for the student to work on homework.

A wide array of procedures for quality assurance was in place throughout data collection. Quality assurance was a heightened focus during assessments. Extensive testing of the Computer Assisted Interviews and telephone interviews was conducted for parent interview data collection. The design staff, programmers, and statistical managers reviewed this thoroughly. Procedures in the field were aimed at attaining the highest possible amount of cooperation thus limiting nonresponse issues.

The ECLS Third-Grade Users Guide for Public Use data files describes the procedures for ensuring the technical adequacy of the third-grade parent interviews. They write that field supervisors evaluated the Accuracy of data collection by assessors when conducting the third-grade parent interviews. Supervisors conducted two observations for each of the 266 assessors who completed training. The first observation was made within 2 weeks of the start of the assessments, and the second observation within 3 weeks of the first observation. Their field supervisor validated approximately 10% of the interviews from each assessor. A field supervisor always validated the first parent interview conducted by an assessor. The validation procedure consisted of the field supervisor verifying the child's name, date of birth and sex in addition to re-asking 8-10 questions from the parent interview. Field supervisors also visited with school principals to obtain information about the overall assessment process, feedback about the study from parents and teachers, suggestions for improvement, and general comments and suggestions.

Reading Achievement

The third-grade reading test was written to assess students' comprehension, vocabulary skills, phonemic awareness, and single word decoding ability. This contained a total of five proficiency levels including the ability to read words in context and recognizing sight words were carried over from K-1 test and added into the third-grade assessment as well. Evaluation, extrapolation, and literal inference were added as higher proficiency levels at this level as well. Reading items were written to assess the following reading clusters:

- (1) Letter recognition: identifying upper- and lower-case letters by name,
- (2) associating letters with sounds at the beginning of words,
- (3) Ending sounds: associating letters with sounds at the end of words,
- (4) Sight words: recognizing common "sight" words,
- (6) Comprehension of words in context: reading words in context,
- (7) Literal inference: making inferences using cues that are directly stated with keywords in text,
- (8) Extrapolation: identifying clues used to make inferences, and using background knowledge combined with cues in a sentence to understand use of homonyms, and
- (9) Evaluation: demonstrating understanding of author's craft (U.S. Department of Education, 2005, p. 4-14).

The third-grade cognitive assessment measured students' achievement in the spring of that school year and was designed to measure growth from kindergarten until

that point. The development and design of these pieces were created with direct consultation of elementary education and child development professionals. This helped keep the focus on standard elementary curriculum and main academic subjects with the understanding that these play huge roles in the building blocks of each student's knowledge and skill base as learned and developed over time through schooling.

Third-grade reading scores were derived using Item Response Theory (IRT) methods. The User's Manual for the ECLS-K Third-Grade Public Use Data File and Codebook (US. Department of Education, 2004) explains that IRT methods use the pattern of item responses (right, wrong, omitted) in addition to the item difficulty, discriminating ability, and the probability of guessing to place each child on a continuous ability scale. The items written to assess third-grade achievement are indicators of the latent traits measured: reading, mathematics and social studies. IRT methods use probability or item characteristic curves to estimate the probability that a student will obtain a correct score when accounting for item difficulty, discrimination, and guessing. Based on the pattern of correct, incorrect or omitted responses across a test (e.g., reading), students then are placed on a continuous ability scale of theta scores where high scores represent high achievement and low scores represent low achievement. The advantage of using IRT methods is that scores are derived that can be compared across different test forms and different groups of test items and the item parameters (difficulty, discrimination, guessing) are invariant or are the same for different populations. The invariance characteristic allows linear transformations that equate item parameters across groups (DeMars, 2010).

The IRT scale scores in reading can take on any values between 0 and 186, representing estimates of the number of items students would have answered correctly if they had taken all of the 186 questions. Similarly, the IRT scale scores in mathematics range from 0 to 153, corresponding to the possible number of correct answers students would have made out of the 153 items in the mathematics assessment forms (U.S. Department of Education, 2004)

Reliability statistics for reading were calculated for total scores, cluster scores, and proficiency levels. The reading item cluster scores were derived for small subsets of items written measure specific reading skills (e.g., decoding, literal inference, extrapolation, evaluation). Proficiency scores are criterion-referenced scores based on the number of items answered correctly for a specific skills cluster. Students needed to correctly answer 3 of 4 items for each proficiency cluster. The ECLS-K statisticians used IRT estimates of the combined total reading scores, cluster scores, and proficiency levels to produce reliability estimates. Reliability for the overall spring third-grade reading assessment was .94 (U.S. Department of Education, 2005).

Evidence for the content validity of the third-grade reading test was established by content reading specialists who wrote items developed to assess performance standards expected by national and state reading assessments. In addition, the scope and sequence of reading materials from states and major publishers were considered also when developing reading assessment items. In addition, items were screened by specialists and field tested to ensure that content, difficulty, relevance, and minority sensitivity were all deemed appropriate. The National Assessment of Educational Progress (NAEP) were

also utilized in the creation of the frameworks to help define reading skills that third-grade students are expected to have mastery of upon entry to fourth grade.

Inter-correlations among the indirect and direct cognitive measures were used to show evidence of convergent and discriminate validity. According to ECLS-K Third-Grade Psychometric Report (2005) evidence for convergent validity was demonstrated by the moderate (.65) correlation between teaching ratings of language and literacy thinking and the direct assessment of reading. Although the third-grade reading and mathematics tests were found to be highly correlated (.73), evidence for discriminate validity was found when examining the correlations among other variables. The correlations between the third-grade reading assessment and teaching ratings of mathematics (.53), science (.53), social studies (.50) were found to be moderate while correlations with SDQ reading (.04), math (.18), and all subjects (.01) were very small. The convergent validity for the reading assessment like the math assessment was found to be relatively low due to the high inter-correlations (range from .77 to .83) among the indirect measures (teacher ratings) of student cognitive skills. Although there is evidence for discriminate validity, the high correlations among the indirect measures prevents capturing enough variability among the other variables necessary to yield correlations high enough to identify strong differential relationships among the other variables (reading, mathematics, science, and social studies and the SDQ subtests). Finally, the third-grade ECLS-K reading scores were compared to the third-grade reading scores from the Woodcock-McGrew-Werdner Mini-Battery of Achievement to establish the validity of the content of the items written to assess the reading clusters and overall reading achievement. The correlation (validity

coefficient) between the Woodcock-McGrew-Werdner Mini-Battery of Achievement and the ECLSK reading test was .83.

Mathematics Achievement (U.S. Department of Education 2005)

The third-grade math test assessed five strands of content. One being measurement; pattern, functions, and algebra was another; also included was number sense, operations, and properties; spatial sense and geometry was a strand; probability, statistics, and data analysis was also included as a strand. Looking at their problem solving, procedural, and conceptual abilities at each level was the procedure for assessing students' cognitive processes. Four proficiency levels were used for the third-grade math test. Like the ECLS-K reading assessment, the ECLS-K mathematics scores were derived using IRT methods. Reliability statistics for the mathematics test were calculated for total scores, cluster scores, and proficiency levels. The mathematics item cluster scores were derived for small subsets of items written measure specific math skills.

The ECLS-K 1998-99 Psychometric Report for the Third-Grade (2005) reports that the mathematics test clusters assessed included:

- (1) Number and Shape: identifying some one-digit numerals, recognizing geometric shapes and one-to-one counting up to ten objects;
- (2) Relative Size: reading all one-digit numerals, counting beyond ten, recognizing a sequence of patterns, and using nonstandard units of length to compare the size of objects;
- (3) Ordinality, Sequence: reading two-digit numerals, recognizing the next number in a sequence, identifying the ordinal position of an object, and

solving a simple word problem;

(4) Addition/subtraction: solving simple addition and subtraction problems;

(5) Multiplication/division: solving simple multiplication and division problems and recognizing more complex number patterns,

(6) Place value: demonstrating understanding of place values in integers to the hundreds place, and

(7) Rate and measurement: using knowledge of measurement and rate to solve word problems (p. 4- 22).

Proficiency scores are criterion-referenced scores based on the number of items answered correctly for each skill cluster. The criterion for proficiency was correctly answering 3 of 4 items correctly. The ECLS-K statisticians used IRT estimates of the combined total reading scores, cluster scores, and proficiency levels to produce reliability estimates. Reliability for the overall spring third-grade mathematics assessment was .95 (U.S. Department of Education, 2005)

Evidence for the content validity of the third mathematics test was also established by content reading specialists who wrote items developed to assess performance standards expected by national and state reading assessments. In addition, the scope and sequence of math materials from states and major publishers were considered also when developing reading assessment items. In addition, items were screened by specialists and field-tested. As with the third-grade reading assessment, assessing taught and developmentally important cognitive skills is the purpose of the ECLS-K. These frameworks came from numerous sources including, commercial

assessments, state assessments, national standards, state standards, as well as the input from teachers and curriculum experts nationwide. The National Assessment of Educational Progress (NAEP) were also utilized in the creation of the frameworks to help define math skills third-grade students are expected to have mastery of upon entry to fourth grade. While current curriculum was used, so too was the recommendations for curricular change since curriculum exists as an ever-evolving aspect of education.

Similar to the ECLS-K third-grade reading test, inter-correlations among the indirect and direct cognitive measures were used to show evidence of convergent and discriminate validity. Evidence for convergent validity, reported in the ECLS-K Third-Grade Psychometric Report (U.S. Department of Education, 2005) was demonstrated by the moderate (.59) correlation between teaching ratings of mathematical thinking and the direct assessment mathematics. Although the third-grade math and reading tests were found to be highly correlated (.73), evidence for discriminate validity was found when examining the correlations among other variables. The correlations between the third-grade math assessment and teaching ratings of reading (.53), science (.53), social studies (.42) were found to be moderate while correlations with SDQ reading (.05), math (.11), and all subjects (.01) were very small. The convergent validity for the math assessment like the reading assessment was found to be relatively low due to the high inter-correlations (range from .77 to .83) among the indirect measures (teacher ratings) of student cognitive skills. Although this is evidence for discriminate validity, the high correlations among the indirect measures prevent capturing enough variability among the other variables necessary to yield correlations high enough to identify strong differential

relationships among the other variables (reading, mathematics, science, and social studies and the SDQ subtests). As with the third-grade ECLS-K reading test, ECLS-K third-grade mathematics scores were compared to the third-grade mathematics scores from the Woodcock-McGrew-Werdner Mini-Battery of Achievement to establish the validity of the content of the items written to assess the mathematics clusters and overall mathematics achievement. The correlation (validity coefficient) between the Woodcock-McGrew-Werdner Mini-Battery of Achievement and the ECLSK reading test was .84.

Group Variables

Socioeconomic Status

Family and child background variables were used to control for other sources of variation in achievement other than socio-economic status (SES), parental education, gender, type of school, and ethnicity. Studies demonstrate that family economics have substantial influence on the quality of parent-child interactions (Bradley & Corwin, 2002). Low poverty family situations have been related to parenting styles that are more punitive, arbitrary, and inconsistent thus negatively influencing the cognitive development and social-emotional development of their children (Cooper et al., 2010; Davis-Kean, 2005; Duncan, Yeung, Brooks-Gunn & Smith, 1998; Li-Grinning et al., 2010). Related to SES is the influence of parental education on student achievement. Schlee, Mullis & Shriner (2009) find that children whose parents are better educated and earn higher incomes, obtain higher SES complete more years of schooling.

For the purposes of this study, socioeconomic status was operationalized by using

a composite variable consisting of parent's prestige score. The parental prestige score was derived by the ECLS-K 1998-99 program by combining data from household income, parent education and parent occupation. Research related to measuring socioeconomic status has also suggested that neighborhood conditions also be considered (Duncan & Magnuson, 2005). Therefore, in addition to the parental prestige score, six items measuring neighborhood conditions were also used to develop a composite measure of SES. The overall indicator of SES was a composite score consisting of the sum of parent's prestige scores and the six neighborhood item scores (see Table 2).

Race

Race is another important background variable that should be controlled for when investigating the influence of home environment on social-emotional behaviors, academic resilience, and achievement. Studies suggest that the race of a child heavily influences their academic achievement and is also related to their family's SES (Bradley & Corwin, 2002). The close relationship between race and SES needs to be controlled for to allow for a clearer interpretation of the effects of affective home environment regardless of race or SES on social-emotional development, academic resilience, and achievement.

Gender

Gender differences have also been found to influence academic achievement. Research suggests when examining similar age groups, girls tend to exhibit more advanced cognitive and non-cognitive skills than boys (Bertrand & Pan, 2103). A study

using the ECLS-K 1998-1999 data by Bertrand & Pan (2103) suggest the parent-child interaction are different for girls and boys and may be responsible for girls' higher levels of cognitive and social skills. For example, they found that parents are more likely to read to girls, take them to a concert, and sign them up for extracurricular activities than boys. In addition, parents of daughters report being less likely to play with their child as compared to parents of sons.

Procedures and Data Analysis

The first step in this analysis will be to select the indicator variables used to measure the constructs for this study using the ECLS-K Electronic Codebook (ECB). The (ECB) is a downloadable software package that allows for viewing, selecting, and downloading items for analysis. The ECB creates the syntax necessary based on the software package used (e.g., SPSS, STATA, SAS) for exporting items for analysis. Items presented in Table 4 as indicators to measure the latent traits of Home Affective Environment, Socio-Emotional Behaviors, Student Achievement will be downloaded to an SPSS data file for analysis. The Teacher Social Rating Scale items are located in a separate SPSS file and will be added to the SPSS data file created using the ECB to create the final dataset for analysis.

Once the data file is created, the items were screened for missing data. Previous studies (e.g., Benson & Borman, 2010; Niehaus & Adelson, 2014) using ECLS-K 1998-1999 data suggest that it is likely that multiple imputation procedures will need to be implemented to address missing data. Multiple imputations examine the patterns of missing data and replace each missing value with a set of plausible values to generate

multiple complete data sets that are evaluated and used for analysis often sufficient in multiple imputations (Rubin, 1996).

Once the final dataset was downloaded, an exploratory analysis using descriptive procedures, exploratory factor analysis, and confirmatory analysis was used to test the measurement models or the fit of the items selected to measure each of the home affective environment, social-emotional behaviors, academic resilience, and academic achievement latent traits. Prior to the exploratory analysis, the appropriate ECLS-K sampling weights were determined based on the use of the data from the Third-Grade Self Descriptive Questionnaire, Third-Grade Parent Interview, Third-Grade Reading and Mathematics Achievement tests, and the Teacher Social Rating Scale. The ECLS-K sampling weights account for samples that were not randomly selected and systematic nonresponse in efforts to yield parameter estimates that more closely represent the target population (Tourangeau, Nord, Le, Sorongon, & Najarian, 2009). For this study, the sample weight (C5CPTWO) was used to compensate for differential probabilities of selection at each sampling stage and to adjust for the effects of nonresponse for those third-grade students with data from the Self-Descriptive Questionnaire, parent interview and Teacher Social Rating Scale (SRS).

After the exploratory analysis was conducted to identify the items appropriate to measure the constructs of interest, a path analysis using structural equation modeling was conducted to test relationships guiding this study represented in Figure 5.

Chapter Summary

This chapter describes in detail the methods used for obtaining the data that will be used in this study and how that data will be used to look for interrelated workings of home environment, social-emotional factors, academic resiliency, and how they impact student achievement. The data comes from samples taken twice from third-grade students participating in the ECLS-K data collection program and representing a broad sample of third graders with diverse backgrounds throughout the United States. All races and ethnicities and races are represented. Samples were weighted and equal probability systematic sampling was utilized. Students attended public and private schools and some were part day while the others were full day attendees. It was collected as part of the Early Childhood Longitudinal Study-Kindergarten Class of 1998-1999. This study will analyze that data as a quantitative research study utilizing secondary data analysis.

In addition, the variables used as indicators of home environment, social-emotional behaviors, academic resilience, and achievement were described. Items from the Student Self Descriptive Questionnaire and the Teacher's Social Rating Scale were used to operationalize the construct of academic resilience. Home Affective Environment was assessed using responses from the parental interview. Academic achievement was measured using student scores from the third ECLS-K reading and mathematics test.

Descriptive statistics and the use of structural equation modeling will be the main analyses for answer the seven research questions posed for this study. An exploratory analysis will be conducted first to screen for missing data. Several procedures will be considered for imputation values for the variables with missing data. Once the missing

values procedures are concluded, then Lisrel 9.2 will be used to investigate the hypothesized relationships between Home Affective Environment, Social-Emotional Behaviors, Academic Resilience, and Academic Achievement.

CHAPTER FOUR

RESULTS

Introduction

This study sought to determine the relationships between Home Affective Environment, Social-Emotional Behaviors, Academic Resilience and Reading achievement of third-grade students sampled from the ECLS-K 1998-99 data. In addition, the ECLS-K third-grade data was analyzed to determine the meditational effects of academic resilience on the total effects of Home Affective Environment and Social-Emotional Behaviors on Reading Achievement. The research questions and hypotheses posed for this study are as follows:

Research Questions and Hypotheses

Research Question 1: Is there a relationship between academic resilience, home environment, social-emotional behaviors and Reading achievement?

H₀: There is not a relationship between Social-Emotional Behaviors and Academic Resilience

H₁: There is a relationship between Social-Emotional Behaviors and Academic Resilience

H₀: There is not a relationship between Social-Emotional Behaviors and Reading Achievement

H₁: There is a relationship between Social-Emotional Behaviors and Reading Achievement

H₀: There is not a relationship between Home Affective Environment and Academic Resilience

H₁: There is a relationship between Home Affective Environment and Academic Resilience

H₀: There is not a relationship between Affective Home Environment and Reading Achievement

H₁: There is a relationship between Home Affective Environment and Reading Achievement

Research Question 2: Is there a relationship between Home Affective Environment and Social-Emotional Behaviors?

H₀: There is not a relationship between Home Affective Environment and Social-Emotional Behaviors

H₁: There is a relationship between Home Affective Environment and Social-Emotional Behaviors.

Research Question 3: Does academic resilience mediate the effects of Social-emotional and Home Affective Environment factors on reading achievement?

H₀: Academic Resilience does not mediate the effects of Home Affective Environment on Reading Achievement

H₁: Academic Resilience mediates the effects of Home Affective Environment on Reading Achievement

H₀: Academic Resilience does not mediate the effects of Social-Emotional Behaviors on Reading Achievement

H₁: Academic Resilience mediates the effects of Affective Home Environment on Reading Achievement

Research Question 4: Does the relationship between academic resilience, home environment, and social-emotional factors differ by gender, SES, or racial groups

H₀: The relationships between academic resilience, home environment, and social-emotional factors do not differ by gender, SES, or racial groups

H₁: The relationships between academic resilience, home environment, and social-emotional factors do differ by gender, SES, or racial group.

Research Question 5: Does academic resilience mediate the effects of social-emotional and home environment factors on reading achievement across gender, SES, and racial groups?

H₀: Academic Resilience does not mediate the effects of Social-Emotional Behaviors on Reading Achievement across gender, SES, and racial groups

H₁: Academic Resilience mediates the effects of Affective Home Environment on Reading Achievement across gender, SES, and racial groups.

Research Question 6: Is there a relationship between Home Affective Environment and Social-Emotional Behaviors across gender, SES, and racial groups?

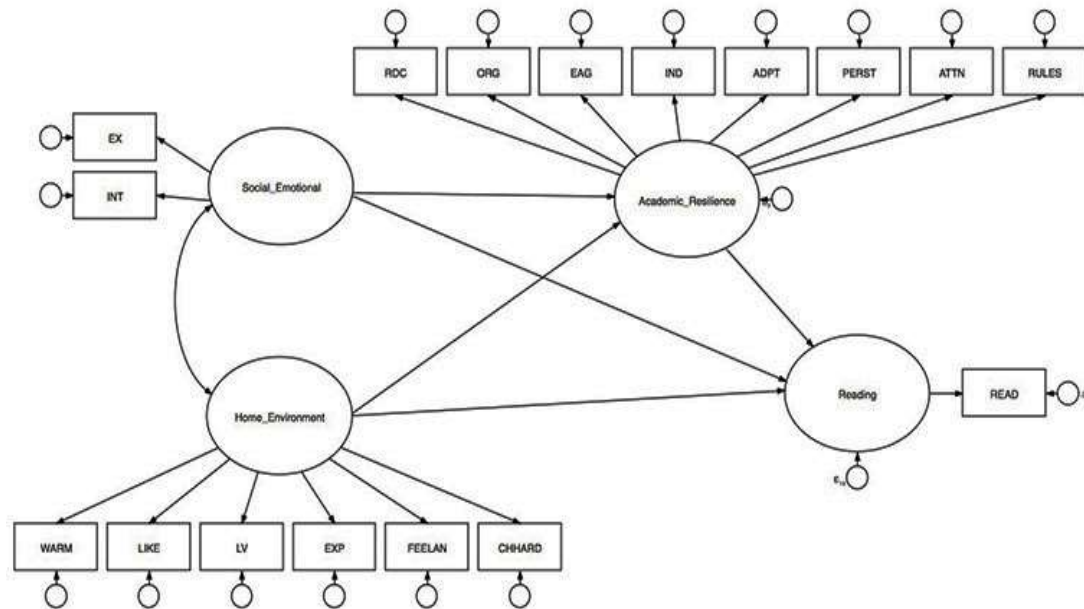
H₀: There a relationship between Home Affective Environment and Social-Emotional Behaviors across gender, SES, and racial groups.

H₁: There a relationship between Home Affective Environment and Social-Emotional Behaviors across gender, SES, and racial groups.

Research Design

The research design is correlational and uses path analysis, specifically Structural Equation Modeling (SEM) to model the relationships between Home Affective Environment, Social-Emotional Behaviors, Academic Resilience, and Reading Achievement (See Figure 6) for the full third-grade sample. Next, the same model representing the relationships between constructs were analyzed by gender, socioeconomic status, and race. The advantage of using SEM over traditional regression-based techniques for path analyses is that measurement error is taken into account. That is the error variances of the indicator variables used to measure the latent traits of home affective environment, social-emotional behaviors, academic resilience and reading achievement are analyzed when producing an estimated population covariance matrix based on the sample data. The more precise the indicator variables measure latent traits the more likely an implied population covariance matrix is likely to fit the sample covariance matrix.

Figure 6. Model of Relationships Between Home Affective Environment, Social-Emotional Behaviors, Academic Resilience and Reading achievement.



Participants

The participants in this study are third-grade students who were in kindergarten during the 1998-99 school year, their parents, and their teachers. The initial sample began with approximately 22,000 children. The data for this study was taken from 10,350 third-grade students who had self-report data from the Self-Descriptive Questionnaire (SDQ), parent interview responses and student ratings from the Teacher Social Rating Scale (SRS). These participants represent diverse ethnicities and cultures from all over the United States. They come from all income and socioeconomic levels. Additionally, students were randomly selected from both full-day and half-day kindergarten programs from both public and private schools.

Analytic Approach

Structural equation modeling using Stata 14.0 (Stata Corp., 2105) was used to analyze the relationships between Home Affective Environment, Social-Emotional Behaviors, Academic Resilience, and Reading Achievement presented in Figure 6. Stata 14.0 was chosen to model these relationships because it analyzes the data taking the dependencies of cluster effects as a result of sampling children from geographic regions and schools. This model-based approach (Hayes-Vaughn, 2005) is recommended for yielding less biased standard errors used for determining the significance of results. In addition, Stata also accommodates for the use of sample weights. For this study, the sample weight (C5CPTWO) was used to compensate for differential probabilities of selection at each sampling stage and to adjust for the effects of nonresponse for those third-grade students with data from the Self-Descriptive Questionnaire, parent interview and Teacher Social Rating Scale (SRS).

Data Screening

The data was screened for normality, outliers, and missing data after it was downloaded from the ECLS-K Public Use database. The means and standard deviations for the variables used are presented in Table 4. The data was imported into Stata 14.0 and analyzed for normality. Results from the Doornick-Hansen test (StataCorp., 2015) indicated that the multivariate distribution of the 14 ECLS-K variables was significantly non-normal ($\chi^2_{(34)} = 95523, p < .001$). Although the data does not meet the assumption of

multivariate normality, maximum likelihood estimation procedures that were used for the structural equation modeling analysis are robust to violations of this assumption. Next, the data was screened for missing values. Table 5 shows the percent of missing values for each of the ECLS-K variables used in the analysis.

Table 4. Descriptive Statistics and Abbreviations for the Variables Analyzed

Latent and Indicator Variables	Mean	Standard Deviation
<i>Social Emotional</i>		
Externalizing Behaviors (EX)	1.988	.717
Internalizing Behaviors (INT)	2.210	.718
<i>Home Affective Environment</i>		
{child} and I often have warm times together (WARM)	3.603	.638
Most of the time I feel that {child} likes me and wants to be near me (LIKE)	3.689	.565
Even when I am in a bad mood I show {child} a lot of love (LV)	3.430	.719
I express affection by hugging, kissing and praising {child} (EXP)	3.817	.462
I often feel angry with {child} (FEELAN)	3.681	.536
{Child} seems harder to care for than most (CHHARD)	3.787	.591
<i>Academic Resilience</i>		
Reading Competence (RDC)	3.268	.657
Keeps belongings organized (ORG)	2.810	.971
Shows eagerness to learn new things (EAG)	3.049	.875
Works independently (IND)	3.105	.847
Easily adapts to change (ADPT)	3.03	.810
Persists in completing tasks (PERST)	2.983	.916
Pays attention well (ATTN)	2.885	.895
Follows classroom rules (RULES)	3.221	.776
<i>Reading</i>		
Reading Achievement scores (READ)	.786	.315
<i>Reliability</i>		

Table 5. Percent of Missing Values by Variables Analyzed in the Study

Indicator Variables by Latent Trait	Total	Missing	Percent
<i>Social Emotional</i>			
Externalizing Behaviors (EX)	10,344	51	.4
Internalizing Behaviors (INT)	10,344	51	.4
<i>Home Affective Environment</i>			
{child} and I often have warm times together (WARM)	10,076	319	3.2
Most of the time I feel that {child} likes me and wants to be near me (LIKE)	10,077	318	3.2
Even when I am in a bad mood I show {child} a lot of love (LV)	10,073	322	3.2
I express affection by hugging, kissing and praising {child} (EXP)	10,075	320	3.0
I often feel angry with {child}(FEELAN)	10,072	323	3.2
{Child} seems harder to care for than most (CHHARD)	10,068	327	3.2
<i>Academic Resilience</i>			
Reading Competence (RDC)	10,344	51	.4
Keeps belongings organized (ORG)	10,198	197	2
Shows eagerness to learn new things (EAG)	10,213	182	1.7
Works independently (IND)	10,233	172	1.6
Easily adapts to change (ADPT)			
Persists in completing tasks (PERST)	10,173	222	2.0
Pays attention well (ATTN)	10,205	190	2
Follows classroom rules (RULES)	10,200	195	2
<i>Reading</i>			
Reading Achievement scores (READ)	10,285	110	1

Third-Grade Full Sample Results

Creating and analyzing a path model representing the relationships in Figure 6 for the full third-grade sample answered the first research question. The correlation matrix, as well as the means and standard deviations for each indicator variable for the full third-grade sample, are presented in Table 6. The results for the relationships between Social Emotional, Home Environment, Academic Resilience, and Reading Achievement for all

third graders are presented in Figure 7. The factor loadings, error variances, R^2 values and reliability coefficients for each of the latent traits are located in Table 7.

Table 6. Correlation Matrix of Indicator Variables with Means and Standard Deviations for the Full Third-Grade Sample (n = 10,395)0

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1.EX	1.000																
2. INT	0.607	1.000															
3.WARM	-0.043	-0.013	1.000														
4.LIKE	-0.045	-0.021	0.471	1.000													
5.LV	-0.019	0.008	0.364	0.331	1.000												
6.EXP	-0.035	-0.020	0.363	0.361	0.319	1.000											
7. FEELAN	-0.081	-0.049	0.161	0.169	0.148	0.105	1.000										
8. CHHARD	-0.097	-0.053	0.119	0.125	0.090	0.076	0.335	1.000									
9. RDC	-0.177	-0.100	0.034	0.031	0.027	0.024	0.023	0.043	1.000								
10. ORG	-0.267	-0.164	0.037	0.034	-0.005	0.019	0.070	0.123	0.106	1.000							
11.EAG	-0.244	-0.211	0.047	0.031	-0.012	0.015	0.057	0.096	0.166	0.405	1.000						
12. IND	-0.322	-0.269	0.031	0.029	-0.008	0.017	0.069	0.136	0.180	0.495	0.623	1.000					
13.ADPT	-0.261	-0.187	0.037	0.022	-0.009	0.023	0.091	0.145	0.114	0.447	0.497	0.566	1.000				
14. PERST	-0.322	-0.243	0.029	0.019	-0.012	0.018	0.077	0.117	0.145	0.551	0.592	0.697	0.537	1.000			
15.ATTN	-0.356	-0.252	0.041	0.025	0.003	0.018	0.091	0.140	0.144	0.582	0.606	0.690	0.569	0.723	1.000		
16. RULES	-0.342	-0.209	0.053	0.039	0.019	0.034	0.109	0.143	0.086	0.508	0.462	0.541	0.531	0.563	0.663	1.000	
17. READ	-0.324	-0.372	0.020	0.021	-0.041	0.039	0.052	0.095	0.207	0.223	0.385	0.460	0.290	0.386	0.381	0.262	1.000
Mean	1.98	2.20	3.60	3.70	3.43	3.82	3.68	3.79	3.270	2.81	3.05	3.10	3.030	2.98	2.89	3.22	.786
SD	.717	.718	.638	.565	.719	.462	.536	.591	9.657	.971	.875	.847	.810	.916	.895	.776	.315.1

Figure 7. Path Diagram and Parameter Estimates for Full Third-Grade Sample

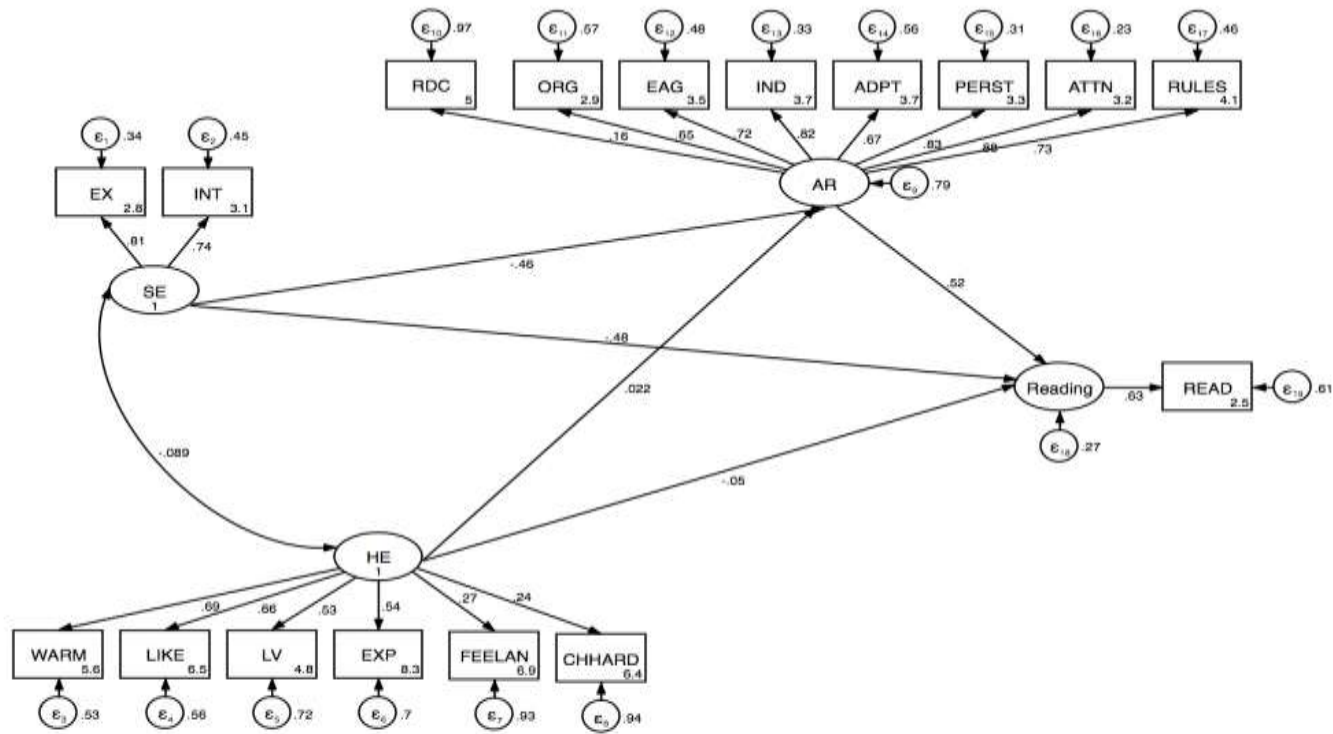


Table 7. Factor Loadings, Error Variances, and R^2 for the Third-Grade Measurement Model

Latent and Indicator Variables	Factor Loadings	Error Variances	R^2
<i>Social Emotional</i>			
Externalizing Behaviors (EX)	.810	.344	.656
Internalizing Behaviors (INT)	.744	.446	.554
<i>Reliability</i>	.87		
<i>Home Affective Environment</i>			
{child} and I often have warm times together (WARM)	.688	.527	.472
Most of the time I feel that {child} likes me and wants to be near me (LIKE)	.662	.561	.438
Even when I am in a bad mood I show {child} a lot of love (LV)	.530	.719	.281
I express affection by hugging, kissing and praising {child} (EXP)	.544	.704	.296
I often feel angry with {child}(FEELAN)	.266	.929	.071
{Child} seems harder to care for than most (CHHARD)	.236	.944	.056
<i>Reliability</i>	.65		
<i>Academic Resilience</i>			.212
Reading Competence (RDC)	.161	.974	.026
Keeps belongings organized (ORG)	.652	.574	.426
Shows eagerness to learn new things (EAG)	.720	.481	.519
Works independently (IND)	.820	.327	.673
Easily adapts to change (ADPT)	.666	.557	.443
Persists in completing tasks (PERST)	.833	.306	.694
Pays attention well (ATTN)	.879	.228	.772
Follows classroom rules (RULES)	.731	.465	.535
<i>Reliability</i>	.90		
<i>Reading</i>			.728
Reading Achievement scores (READ)	.628	.605	.395
<i>Reliability</i>	.94		

The most common and widely accepted measure for evaluating the internal consistency reliability of the latent traits (Social Emotional, Home Environment, Academic Resilience, and Reading Achievement) is coefficient alpha (Netmeyer, Beardon & Sharma, 2003). DeVellis (2003) suggests the internal consistency reliabilities should be at least .70. The reliability coefficients for the full third-grade sample ranged

from .65 to .94. Although the reliability from Home Environment falls below this threshold, Nunnally (1965) in his early work suggested that a reliability coefficient of .65 would be sufficient for exploratory work.

Results for covariance based models are evaluated by a variety of indices that estimate the fit of the model represented by the data to the estimated population model derived from the sample data. The closer the fit the more likely the model can be replicated with other samples from the population. Currently, the Root Mean Square Error of Approximation is a popular indicator of overall goodness of fit because this measure not only represents the fit of the sample and estimated model correlations but also takes model complexity into account (Schumaker & Lomax, 2016). However, Schumaker & Lomax, 2016 recommend that several measures of fit should be used to support evidence of good model fit.

Stata 14.0 (Stata Corp., 2015) was used to analyze the complex survey data for this study because of its capacity to compare multiple groups. Most of the fit indices recommended for evaluating model fit are based on likelihood statistics represented by Chi Square values. Stata uses pseudo-likelihood values and thus does not report Chi Square values or measures of fit based on likelihood ratios produced from Chi Square statistics. The overall fit measures reported by Stata are Standardized Root Mean Square Residual (SRMR), which is a residual based measure of fit, and the Coefficient of Determination (CD). The SRMR is defined as “the root mean square discrepancy between the observed correlations and the model-implied correlations” (Hair et al., 2017, p.193). SRMR is an absolute measure of fit so a value of zero indicates perfect fit. When

measuring model fit for CB-SEM, Hu & Bentler (1999) suggest that a value less than 0.08 is considered a good fit.). The Coefficient of Determination represents the percent of variance in the endogenous constructs explained by all of the exogenous constructs that are linked or have paths to them (Hair, Hult, Ringle & Sarstedt, 2014). In this case, the amount overall amount of variance in Academic Resilience accounted for by Social-Emotional Behaviors and Home Environment in addition to the amount of variability in Reading Achievement accounted for by Social-Emotional Behaviors, Home Environment, and Academic Resilience. In terms of effect size, Cohen (1998) suggests that values for the Coefficient of Determination (R^2) can be interpreted as follows: .02 = small, .25 = moderate and. = large. The overall results for the third-grade model indicate a good fit with an RMSR of .05 and a CD of .95 indicating that the exogenous variables explain almost 95% of the variance in the endogenous variables.

The unstandardized (B) and standardized path coefficients (b) that show the relationship between Home Affective Environment, Social-Emotional Behaviors, Academic Resilience, and Reading are presented in Table 8. These results show that Social-Emotional Behaviors have a significantly negative relationship with Academic Resilience and Reading Achievement. Home Environment, on the other hand, was not found to be significantly related to either Academic Resilience or Reading. The correlation (-.089) between Home Environment and Social-Emotional Behaviors was not found to be significant. In terms of practical significance, Cohen (1998) recommends interpreting the effect size of regression coefficients using the effect size r where .10 = small effect, .30 = moderate effect and .50 is considered a large effect. The path

coefficient from AR to Reading was considered a large effect with the other path coefficients considered to be small effects. Results presented in Table 8 show that the coefficients for paths from Social-Emotional Behaviors to Academic Resilience, Academic Resilience to Reading Achievement and Social-Emotional Behaviors to Reading Achievement were of moderate magnitude.

Table 8. Unstandardized Path Coefficients, Standardized Path Coefficients, and Significance Levels

Paths	<i>B</i>	<i>b</i>	<i>SE</i>	<i>p</i>
SE -> AR	-.084	-.459	.018	> .001
HE -> AR	-.050	.022	.017	.181
AR -> Reading	.975	.552	.036	>.001
SE - > Reading	-.163	-.475	.038	>.001
HE - > Reading	-.022	-.050	.030	.090
HE < - > SE	-.023	-.089	.024	> .001

Table Note. *B* = Unstandardized Path Coefficient, *b* = Standard Path Coefficient, *SE* = Standard Error

Research question two was answered by conducting a mediational analysis of the influence of academic resilience on the total effects of Social-Emotional Behaviors and Home Affective Environment on Reading Achievement. The magnitude of the mediational effects of Academic Resilience on Social-Emotional Behaviors and Home Environment were calculated by dividing the indirect effects of Social-Emotional Behaviors or Home Affective Environment on Reading Achievement by their respective total effects (Hair et al, 2014). For example, the indirect effect of Social-Emotional Behaviors on Reading passing through Academic Resilience was -.240 and the total effect of Social-Emotional Behaviors on reading was -.718. Next, -.240 is divided by -.718, yielding a value of -.33, or

interpreting the absolute value, we can say that Academic Resilience mediates 33% of the total effects of Social-Emotional Behaviors on Reading Achievement.

According to Preacher & Hayes (2004), a necessary component of mediation analysis is a statistically and practically significant indirect effect. Since the indirect effects of Home Environment on Reading Achievement when passing through Academic Resilience was not significant, a mediation analysis for the effects of Academic Resilience on Home Affective Environment was not calculated. The standardized direct, Indirect and Total Effects of Social-Emotional Behaviors, Home Environment and Academic Resilience on Reading Achievement are reported in Table 9.

Table 9. Standardized Direct, Indirect and Total Effects for Social-Emotional Behaviors, Home Environment, and Academic Resilience on Reading Achievement

Paths	Direct			Indirect			Total			Percent Mediated
	B	SE	p	B	SE	p	B	SE	p	
AR -> Reading	.552	.135	>.001	-	-		.522	.135	>.001	-
SE -> Reading	-.478	.014	>.001	-.240	.006	>.001	-.718	.015	>.001	33%
HE -> Reading	-.050	.013	.089	.011	.012	.187	-.038	.014	.201	-

Table Note. B = Unstandardized Path Coefficient, *b* = Standardized Coefficients, SE = Standard Error

Group Analyses

The next series of analyses were conducted to answer research questions 4, 5 and 6. These questions were posed to determine if the relationships for the overall third-grade model were similar for gender, socioeconomic status, and racial groups. In addition, these

analyses were conducted to determine if the total effects of Social-Emotional Behaviors and Home Affective Environment on Reading achievement by Academic Resilience differed by gender, race, or socioeconomic status. Lastly, to determine if there was a relationship between Social-Emotional Behaviors and Home Affective Environment when analyzing data by gender, socioeconomic status, and race. The same model represented in Figure 6 above was fit by gender, then socioeconomic status and finally race.

Third-Grade Model Fit by Gender

The correlation matrices, as well as the means and standard deviations for each indicator variable for the male and female third-grade sample, are presented in Tables 10 and 11. The results for the relationships between Social Emotional, Home Environment, Academic Resilience and Reading Achievement for male and female third graders are presented in Figures 8 and 9. The factor loadings, error variances, R^2 values and reliability coefficients by gender for each of the latent variables are located in Table 10 below.

Table 10. Correlation Matrix of Indicator Variables with Means and Standard Deviations for Females (n = 5,139).

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1.RDC	1.000																
2.EX	-0.165	1.000															
3.INT	-0.135	0.631	1.000														
4.WARM	0.044	-0.026	-0.020	1.000													
5.LIKE	0.051	-0.051	-0.042	0.470	1.00												
6.LV	0.020	-0.014	0.000	0.369	0.329	1.000											
7.EX	0.025	-0.031	-0.014	0.364	0.360	0.317	1.000										
8.EXP	0.031	-0.080	-0.073	0.161	0.172	0.158	0.104	1.000									
9.FEELAN	0.026	-0.076	-0.067	0.114	0.131	0.075	0.054	0.345	1.000								
10.CHHARD	0.052	-0.250	-0.203	0.024	0.036	-0.006	0.001	0.075	0.104	1.000							
11.ORG	0.147	-0.247	-0.228	0.027	0.018	0.000	0.010	0.054	0.095	0.408	1.000						
12.EAG	0.165	-0.325	-0.289	0.028	0.017	0.000	0.002	0.074	0.124	0.474	0.632	1.000					
13.IND	0.077	-0.258	-0.219	0.027	0.014	-0.007	0.013	0.078	0.136	0.416	0.513	0.543	1.000				
14.PERST	0.122	-0.316	-0.262	0.018	0.005	-0.012	0.003	0.070	0.117	0.528	0.602	0.680	0.528	1.000			
15.ATTN	0.120	-0.347	-0.281	0.027	0.019	0.012	0.022	0.081	0.127	0.558	0.619	0.689	0.550	0.721	1.000		
16.RULES	0.041	-0.303	-0.230	0.044	0.031	0.028	0.020	0.114	0.135	0.486	0.447	0.524	0.502	0.551	0.641	1.000	
17.READ	0.213	-0.336	-0.377	0.013	0.022	-0.039	0.037	0.052	-0.077	0.223	0.379	0.448	0.289	0.380	0.383	0.251	1.000
Mean	3.36	1.84	2.17	3.63	3.70	3.41	3.83	3.70	3.83	3.14	3.20	3.28	3.20	3.23	3.14	3.50	.849
SD	.610	.672	.697	.615	.547	.713	.449	.528	.526	.890	.813	.788	.766	.833	.842	.674	.284

Table 11. Correlation Matrix of Indicator Variables with Means and Standard Deviations for Males (n = 5,256)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1.RDC	1.000																
2.EX	-0.142	1.000															
3.INT	-0.066	0.609	1.000														
4.WARM	0.023	-0.051	-0.012	1.000													
5.LIKE	0.007	0.036	0.000	0.470	1.000												
6.LV	0.034	-0.025	0.018	0.354	0.339	1.000											
7.EX	0.012	-0.039	-0.036	0.361	0.359	0.324	1.000										
8.EXP	0.018	-0.079	-0.042	0.161	0.155	0.138	0.107	1.000									
9.FEELAN	0.047	-0.105	-0.050	0.126	0.106	0.095	0.090	0.348	1.000								
10.CHHARD	0.098	-0.230	-0.152	0.045	0.023	-0.003	0.029	0.048	0.128	1.000							
11.ORG	0.171	-0.226	-0.207	0.063	0.032	-0.022	0.009	0.057	0.102	0.385	1.000						
12.EAG	0.168	-0.300	-0.270	0.038	0.033	-0.016	0.023	0.058	0.147	0.485	0.617	1.000					
13.IND	0.101	-0.225	-0.177	0.044	0.023	-0.015	0.031	0.088	0.146	0.428	0.467	0.568	1.000				
14.PERST	0.121	-0.301	-0.247	0.033	0.017	-0.015	0.020	0.068	0.102	0.529	0.576	0.704	0.515	1.000			
15.ATTN	0.129	-0.329	-0.250	0.051	0.017	-0.008	0.010	0.089	0.144	0.559	0.596	0.689	0.557	0.710	1.000		
16.RULES	0.069	-0.322	-0.210	0.060	0.039	0.012	0.038	0.094	0.139	0.460	0.455	0.532	0.522	0.534	0.649	1.000	
17.READ	0.179	-0.303	-0.384	0.030	0.023	-0.042	0.043	0.057	0.113	0.207	0.394	0.474	0.283	0.388	0.377	0.253	1.000
Mean	3.20	2.01	2.14	3.60	3.68	3.42	3.81	3.66	3.76	2.62	3.02	3.04	2.91	2.91	2.78	3.10	.794
SD	.676	.702	.703	.638	.559	.718	.463	.555	.630	.963	.860	.858	.818	.909	.884	.781	.312

Figure 8. Path Diagram and Parameter Estimates for Third-Grade Females

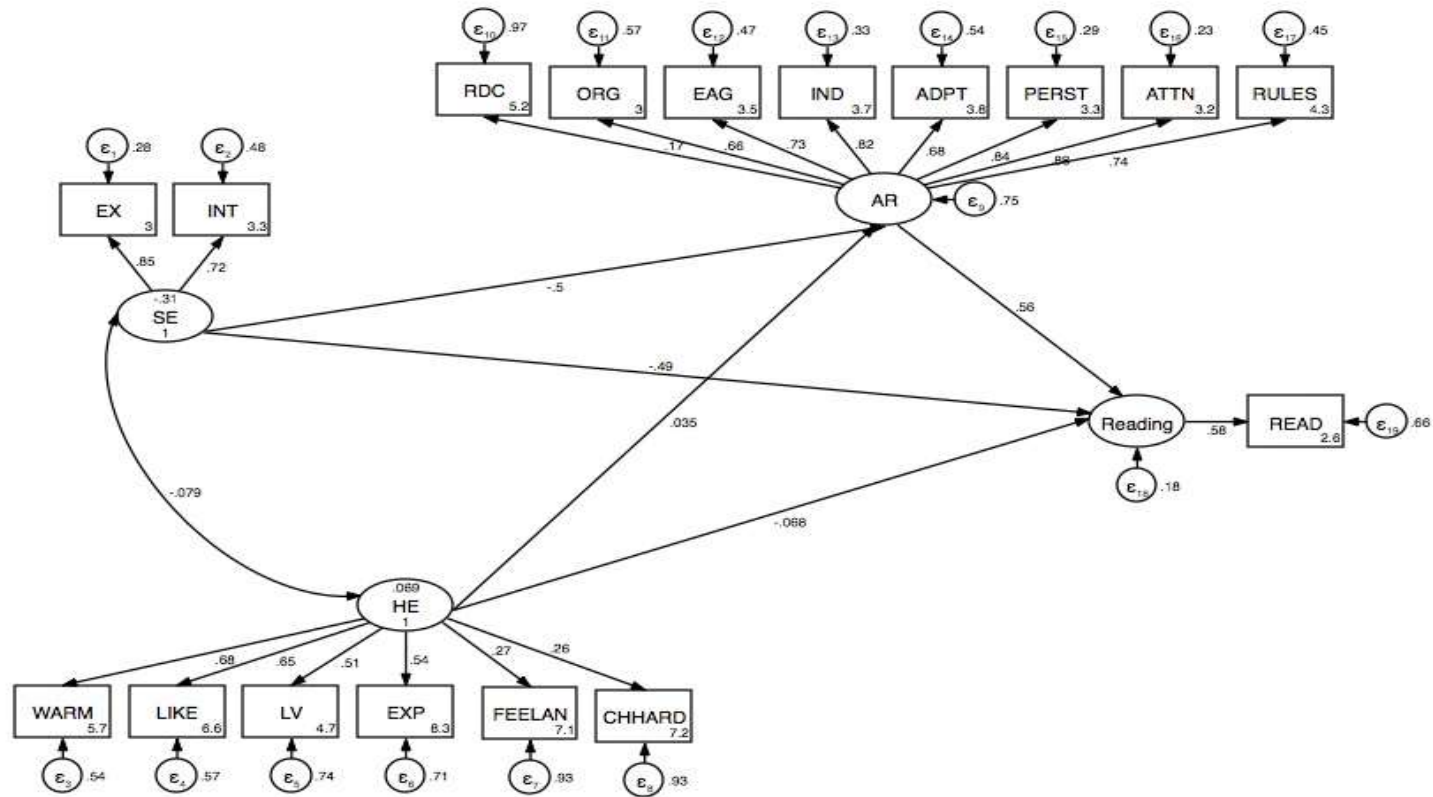


Figure 9. Path Diagram and Parameter Estimates for Third-Grade Males

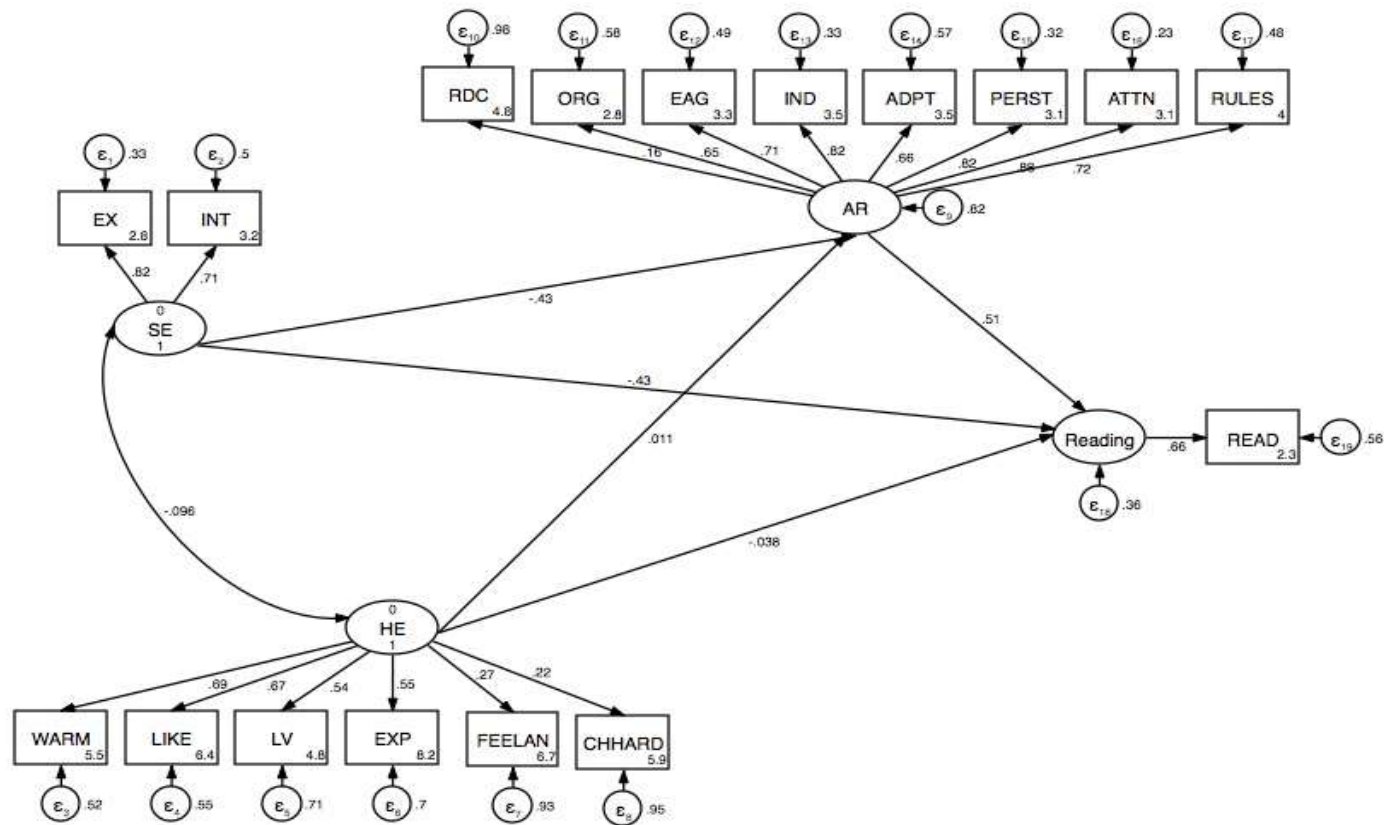


Table 12. Factor Loadings, Error Variances, and R Squares for the Measurement Model by Gender

Latent and Indicator Variables	Factor Loadings and Error Variances					
	Males			Females		
	Loading	Error	R ²	Loading	Error	R ²
<i>Social Emotional</i>						
Externalizing Behaviors (EX)	.772	.403	.597	.772	.353	.647
Internalizing Behaviors (INT)	.767	.411	.589	.789	.377	.623
Reliability	.76			.76		
<i>Home Affective Environment</i>						
{child} and I often have warm times together (WARM)	.692	.521	.479	.692	.538	.462
Most of the time I feel that {child} likes me and wants to be near me (LIKE)	.659	.565	.435	.668	.554	.446
Even when I am in a bad mood I show {child} a lot of love (LV)	.541	.708	.292	.521	.729	.271
I express affection by hugging, kissing and praising {child} (EXP)	.569	.676	.324	.515	.735	.265
I often feel angry with {child} (FEELAN)	.255	.935	.065	.276	.924	.076
{Child} seems harder to care for than most (CHHARD)	.239	.943	.057	.233	.945	.055
Reliability	.64			.64		
<i>Academic Resilience</i>						
Reading Competence (RDC)			.189			.209
Keeps belongings organized (ORG)	.137	.981	.019	.137	.982	.018
Shows eagerness to learn new things (EAG)	.631	.602	.398	.629	.604	.396
Works independently (IND)	.706	.501	.499	.737	.457	.543
Easily adapts to change (ADPT)	.825	.319	.681	.819	.341	.659
Persists in completing tasks (PERST)	.646	.583	.418	.658	.567	.4332
Pays attention well (ATTN)	.818	.332	.668	.837	.299	.701
Follows classroom rules (RULES)	.871	.241	.759	.823	.238	.769
Reliability	.724	.476	.524	.704	.504	.496
	.87			.88		
<i>Reading</i>						
Reading Achievement Scores (READ)			.670			.854
Reliability	.662	.562	.438	.662	.562	.332
	.94			.94		

The overall results for the female model were found to be a good fit with an RMSR of .048 and a CD of .96 indicating that the exogenous variables explain almost 95% of the variance in the endogenous variables. The RMSR for the male model was .050 with a Coefficient of Determination of .94. The unstandardized (*B*) standardized path coefficients (*b*) showing the relationship between Home Environment, Social-Emotional Behaviors, Academic Resilience, and Reading Achievement are presented in Table 12 by gender. These results show that Social-Emotional Behaviors had a significantly negative relationship with Academic Resilience and Reading Achievement. Home Environment, on the other hand, was not found to be significantly related to either Academic Resilience or Reading. The correlation between Home Environment and Social-Emotional Behaviors for both males and females were both found to be very small and not significant. Results presented in Table 13 show that the coefficients for the paths from Social-Emotional Behaviors to Academic Resilience, Academic Resilience to Reading and Social-Emotional Behaviors to Reading for both males and females were moderate. However, for both males and females the paths coefficients for both Home Affective Environment to Academic Resilience and Home Affective Environment to Reading were very small when considering Cohen's (1988) effect size thresholds for small, moderate, and large effects.

The two models for both males and females were compared to determine if differences existed across path coefficients. These comparisons were made according to procedures used by Raver, Gershoff & Aber (2007) who subtracted the unstandardized group paths and divided by the path for the group with the largest coefficient. For

example, to compare the male and female paths of Social-Emotional Behaviors to Academic Resilience, $-.072$ is subtracted from $-.067$ and divided by $-.072$, yielding a difference of $.04$. These values of d are interpreted in the same manner as the Cohen's d . In this case, the only comparison approaching a moderate difference was for the path from Home Affective Environment to Reading. Although very small, the female path coefficient was found to be twice the size of the male path coefficient.

Table 13. Unstandardized Path Coefficients, Standardized Path Coefficients, Significance Levels, and Differences (d) by Gender

Paths	Male				Female				d
	B	b	SE	p	B	b	SE	p	
SE -> AR	-.072	-.433	.024	>.001	-	-	.028	>.001	.04
				1	.067	.455			
HE -> AR	.004	.020	.025	.428	.005	.023	.024	.317	.20
AR -> Reading	1.17	.505	.042	>.001	1.15	.546	.059	>.001	.02
				1					
SE -> Reading	-.178	-.464	.050	>.001	-	-	.065	>.001	.05
				1	.169	.541			
HE -> Reading	-.016	-.034	.041	.411	-	-	.046	.115	.45
					.029	.072			
HE < -> SE	-.020	-.080	.034	.019	-	-	.030	.006	.05
					.019	.083			

Table Note. B = Unstandardized Path Coefficient, b = Standardized Coefficients, SE = Standard Error

The standardized direct, Indirect and Total Effects of Social-Emotional Behaviors, Home Environment and Academic Resilience on Reading Achievement are reported in Table 14. Results from the mediation analysis, show that Academic Resilience partially mediates the total effects of Social-Emotional Behaviors on Reading Achievement. Results presented in Table 13 show that the indirect effects Social-Emotional Behaviors on Reading achievement was significant for both males and females. This

finding suggests that Academic Resilience mediated a significant proportion of the total effects of Social-Emotional Behaviors on Reading achievement for both males and females. Approximately 12% of the total effects of Social-Emotional Behaviors on Reading achievement was mediated for males and about 10% for females. As with the full third-grade sample, the mediation effects of Academic Resilience on Home Affective Environment were not calculated due to the small and non-significant relationships that Home Affective Environment had with Academic Resilience and Reading achievement.

Table 14. Standardized Direct, Indirect and Total Effects for Social-Emotional Behaviors, Home Environment, and Academic Resilience on Reading Achievement by Gender

	Direct				Indirect						Total				Percent Mediated	
	M		F		M		F		M		F		M		F	
Paths	B	SE	B	SE	B	SE	p	B	SE	p	B	SE	B	SE		
AR -> Reading	.505	.042	.546	.059	-	-		-	-		.504	.259	.546	.246		
SE -> Reading	-.464	.050	-	.065	-	.084	>.001	.080	.009	>.001	-	.023	-	.016	12%	10%
HE -> Reading	-.034	.041	-	.072	.005	.006	.656	.005	.005	.231	-	.020	-	.019	-	-

Table note. B = Standardized Coefficient, SE = Standard Error, p = Probability of Significance

Third-Grade Model Fit by Socioeconomic Status

The correlation matrices, as well as the means and standard deviations for each indicator variable for Low Socioeconomic Status (Low SES) and High Socioeconomic Status (High SES) third-grade sample, are presented in Tables 15 and 16. The results for the relationships between Social Emotional, Home Environment, Academic Resilience and Reading Achievement for Low and High Socioeconomic groups of third-grade students are presented in Figures 10 and 11. The factor loadings, error variances, R^2 values and reliability coefficients by SES group for each of the latent variables are located in Table 15 below.

Table 15. Correlation Matrix of Indicator Variables with Means and Standard Deviations for Low SES (n = 4326)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1.EX	1.000																
2.INT	0.614	1.000															
3.WARM	-0.054	-0.026	1.000														
4.LIKE	-0.061	0.025	0.469	1.000													
5.LV	-0.016	0.010	0.374	0.327	1.000												
6.EXP	-0.040	-0.020	0.382	0.354	0.345	1.000											
7.FEELAN	-0.079	-0.054	0.177	0.179	0.139	0.129	1.000										
8.CHHARD	-0.093	-0.057	0.129	0.133	0.077	0.074	0.351	1.000									
9.RDC	-0.177	-0.086	0.033	0.039	0.008	0.029	0.031	0.044	1.000								
10.ORG	-0.272	-0.191	0.027	0.030	-0.003	0.015	0.096	0.123	0.087	1.000							
11.EAG	-0.251	-0.221	0.045	0.029	-0.011	0.018	0.083	0.120	0.155	0.419	1.000						
12.IND	-0.328	-0.284	0.036	0.028	-0.005	0.020	0.100	0.158	0.170	0.496	0.636	1.000					
13.ADPT	-0.267	-0.197	0.037	0.023	0.004	0.014	0.114	0.155	0.107	0.456	0.519	0.581	1.000				
14.PERST	-0.316	-0.255	0.022	0.009	-0.019	0.026	0.104	0.130	0.137	0.566	0.617	0.707	0.550	1.000			
15.ATTN	-0.346	-0.246	0.025	0.016	0.001	0.021	0.119	0.153	0.131	0.589	0.634	0.694	0.589	0.737	1.000		
16.RULES	-0.352	-0.232	0.052	0.032	0.014	0.037	0.128	0.145	0.069	0.522	0.489	0.550	0.549	0.581	0.668	1.000	
17.READ	-0.342	-0.399	0.029	0.029	-0.041	0.041	0.084	0.113	0.205	0.239	0.392	0.472	0.313	0.407	0.392	0.288	1.000
Mean	1.96	2.13	3.60	3.70	3.40	3.82	3.70	3.80	3.25	2.90	3.14	3.19	2.98	3.07	2.99	3.30	.838
SD	.688	.686	.639	.551	.724	.453	.523	.562	.675	.960	.825	.818	.817	.882	.872	.740	.290

Table 16. Correlation Matrix of Indicator Variables with Means and Standard Deviations for High SES (n = 6069)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1.EX	1.000																
2.INT	0.595	1.000															
3.WARM	-0.033	-0.002	1.000														
4.LIKE	-0.030	-0.014	0.473	1.000													
5.LV	-0.027	0.001	0.358	0.336	1.000												
6.EXP	-0.028	-0.018	0.349	0.365	0.300	1.000											
7.FEELAN	-0.078	-0.040	0.149	0.159	0.157	0.085	1.000										
8.CHHARD	-0.094	-0.043	0.111	0.117	0.103	0.077	0.321	1.000									
9.RDC	-0.184	-0.115	0.035	0.026	0.039	0.021	0.019	0.044	1.000								
10.ORG	-0.257	-0.135	0.045	0.035	-0.003	0.021	0.047	0.119	0.122	1.000							
11.EAG	-0.226	-0.191	0.047	0.030	-0.008	0.010	0.031	0.069	0.180	0.390	1.000						
12.IND	-0.306	-0.246	0.027	0.026	-0.005	0.012	0.040	0.112	0.192	0.489	0.608	1.000					
13.ADPT	-0.246	-0.168	0.036	0.017	-0.015	0.027	0.070	0.131	0.122	0.436	0.475	0.549	1.000				
14.PERST	-0.316	-0.221	0.032	0.023	-0.002	0.009	0.051	0.100	0.156	0.537	0.565	0.684	0.521	1.000			
15.ATTN	-0.353	-0.244	0.052	0.029	0.010	0.012	0.064	0.124	0.160	0.573	0.578	0.682	0.549	0.708	1.000		
16.RULES	-0.323	-0.179	0.054	0.042	0.028	0.030	0.089	0.136	0.103	0.494	0.433	0.528	0.512	0.543	0.655	1.000	
17.READ	-0.290	-0.334	0.011	0.010	-0.033	0.034	0.016	0.067	0.221	0.199	0.365	0.439	0.259	0.352	0.357	0.223	1.000
Mean	2.07	2.30	3.61	3.68	3.47	3.81	3.66	3.76	3.29	2.73	2.95	3.00	3.07	2.88	2.77	3.14	.728
SD	.740	.743	.637	.580	.710	.473	.550	.622	.635	.979	.919	.869	.805	.943	.907	.809	.331

Figure 10. Path Diagram and Parameter Estimates for Third-Grade Low SES Students

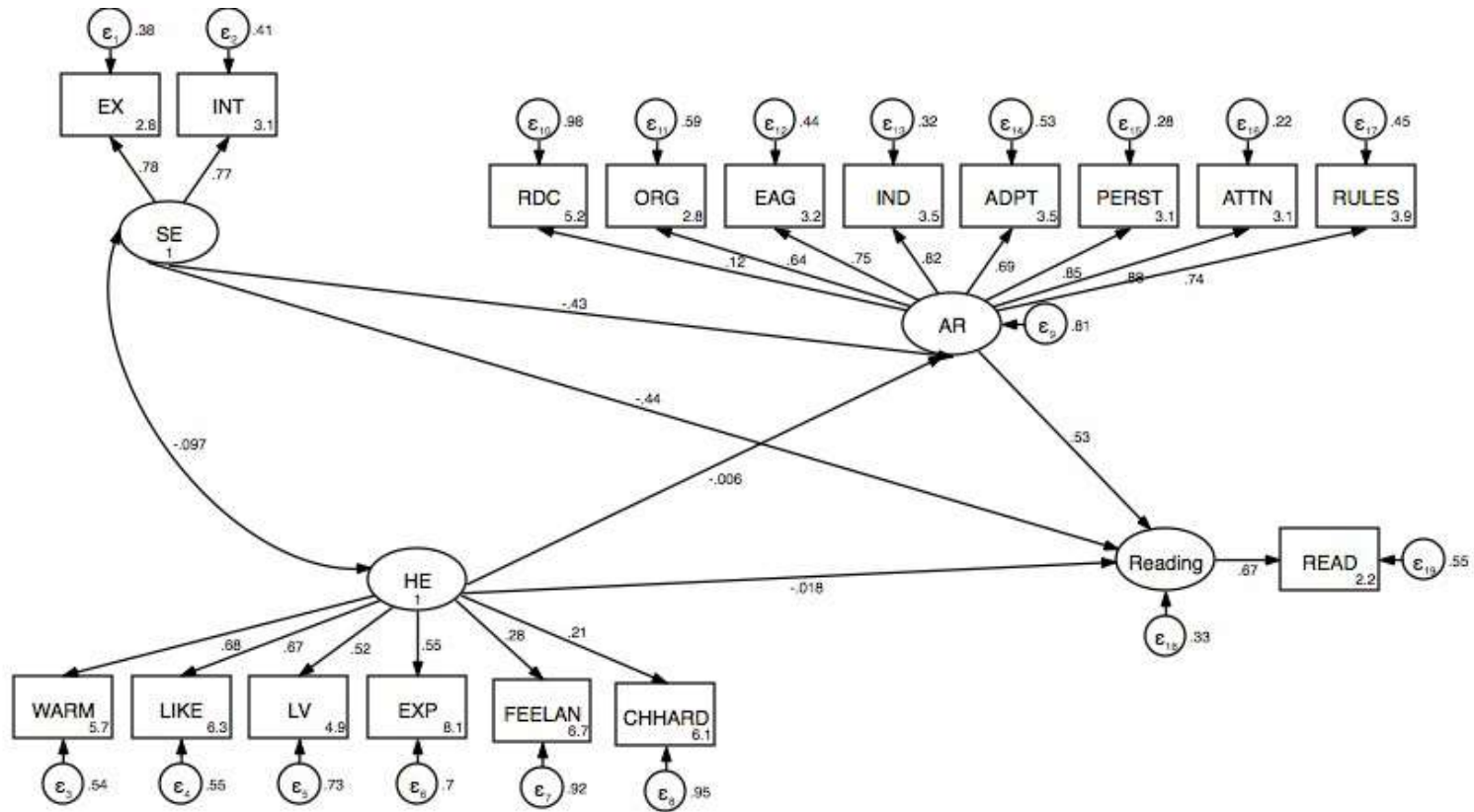


Figure 11. Path Diagram and Parameter Estimated for Third-Grade High SES Students

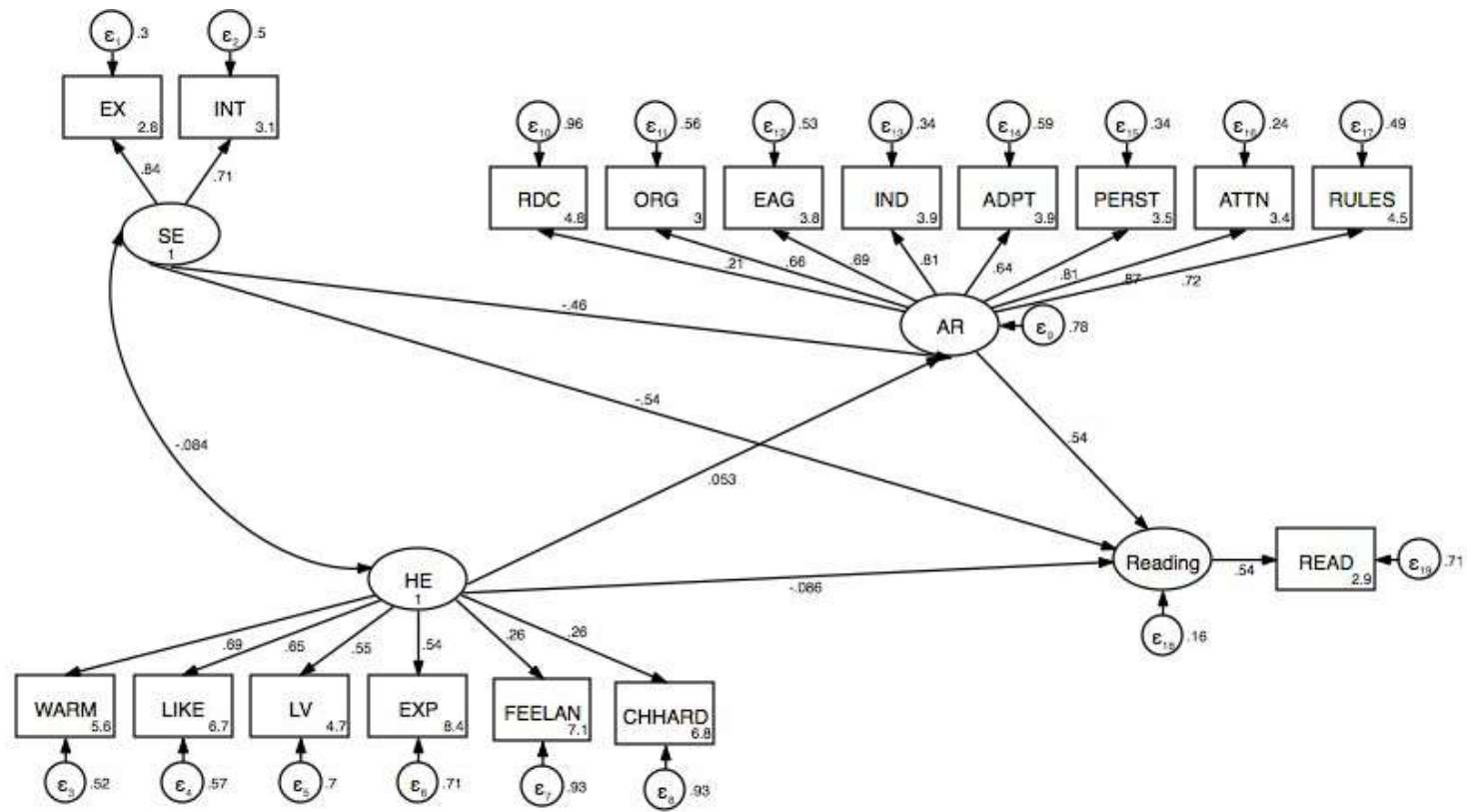


Table 17. Factor Loadings, Error Variances, and R Squares for the Measurement Model by Socioeconomic Status Group

Latent and Indicator Variables	Factor Loadings and Error Variance					
	High SES			Low SES		
	Loading	Error	R ²	Loading	Error	R ²
<i>Social Emotional</i>						
Externalizing Behaviors (EX)	.884	.137	.615	.884	.219	.705
Internalizing Behaviors (INT)	.640	.591	.588	.681	.536	.501
Reliabilities	.76				.75	
<i>Home Affective Environment</i>						
{child} and I often have warm times together (WARM)	.681	.518	.463	.681	.536	.481
Most of the time I feel that {child} likes me and wants to be near me (LIKE)	.655	.571	.448	.670	.552	.428
Even when I am in a bad mood I show {child} a lot of love (LV)	.544	.704	.267	.516	.733	.280
I express affection by hugging, kissing and praising {child} (EXP)	.539	.710	.302	.550	.698	.288
I often feel angry with {child} (FEELAN)	.254	.935	.007	.279	.922	.065
{Child} seems harder to care for than most (CHHARD)	.260	.932	.045	.214	.954	.067
Reliabilities	.65				.64	
<i>Academic Resilience</i>						
			.187			.221
Reading Competence (RDC)	.126	.955	.016	.126	.984	.045
Keeps belongings organized (ORG)	.662	.562	.410	.638	.593	.440
Shows eagerness to learn new things (EAG)	.686	.530	.556	.746	.444	.470
Works independently (IND)	.811	.342	.680	.825	.319	.657
Easily adapts to change (ADPT)	.686	.530	.470	.640	.591	.409
Persists in completing tasks (PERST)	.814	.338	.470	.847	.283	.410
Pays attention well (ATTN)	.870	.244	.550	.883	.220	.757
Follows classroom rules (RULES)	.715	.489	.459	.741	.451	.512
Reliabilities	.88				.87	
<i>Reading</i>						
			.668			.843
Reading Achievement Scores (READ)	.673	.809	.453	.673	.788	.290
Reliabilities	.94				.94	

The overall results for the Low SES model were found to be a good fit with an RMSR of .055 and a CD of .94 indicating that the exogenous variables explain 94% of the variance in the endogenous variables. The RMSR for the High SES model was .046 with a Coefficient of Determination of .96. The unstandardized (B) and standardized path coefficients (*b*) showing the relationship between Home Environment, Social-Emotional Behaviors, Academic Resilience, and Reading are presented in Table 18 by SES group. These results show that Social-Emotional Behaviors had a significantly negative relationship with Academic Resilience and Reading Achievement for both High and Low SES groups. Home Environment, on the other hand, was not found to be significantly related to either Academic Resilience or Reading when examining the path coefficients for both groups. The correlation between Home Environment and Social-Emotional Behaviors for Low SES and High SES was significant but very small.

Results presented in Table 18 show that when considering Cohen's (1988) recommendations for interpreting the size of the path coefficients, the paths from Social-Emotional Behaviors to Academic Resilience, Academic Resilience to Reading and Social-Emotional Behaviors to Reading for both Low SES and High SES groups were considered moderate. However, for both the Low SES and High SES groups the paths coefficients for both Home Affective Environment to Academic Resilience and Home Affective Environment to Reading evidenced were non-significant and small in magnitude. The two models for both males and females were compared to determine if differences existed across path coefficients.

These same procedures used for comparing male and female models were also used for comparing Low and High SES groups. Again, values of d are interpreted in the same manner as the Cohen's d with $.20$ = small, $.50$ = moderate and $\geq .80$ = large. For this set of comparisons, the unstandardized values for the paths from Social-Emotional Behaviors to Academic Resilience, Home Affective Environment to Academic Resilience, Academic Resilience to Reading Achievement and Home Affective Environment to Reading Achievement exceeded the Low SES group by over one-half of a standard deviation unit with the largest path coefficient difference for Home Affective Environment to Academic Resilience. Although there were moderate to large differences in the path coefficients from Social-Emotional Behaviors to Academic Resilience, Home Affective Environment to Academic Resilience and Home Affective Environment to Reading Achievement, these path coefficients were very small in magnitude for both groups. The relationship between Home Affective Environment and Social-Emotional Behaviors was significant yet small for both Low and High SES groups.

Table 18. Unstandardized Path Coefficients, Standardized Path Coefficients, Significance Levels, and Differences (*d*) by SES group

Paths	Low SES				High SES				<i>d</i>
	B	<i>b</i>	<i>SE</i>	<i>p</i>	B	<i>b</i>	<i>SE</i>	<i>p</i>	
SE -> AR	-.059	-.433	.031	>.001	-.113	-.463	.019	>.001	.47
HE -> AR	-.001	-.006	.028	.832	.016	.053	.025	.034	1.06
AR -> Reading	1.50	.529	.052	>.001	.600	.542	.052	>.001	.60
SE -> Reading	-.167	-.437	.056	>.001	-.144	-.536	.048	>.001	.13
HE -> Reading	-.009	-.018	.040	.652	-.034	-.086	.043	.043	.73
HE < -> SE	-.024	-.097	.031	.002	-.021	-.084	.036	.020	.13

Table Note. B = Unstandardized Path Coefficient, *b*= Standardized Coefficients, *SE* = Standard Error

The standardized direct, indirect, and total effects of Social-Emotional Behaviors, Home Environment, and Academic Resilience on Reading Achievement are reported in Table 19. Results from the mediation analysis, show that Academic Resilience partially mediated a significant proportion of the total effects of Social-Emotional Behaviors on Reading Achievement for both Low and High SES groups. Academic resilience was found to mediate approximately 32% - 34% of the total effects of Social-Emotional Behaviors on Reading Achievement for both Low and High SES groups. The mediation effects for Academic Resilience on the total effects of Reading Achievement for High SES third-grade children was calculated because significant indirect effect of Home Affective Environment on Reading Achievement. Results from the mediation analysis found that Academic Resilience mediated 51% of the total effects of Home Affective Environment on Reading Achievement.

Table 19. Standardized Direct, Indirect, and Total Effects for Social-Emotional Behaviors, Home Environment, and Academic Resilience on Reading Achievement by Socioeconomic Status

	Direct				Indirect						Total				Percent Mediated	
	Low SES		High SES		Low SES		High SES		Low SES		High SES		Low SES		High SES	
Paths	B	SE	B	SE	B	SE	p	B	SE	p	B	SE	B	SE		
AR -> Reading	-.433	.031	.542	.052	-	-		-	-		.528	.368	.542	.081	-	-
SE -> Reading	-.006	.028	-.536	.048	-.229	.016	>.001	-.251	.006	>.001	-.666	.020	-.787	.017	34%	32%
HE -> Reading	.529	.052	-.086	.043	-.003	.008	.831	.029	.005	.036	-.021	.021	-.057	.016	-	51%

Table note. *b* = Standardized Coefficient, *SE* = Standard Error, *p* = probability of significance

Third-Grade Model Fit by Race

The correlation matrices as well as the means and standard deviations for each indicator variable for the White, Black, and Hispanic third-grade groups are presented in Tables 20, 21 and 22. Results for the relationships between Social Emotional, Home Environment, Academic Resilience and Reading Achievement for White, Black, and Hispanic third-grade children are presented in Figures 11, 12, and 13. The factor loadings, error variances, R^2 values and reliability coefficients by racial group for each of the latent variables are located in Table 23 below.

Table 20. Correlation Matrix of Indicator Variables with Means and Standard Deviations for White Third-Grade Children ($n=6,629$)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1.EX	1.000																
2.INT	0.583	1.000															
3.WARM	-0.068	-0.033	1.000														
4.LIKE	-0.067	-0.043	0.485	1.000													
5.LV	-0.051	-0.032	0.373	0.337	1.000												
6.EXP	-0.034	-0.022	0.359	0.346	0.305	1.000											
7.FEELAN	-0.080	-0.050	0.173	0.190	0.166	0.097	1.000										
8.CHHARD	-0.101	-0.048	0.125	0.127	0.092	0.074	0.347	1.000									
9.RDC	-0.206	-0.145	0.042	0.031	0.031	0.024	0.019	0.043	1.000								
10.ORG	-0.284	-0.143	0.042	0.053	0.005	0.023	0.062	0.134	0.125	1.000							
11.EAG	-0.241	-0.195	0.054	0.050	0.007	0.016	0.047	0.087	0.189	0.394	1.000						
12.IND	-0.327	-0.244	0.031	0.043	0.009	0.011	0.066	0.138	0.206	0.491	0.620	1.000					
13.ADPT	-0.265	-0.169	0.042	0.034	-0.004	0.029	0.085	0.157	0.135	0.438	0.481	0.555	1.000				
14.PERST	-0.328	-0.215	0.035	0.042	0.009	0.010	0.080	0.123	0.174	0.555	0.579	0.697	0.529	1.000			
15.ATTN	-0.365	-0.225	0.040	0.040	0.020	0.016	0.087	0.142	0.166	0.580	0.589	0.681	0.558	0.720	1.000		
16.RULES	-0.345	-0.168	0.061	0.063	0.038	0.039	0.108	0.148	0.117	0.491	0.444	0.526	0.519	0.552	0.654	1.000	
17.READ	-0.285	-0.307	0.036	0.032	0.004	0.018	0.032	0.087	0.276	0.213	0.395	0.469	0.275	0.382	0.373	0.238	1.000
Mean	1.88	2.08	3.58	3.68	3.39	3.83	3.69	3.78	3.25	2.83	3.13	3.19	3.07	3.06	2.97	3.30	868
SD	.675	.677	.643	.555	.718	.450	.521	.592	.669	.981	.843	.827	.810	.899	.886	.748	.289

Table 21. Correlation Matrix of Indicator Variables with Means and Standard Deviations for Black Third-Grade Children
($n = 1110$)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
1. EX	1.000																
2. INT	0.611	1.000															
3. WARM	0.025	0.006	1.000														
4.LIKE	-0.002	-0.006	0.398	1.000													
5. LV	0.036	0.046	0.331	0.278	1.000												
6. EXP	0.009	0.010	0.366	0.339	0.355	1.000											
7.FEELAN	-0.069	-0.053	0.134	0.138	0.133	0.107	1.000										
8.CHHARD	-0.097	-0.089	0.153	0.121	0.084	0.100	0.311	1.000									
9.RDC	-0.140	-0.003	0.030	0.066	-0.002	0.052	0.022	0.022	1.000								
10.ORG	-0.172	-0.144	0.014	-0.018	-0.015	0.056	0.086	0.096	0.067	1.000							
11.EAG	-0.211	-0.200	0.063	0.004	0.005	0.026	0.089	0.117	0.124	0.409	1.000						
12.IND	-0.242	-0.262	0.034	0.002	0.005	0.041	0.093	0.171	0.122	0.486	0.615	1.000					
13.ADPT	-0.226	-0.180	0.060	0.019	0.032	0.057	0.109	0.132	0.107	0.466	0.507	0.570	1.000				
14.PERST	-0.255	-0.234	0.021	-0.007	0.006	0.049	0.095	0.128	0.096	0.546	0.614	0.682	0.562	1.000			
15.ATTN	-0.274	-0.255	0.034	0.010	0.030	0.064	0.095	0.134	0.122	0.560	0.665	0.678	0.605	0.726	1.000		
16.RULES	-0.309	-0.247	0.061	0.000	0.026	0.060	0.134	0.134	0.044	0.486	0.497	0.534	0.579	0.564	0.658	1.000	
17.READ	-0.244	-0.384	0.021	0.028	-0.065	0.035	0.125	0.185	0.100	0.229	0.387	0.399	0.282	0.340	0.364	0.228	1.000
Mean	2.24	2.47	3.63	3.75	3.54	3.80	3.60	3.76	3.31	2.69	2.80	2.88	2.81	2.76	2.60	.634	.641
SD	.787	.773	.620	.550	.684	.506	.614	.652	.659	.963	.939	.864	.852	.935	.897	.297	.299

Table 22. Correlation Matrix of Indicator Variables with Means and Standard Deviations for Hispanic Third-Grade Children ($n = 1550$)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1.EX	1.000																
2.INT	0.609	1.000															
3.WARM	-0.011	0.001	1.000														
4.LIKE	-0.009	0.028	0.410	1.000													
5.LV	-0.025	0.042	0.314	0.352	1.000												
6.EXP	-0.017	-0.009	0.361	0.396	0.362	1.000											
7.FEELAN	-0.117	-0.046	0.087	0.091	0.100	0.106	1.000										
8.CHHARD	-0.117	-0.064	0.072	0.139	0.103	0.077	0.312	1.000									
9.RDC	-0.180	-0.068	-0.013	-0.004	-0.005	0.012	0.010	0.066	1.000								
10.ORG	-0.231	-0.175	0.027	0.021	0.004	0.025	0.098	0.114	0.114	1.000							
11.EAG	-0.227	-0.198	0.024	-0.014	-0.032	0.015	0.050	0.134	0.139	0.419	1.000						
12.IND	-0.288	-0.268	0.044	-0.001	-0.008	0.026	0.051	0.124	0.160	0.509	0.631	1.000					
13.ADPT	-0.208	-0.174	0.005	-0.012	-0.002	-0.019	0.112	0.108	0.083	0.440	0.507	0.581	1.000				
14.PERST	-0.274	-0.245	0.014	-0.029	-0.023	0.020	0.063	0.124	0.136	0.538	0.603	0.694	0.531	1.000			
15.ATTN	-0.308	-0.261	0.036	-0.004	-0.007	-0.006	0.089	0.147	0.132	0.582	0.614	0.709	0.548	0.723	1.000		
16.RULES	-0.266	-0.190	0.023	-0.001	0.014	0.023	0.093	0.133	0.059	0.550	0.464	0.552	0.502	0.562	0.648	1.000	
17.READ	-0.323	-0.369	0.014	-0.001	-0.075	0.036	0.057	0.108	0.148	0.192	0.318	0.409	0.266	0.327	0.344	0.217	1.000
Mean	2.07	2.400	3.66	3.71	3.50	3.83	3.75	3.81	3.30	2.84	2.99	3.00	3.00	2.59	2.88	3.20	.665
SD	.714	.691	.624	.576	.731	.431	.494	.551	.863	.848	.892	.863	.790	.930	.875	.772	.324

Figure 12. Path Diagram and Parameter Estimates for White Third-Grade Students

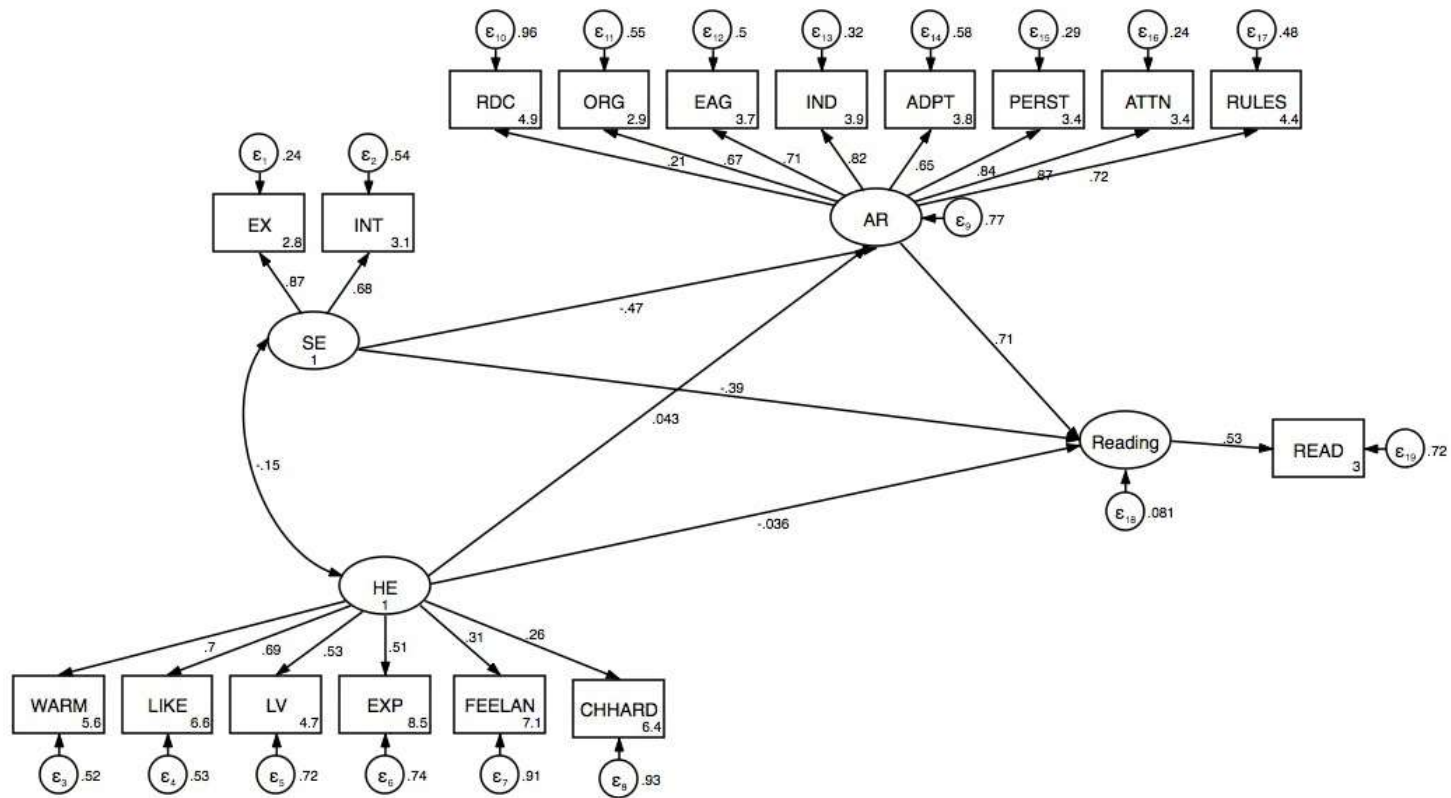


Figure 13. Path Diagram and Parameter Estimates for Black Third-Grade Students

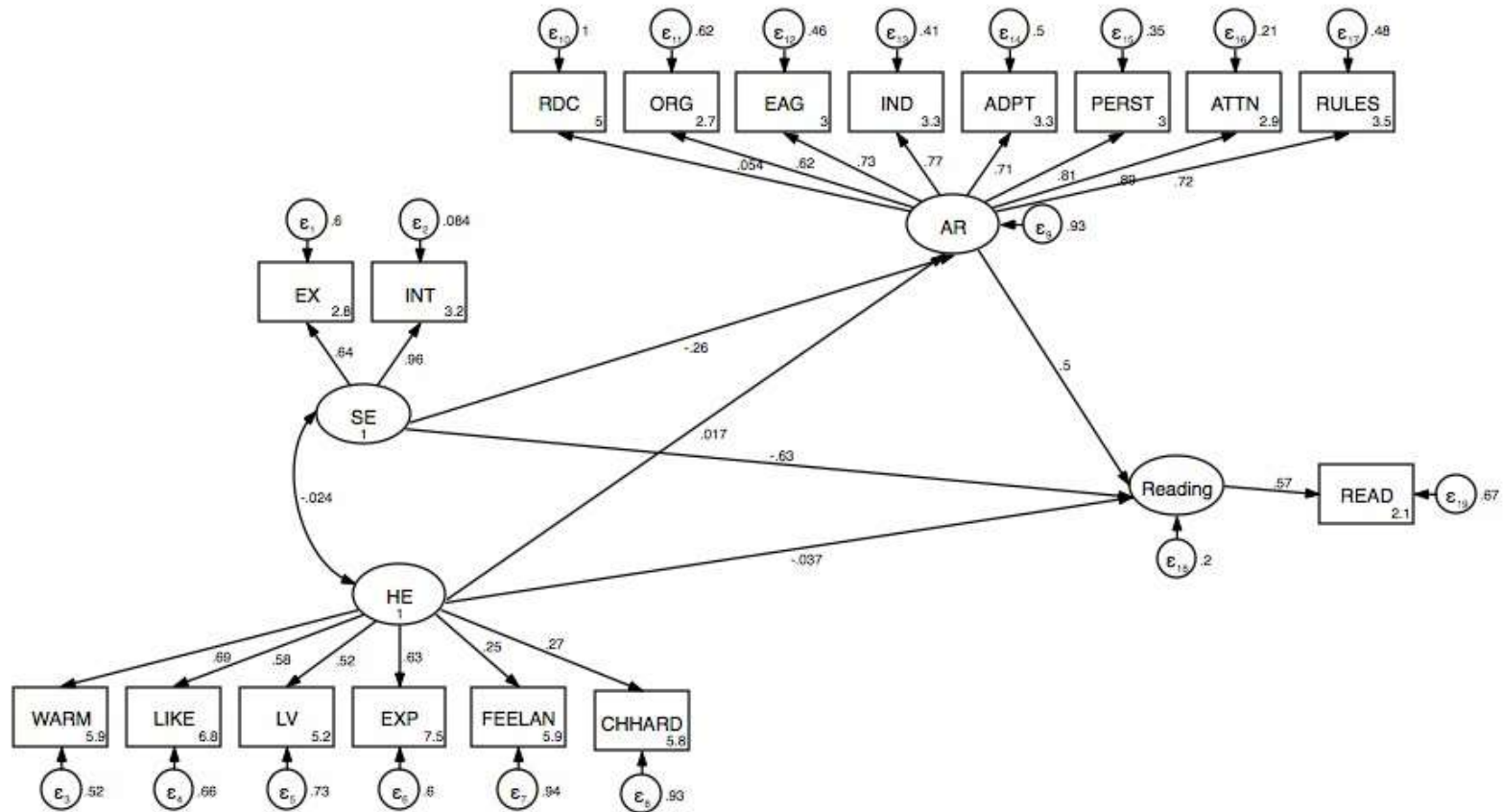


Figure 14. Path Diagram and Parameter Estimates for Hispanic Third-Grade Students

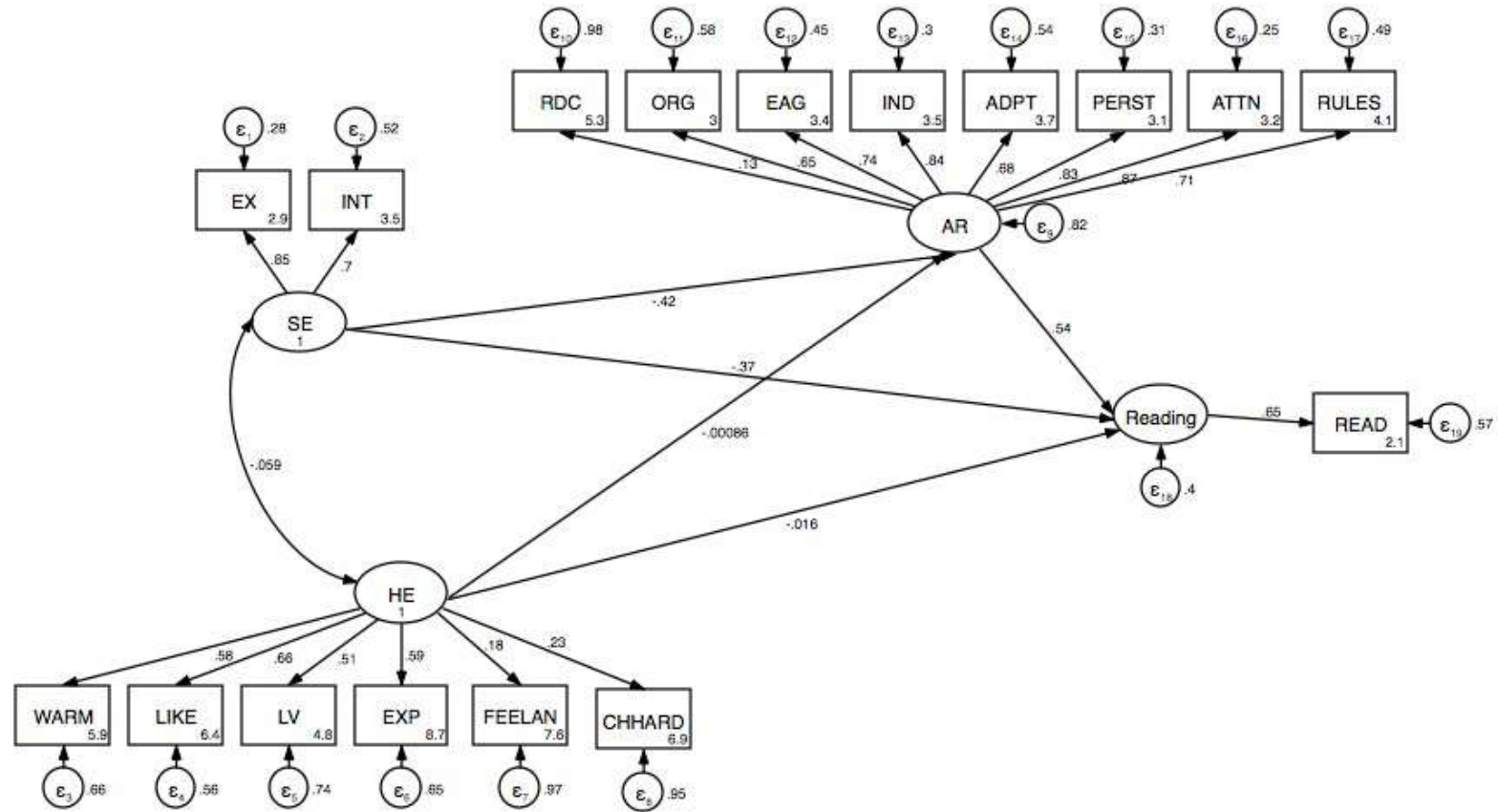


Table 23. Factor Loadings, Error Variances, and R Squares for the Measurement Model by Racial Group

Indicator Variables for Each Latent Variable	Factor Loadings and Error Variances								
	White			Black			Hispanic		
	Loading	Error	R^2	Loading	Error	R^2	Loading	Error	R^2
<i>Social Emotional</i>									
Externalizing Behaviors (EX)	.873	.237	.762	.636	.596	.404	.847	.283	.717
Internalizing Behaviors (INT)	.677	.542	.458	.957	.084	.916	.695	.517	.483
Reliability	.74			.75			.75		
<i>Home Affective Environment</i>									
{child} and I often have warm times together (WARM)	.696	.516	.484	.689	.525	.475	.583	.660	.340
Most of the time I feel that {child} likes me and wants to be near me (LIKE)	.685	.530	.470	.580	.664	.336	.660	.564	.436
Even when I am in a bad mood I show {child} a lot of love (LV)	.531	.718	.282	.520	.729	.271	.513	.736	.264
I express affection by hugging, kissing and praising{child] (EXP)	.507	.743	.257	.632	.600	.400	.588	.654	.346
I often feel angry with {child}(FEELAN)	.306	.907	.093	.251	.937	.063	.184	.966	.034
{Child} seems harder to care for than most (CHHARD)	.259	.933	.067	.270	.927	.073	.230	.947	.053
Reliability	.65			.64			.60		
<i>Academic Resilience</i>									
Reading Competence (RDC)	.209	.956	.044	.054	.997	.003	.132	.983	.017
Keeps belongings organized (ORG)	.667	.555	.445	.620	.616	.384	.650	.578	.422

Table 23 Continued

Indicator Variables for Each Latent Variable	Factor Loadings and Error Variances								
	White			Black			Hispanic		
	Loading	Error	R^2	Loading	Error	R^2	Loading	Error	R^2
Shows eagerness to learn new things (EAG)	.706	.502	.498	.734	.462	.538	.741	.451	.549
Works independently (IND)	.824	.321	.679	.770	.407	.593	.837	.299	.702
Easily adapts to change (ADPT)	.645	.584	.416	.709	.497	.503	.679	.538	.462
Persists in completing tasks (PERST)	.840	.295	.705	.808	.347	.653	.828	.315	.685
Pays attention well (ATTN)	.874	.235	.765	.887	.213	.787	.869	.245	.755
Follows classroom rules (RULES)	.724	.476	.524	.719	.483	.517	.714	.490	.510
Reliability	.89			.88			.88		
<i>Reading</i>									
Reading Achievement Scores (READ)	.531	.718	.282	.575	.670	.330	.654	.573	.427
Reliability	.94			.94			.94		

The overall results for the White third-grade children's path model were found to be a good fit with an RMSR of .049 and a Coefficient of Determination (CD) of .96 indicating that the exogenous variables explain 96% of the variance in the endogenous variables. The RMSR for the model for Black third-grade children was .058 with a Coefficient of Determination of .98. The fit for Hispanic third-grade children was good to the sample data as evidenced by an RMSR of .061 and a Coefficient of Determination (CD) of .94.

The unstandardized and standardized path coefficients (B) showing the relationship between Home Environment, Social-Emotional Behaviors, Academic Resilience, and Reading Achievement are presented in Table 23 by racial group. These results show the relationship between Academic Resilience and Reading Achievement was moderate and significant for all three racial groups. However, Social-Emotional Behaviors had a significantly negative relationship with Academic Resilience and Reading Achievement for White and Hispanic third-grade students while this same relationship was not significant for Black third-grade students. The path coefficients for all three racial groups were considered small effects when using Cohen's (1988) recommendations for interpreting effect size. Home Affective Environment, on the other hand, was not found to be significantly related to either Academic Resilience or Reading Achievement for all three racial groups. The path coefficients were found to be negative and small in magnitude. The correlation between Home Environment and Social-Emotional Behaviors for White third-grade students was negative and significant but the

size of the coefficient (-.040) was considered to be very small in magnitude. The correlation between Home Affective Environment and Social-Emotional Behaviors for Black and Hispanic students was found to be positive but very small in magnitude and not significant.

Results presented in Table 24 show that the coefficients for the paths from Social-Emotional Behaviors to Academic Resilience, and Social-Emotional Behaviors to Reading Achievement for all three racial groups were moderate. However, for both the Low SES and High SES groups the paths coefficients for both Home Affective Environment to Academic Resilience and Home Affective Environment to Reading Achievement evidenced were non-significant and small in magnitude. The two models for both males and females were compared to determine if differences existed across path coefficients.

These same procedures used for comparing gender and SES groups were also used for comparing the three racial groups. Again, values of d are interpreted in the same manner as the Cohen's d with .20 = small, .50 = moderate and $\geq .80$ = large. For this comparison, results found large to moderate differences between White and Black third-grade children. Large differences between path coefficients from Social-Emotional Behaviors to Academic Resilience and Home Affective Environment to Social-Emotional Behaviors were found in favor of White third graders when compared to Black third-grade children. Small to moderate differences were found when comparing White and

Black third-grade children on the path coefficients for Academic Resilience and Reading and Home Affective Environment and Reading Achievement.

Large differences were found when comparing White and Hispanic third-grade children on path coefficients from Home Affective Environment to Academic Resilience and Social Emotional to Reading Achievement. White third graders had a much higher path coefficient for the Home Affective Environment to Academic Resilience path while Hispanic students had a higher coefficient for the Social Emotional to Reading Achievement path. The differences in path coefficients for White and Hispanic third-grade children ranged from small to moderate for the paths from Social-Emotional Behaviors to Academic Resilience, Academic Resilience to Reading Achievement, Home Affective Environment to Reading Achievement and Home Affective Environment to Social-Emotional Behaviors. The coefficients for White third graders was higher for all coefficients with the exception of the path coefficient for Academic Resilience to reading where the Hispanic third-grade path coefficient was higher. The relationship between Home Affective Environment and Social-Emotional Behaviors was significant yet small for White third-grade children only.

Table 24. Unstandardized Path Coefficients, Standardized Path Coefficients, Significance Levels, and Differences (*d*) by Racial Group

Paths	White				Black				<i>d</i>	Hispanic				
	B	<i>b</i>	<i>SE</i>	<i>p</i>	B	<i>b</i>	<i>SE</i>	<i>p</i>		B	<i>b</i>	<i>SE</i>	<i>p</i>	<i>d</i>
SE -> AR	-.112	-.472	.019	>.001	-.018	-.258	.073	.001	.83	-.058	-.424	.060	>.001	.48
HE -> AR	.013	.043	.025	.090	.001	.017	.059	.771.	.92	-.001	-.001	.048	.986	1.00
AR -> Reading	.782	.713	.046	>.001	2.43	.497	.093	>.001	.36	1.40	.545	.102	>.001	-.44
SE - > Reading	-.101	-.391	.047	>.001	-.215	-.627	.084	>.001	-.53	-.130	-.370	.109	.001	.72
HE - > Reading	-.013	-.036	.035	.293	-.011	-.037	.050	.451	.15	-.009	-.016	.078	.834	.30
HE < - > SE	-.040	-.152	.029	>.001	-.005	-.024	.060	.686	.88	-.013	-.059	.046	.198	.32

Table Note. B= Unstandardized Path Coefficient, *b*= Standardized Coefficients, *SE* = Standard Error, *d* = standardized difference between the reference group (White) and the Black and Hispanic racial groups

The standardized direct, indirect, and total effects of Social-Emotional Behaviors, Home Environment, and Academic Resilience on Reading Achievement are reported in Table 25. Results from the mediation analysis, show that Academic Resilience significantly mediated the total effects of Social-Emotional Behaviors on Reading Achievement for all three racial groups. Academic Resilience was found to partially mediate 46% of the total effects Social-Emotional Behaviors on Reading for White Third graders, 38% for Hispanic Third-grade children and 17% of for Black third-grade children. As with gender and socioeconomic status the mediation effects of Academic Resilience on the total effects of Home Affective Environment on Reading achievement because of the small and non-significant relationships that Home Environment had with Academic Resilience and Reading achievement across racial groups. However, for White third-grade children, the relationship between Home Affective Environment and Academic Resilience was significant but not the relationship between Home Affective Environment indicating that the effects of mediation should not be calculated.

Table 25. Standardized Direct, Indirect and Total Effects for Social-Emotional Behaviors, Home Environment, and Academic Resilience on Reading Achievement by Racial Group

Direct						Indirect				Total			Percent Mediated		
	White	Black	Hispanic	White		Black		Hispanic		White	Black	Hispanic	White	Black	Hispanic
Paths	B	B	B	B	<i>p</i>	B	<i>p</i>	B	<i>p</i>	B	B	B			
SE - > Reading	-.391	-.627	-.370	-.337	.007	-.128	>.001	-.230	>.001	-.728	-.755	-.600	46%	17%	38%
HE - > Reading	-.036	-.037	-.016	.030	.006	.009	.770	-.001	.986	-.006	-.028	-.017	100%	-	-

Table note. *b* = Standardized Coefficient, *SE* = Standard Error, *p* = Probability of significance

Chapter Four Hypothesis Summary by Research Question

Research Questions and Hypotheses

Research Question 1: Is there a relationship among academic resilience, home environment, social-emotional behaviors and Reading achievement?

Hypothesis Set 1:

H₀: There is not a relationship between Social-Emotional Behaviors and Academic Resilience

H₁: There is a relationship between Social-Emotional Behaviors and Academic Resilience

For this set of hypotheses, we accept the alternative hypothesis because Social-Emotional Behaviors are significantly related to Academic Resilience.

Hypothesis Set 2:

H₀: There is not a relationship between Social-Emotional Behaviors and Reading Achievement

H₁: There is a relationship between Social-Emotional Behaviors and Reading Achievement.

The alternate hypothesis is accepted because the relationship between Social-Emotional Behaviors and Reading Achievement was significant.

Hypothesis Set 3:

H₀: There is not a relationship between Home Affective Environment and
Academic Resilience

H₁: There is a relationship between Home Affective Environment and Academic
Resilience

The null hypothesis is accepted, as there is not a significant relationship between
Home Affective Environment and Academic Resilience

Hypothesis Set 4:

H₀: There is not a relationship between Home Affective Environment and
Reading Achievement

H₁: There is a relationship between Home Affective Environment and Reading
Achievement

The null hypothesis is accepted, as there is not a significant relationship between Home
Affective Environment and Reading achievement.

Research Question 2: Is there a relationship between Home Affective Environment and
Social-Emotional Behaviors?

Hypothesis Set 5:

H₀: There is not a relationship between Home Affective Environment and Social-
Emotional Behaviors

H₁: There is a relationship between Home Affective Environment and Social-Emotional Behaviors.

The alternative hypothesis is accepted there is a very small significant relationship between Home Affective Environment and Social-Emotional Behaviors.

Research Question 3: Does academic resilience mediate the effects of Social-Emotional Behaviors and Home Affective Environment factors on reading achievement?

Hypothesis Set 6:

H₀: Academic Resilience does not mediate the effects of Home Affective Environment on Reading Achievement

H₁: Academic Resilience mediates the effects of Home Affective Environment on Reading Achievement

The alternative hypothesis is accepted because Academic Resilience mediates a significant proportion of the total effects of Social-Emotional Behaviors on Reading Achievement.

Hypothesis Set 7:

H₀: Academic Resilience does not mediate the effects of Home Affective Environment on Reading Achievement

H₁: Academic Resilience mediates the effects of Home Affective Environment on Reading Achievement

The null hypothesis is accepted because Home Affective Environment was not significantly related to Reading Achievement and thus mediation effects were not calculated.

Research Question 4: Does the relationship between Academic Resilience, Home Affective Environment, and Social-Emotional Behaviors differ by gender, SES, or racial groups?

Hypothesis Set 8:

H₀: The relationships between Academic Resilience, Home Affective Environment, and Social-Emotional Behaviors do not differ by gender, SES, or racial groups

H₁: The relationships between Academic Resilience, Home Affective Environment, and Social-Emotional Behaviors do differ by gender, SES, or racial group.

The alternative hypothesis is accepted because there were differences between the relationships between Social-Emotional Behaviors, Home Affective Environment, Academic Resilience, and Reading Achievement when considering gender, SES, and racial groups. In terms of effect size, the only difference in coefficients between male and females was for the relationship between Home Affective Environment and Reading. The male coefficient was moderately (.45) larger than the coefficient for females. However, both coefficients were very small ($< .10$) and not significant.

There were also differences between High and Low SES groups when comparing path coefficients. Large to moderate differences in favor of High SES groups were found for the relationships between Social-Emotional Behaviors and Academic Resilience, Home Affective Environment and Academic Resilience, Academic Resilience and Reading Achievement and Home Affective Environment and Reading Achievement. However, the only coefficients of moderate effect and, therefore noting as important, was for the relationship between Academic Resilience and Reading Achievement where the relationship between High SES students and Low SES students was found to be moderate.

Differences between racial groups were also found when examining path coefficients. The relationship between Social-Emotional Behaviors and Academic Resilience was moderate to large in favor of White third-grade students as compared to Black and Hispanic students. Likewise, the relationship between Home Affective Environment and Academic Resilience was moderate to large in favor of White third-grade students as compared to Black and Hispanic students. However, these coefficients across racial groups were small in magnitude ($< .50$). A moderate difference in favor of Black third-grade children as compared to white children was found for the negative relationship between Social-Emotional Behaviors and Reading Achievement, while White third-grade students had a moderately higher path coefficient than Hispanic students the relationship between the same variables.

Research Question 5: Does Academic Resilience mediate the effects of Social-Emotional Behaviors and Home Affective Environment factors on Reading Achievement across gender, SES, and racial groups?

Hypothesis Set 9:

H₀: Academic Resilience does not mediate the effects of Social-Emotional Behaviors on Reading Achievement across gender, SES, and racial groups

H₁: Academic Resilience mediates the effects of Affective Home Environment on Reading Achievement across gender, SES, and racial groups.

The alternative hypothesis is accepted because Academic Resilience was found to partially yet significantly mediate the total effects of Social-Emotional Behaviors on Reading Achievement for both male and female, Low and High SES and White, Black, and Hispanic third-grade children.

Research Question 6: Is there a relationship between Home Affective Environment and Social-Emotional Behaviors across gender, SES, and racial groups?

H₀: There is not a relationship between Home Affective Environment and Social-Emotional Behaviors across gender, SES, and racial groups.

H₁: There is a relationship between Home Affective Environment and Social-Emotional Behaviors across gender, SES, and racial groups.

The alternative hypothesis was accepted for gender, SES, and racial groups. The relationship between Home Affective Environment and Social-Emotional Behaviors was significant yet very small and both males and females and for Low SES and High SES

groups. The relationship between Home Affective Environment for White third graders was significant but not for Black or Hispanic third-grade students. The null hypothesis was accepted for the full grade sample because the relationship between Home Affective Environment and Social-Emotional Behaviors were not significantly related. The null hypothesis was also accepted for Black and White third-grade children again because the relationship between Home Affective Environment and Social-Emotional Behaviors was not significant.

Chapter Summary

Structural Equation Modeling (SEM) was used to analyze the relationships between Social-Emotional Behaviors, Home Affective Environment, Academic Resilience, and Reading Achievement. The advantage of SEM is that it allows for the modeling of complex relationships while accounting for measurement error associated with the observed variables used to measure the constructs analyzed in the model. Overall, for the full third-grade sample, there was a significant relationship between Social-Emotional Behaviors and Reading Achievement and Social-Emotional Behaviors and Academic Resilience. Academic Resilience mediated a significant proportion of the total effects of Social-emotional behaviors on Reading Achievement. However, Home Affective Environment was not significantly related to Reading Achievement preventing the calculation of any meaningful mediation effects. Similar results were found when analyzing the same relationships by gender, SES, and racial groups.

CHAPTER FIVE

Introduction

This study sought to investigate the relationships between academic resilience, home environment, social-emotional factors and reading achievement. The effects of academic resilience as a mediator of the effects of home environment and social-emotional behaviors were also examined. The data analyzed in this study were self-reported by the students, their teachers, and their parents via survey questionnaires and parental interviews taken from the Early Childhood Longitudinal Program-Kindergarten Study. The students in the study are a representative cohort of over sixteen thousand third-grade students who were kindergarteners during the school year of 1998-99. This is a nationwide sampling of students from all regions of the United States and the data was collected by the National center for educational statistics. Students from all racial backgrounds and socio-economic statuses are represented in the sample.

Social-Emotional Behaviors, Academic Resilience and Reading Achievement

In general results from this research found a negative, moderate, and significant relationship between Social-Emotional Behaviors and Academic Resilience. The third-grade data overall indicated that problem behaviors associated with externalizing and internalizing behaviors were negatively associated with positive learning behaviors represented by the academic resilience construct. These results are similar to those found by Hair, Halle, Terry-Humen, Lavelle & Calkins (2006) who used data from the ECLS-K

dataset to study the effects of kindergarten children with at-risk social-emotional profiles on cognitive and language development. Their results found that children with low ratings on a measure of social-emotional development scored much lower on reading and mathematics assessments than children with high ratings of social-emotional development. More recent research conducted by Morgan, Farkas, Tufis & Sperling (2015) found results similar to those presented in this study and those reported by Hair et al. (2006). They analyzed data from a group of first-grade students selected from the ECLS-K data and found that first graders with reading problems were significantly more likely to display poor task engagement, poor self-control, externalizing behavior problems, and externalizing behavior problems. In addition, Morgan et al. (2015) found first grade students with poor task engagement skills were likely to experience more reading problems in the third-grade.

Overall results from this study further found that the relationship between third-grade students' social-emotional behaviors and academic resilience was also found to be negative. That is, students with poor social-emotional behaviors also had lower teacher ratings on self-regulatory and motivational behaviors that Martin & Marsh (2008) suggest are key attributes of academic resiliency. These results are similar to what Johnston (2005) found when studying the idea of changing literacy assessments for future implications. Johnston's findings show that assessments of kindergarten students' resilience were actually a better indicator of their reading achievement in first and second grade when compared to their phonological knowledge assessed at the kindergarten level. Morgan et al. (2015) also used the ECLS-K data set found that students who measured

low in academic resiliency in first grade had a much greater likelihood of poor reading achievement in third-grade as opposed to their classmates with high academic resiliency in the first-grade year. Likewise, they also found that low reading achievement in first grade translates to decreased academic resilience and increased social-emotional problems in third-grade.

Results from this study as well as those from Hair et al. (2006) and Morgan et al. support the negative relationship between problem behaviors and behaviors characterizing academic resilience in this study (e.g., Blair & Razza, 2007; Bodvoski & Youn, 2011; Cassidy, 2017; Li Ginning et al, 2010). However, results from this study, as well as from others, are contrary to findings reported by Duncan et al. (2007). Their study analyzed six large-scale longitudinal datasets collected by the United States, Canada, and Great Britain and found that there was not a significant relationship between internalizing and externalizing behaviors and academic achievement. A limitation of the research by Duncan et al. (2007) is that they did not include in their analysis teacher ratings of children's Approaches to Learning (ATL), which have been characterized as key learning behaviors important for academic resilience (Marsh & Martin, 2008, Cassidy, 2016, Li Grinning et al, 2010). Li-Grinning et al. (2010) found that children's positive ratings of approaches to learning significantly reduced the effects of externalizing and internalizing behaviors on achievement. Duncan et al. (2007) do, however, acknowledge that attention skills—a behavior linked to academic resilience—had both modest and consistent correlations with academic achievement, further limiting their initial claim of insignificance.

Home Affective Environment, Academic
Resilience and Reading Achievement.

In general, Home Affective Environment as conceptualized by this study was not significantly related to Academic Resilience or Reading achievement for the full third-grade sample, gender groups, SES groups, or racial groups. However, there was one exception. Results found that for High SES third graders the relationship between Home Affective Environment and Academic Resilience was significant as well as the relationship between Home Affective Environment and Reading achievement. Although significant, these relationships were very small in magnitude and the relationship for High SES third-grade children and Reading achievement was negative. However, the coefficients for High SES children were still larger than those for Low SES children. One reason for this difference may, in fact, be the availability of reading materials in the home for High SES children as compared to Low SES children. Aiken & Barbarin (2008) research discussed earlier also found that children from Low SES homes grow up in home environments that are poor in literacy experiences. For example, their research found that children from Low SES homes had fewer opportunities to read with parents and fewer books in the home than High SES children. The negative relationship, although small, between Home Affective Environment for High SES children is difficult to explain, but is likely due to other contextual factors that mediate the effects of home environment. For example, when the path from Home Affective Environment to Academic Resilience is removed, the coefficient for the direct relationship between Home Affective Environment becomes non-significant.

In general, these results from this study are similar to prior research studies such as the one conducted by Bodovski and Youn (2009) regarding love, discipline, and achievement in the primary grades. They used the ECLS-K dataset to investigate the relationships between kindergarten students' home environment and achievement. Home environment for this study was defined as family emotional climate and was assessed using ECLS-K data that assessed parental depression, parental warmth, and the use of physical discipline. While Bodovski & Youn (2009) did not find significant relationships among parental warmth, physical discipline, and student behavior, they did find that greater parental depression and physical discipline in kindergarten significantly and positively correlated with lower achievement by the time kindergarten students reached fifth grade. Consequentially, the nexus of their results is that home affective environment (family emotional climate) has a significant impact on academic achievement. The reason for the divergence between their results and the results of this study can be explained by the difference of indicators selected to operationalize Home Affective Environment (family emotional climate) for this study. This study operationalized Home Affective Environment with items that measured parents' perceptions of the relationships they had with their children including warm times together, child wants to be near me, expressing affection, frequency of anger at the child, and hardness of the interactions with the child. However, although Bodovski and Youn (2009) did use some ECLS-K to measure parental warmth, they did not include items assessing other important emotional determinants of home environment such as parental anger at the child and difficult child-parent interactions.

Research by Aiken & Barbarin (2008) found similar results to this study that suggests that Home Affective Environment is not related to Academic Resilience or Reading achievement. They measured parental warmth using ECLS-K items similar to those use in this study but did not include measures of difficulty of child-parent interactions or parental anger. Like this study, Aiken & Barbarin (2008) found no significant relationship between parental warmth when measuring growth in reading achievement between kindergarten and third-grade. Another important outcome of their study was that school and neighborhood conditions contributed more to student achievement than other environmental factors, including parental warmth at home.

Although research shows that one's home environment is related to social-emotional development, this development is also dependent on interactions with other persons such as peers, significant others, teachers in the environment as illustrated in the work by Xu, Kushner Benson, Mudrey-Camino & Steiner (2010). Their research investigated the relationships between self-regulated learning, parental involvement, and reading achievement of fifth graders from ECLS-K study. The indicators used by Xu et al. (2010) used to measure self-regulated learning are very similar in content to those items measuring academic resilience for this study. For example, they included items that rated children's attention to task, persistence in task completion, obeying rules, organization, adapting to changing routines. However, Xu et al. (2009) define the construct of home environment by items that measured parent-child communication, TV viewing rules (parental structure), homework help, and homework frequency. Results from their analysis found that characteristics of home environment related to parental

structure had the strongest relationships with self-regulated learning or academic resiliency and reading achievement. Again, it is posited that the different items used to measure home affective environment for this study were different from those used by Xu et al. (2009) and is likely responsible for this study's failure to find significant relationships among Home Affective Environment, Academic Resilience, and Reading achievement.

A study conducted by Nokali, Bachman & Votruba-Drzal (2010) provides mixed support for this study. They investigated the relationships among parental involvement, problem behaviors and academic achievement of 1,364 first- through fifth-grade children by analyzing data collected by the National Institute of Child Health and Human Development (NICHD) Study of Early Childcare and Youth Development. The multilevel analysis conducted by Nokali et al. (2010) found that children in homes where parents are more involved have fewer problem behaviors and better social skills. However, their research did not find a relationship between parental involvement and student achievement. This dissertation study found a small relationship between home environment and social-emotional behaviors (i.e., externalizing and internalizing behaviors) but there was not a relationship between home affective environment and reading achievement.

Academic Resilience and Reading Achievement

The study found that the relationship between academic resilience and reading achievement was positive, significant and ranged from a moderate to large effect for the full third-grade sample, and by gender, SES, and race. The positive relationship between

academic resilience and reading achievement for all third-grade students is supported by findings from other research reported in the literature (e.g., Li Ginning, 2010; McTigue, Washburn & Liew, 2009). For example, Martin and Marsh (2008) analyzed the academic resilience of students in 144 classrooms and found it to be significantly correlated with academic achievement. They coined the term “Academic Buoyancy” in reference to Academic Resilience to bridge the gap between this and the traditional view of academic resilience which they contend is used more for the extreme ends of the academic spectrum. Academic resilience as conceptualized by Martin & Marsh, to varying degrees is needed by all students in order to overcome challenges and succeed. They discuss resilience as a cycle that begins with the learner self-diagnosing the risk, then seeking interventions that counteract the negatives, and then being propelled through and beyond the risk by those interventions that serve as protective factors.

Similar to this study, Li-Grining et al. (2010) characterized the “Approaches to Learning” items as a form of academic resilience when investigating the relationship between measures of math and reading achievement and academic resilience (i.e., Approaches to Learning). They found that students with more adaptive self-regulatory behaviors such as persistence, attentiveness, and interest evidenced greater growth in reading and mathematics than their counterparts with less adaptive self-regulatory behaviors. This outcome was also true across gender and socioeconomic status. Blair and Razza (2007) found similar results to those of this study and those of Li-Grinning et al. (2010). They analyzed behaviors related to self-regulated learning for 170 mostly white Head Start students and they found that a positive relationship between self-regulatory

behaviors related to academic resilience and students' achievement. More importantly, they found that this relationship and not that of general intelligence had a far greater influence on early literacy and mathematics achievement. The outcomes from Blair and Razaa's study as well as others (e.g., McTigue, Washburn & Liew, 2009) suggest that that curriculum designed to improve self-regulatory behaviors, or behaviors to support the development of academic resilience could be the most effective intervention to support learning outcomes related to early school instruction.

Academic Resilience as a Mediator of Social Emotional Behaviors and Home Environment

A final research question for this study focused on investigating the ability to mediate, with Academic resilience, the effects of social-emotional behaviors and home environment on reading achievement. When considering social-emotional behaviors, academic resilience was found to mediate a significant proportion of the total effects of externalizing and externalizing behaviors on students reading achievement. This outcome was found across gender, SES, and racial groups. Bodvski and Youn (2011) found similar results when investigating the relationship between family emotional climate and the academic achievement of fifth-grade students selected from the ECLS-K, 1998-99 data. They examined the effects of behaviors related to academic resilience (e.g., persistence at tasks, eagerness to learn, attentiveness, learning independence, flexibility, and organization), internalizing behaviors, and externalizing behaviors on fifth-grade mathematics and reading achievement. Their results found that the behaviors related to

academic resilience neutralized the negative effects of maladaptive behaviors associated with lower reading and mathematics achievement.

Other research supporting outcomes from this study showing significant meditational effects of academic resilience on social emotional behaviors comes from research conducted by Borman and Rachuba (2001) when investigating the differential effects of academic resilience on children from low and high socio-economic groups. Individual academic resilience for this study was conceptualized as behaviors related to locus of control, general self-esteem, academic self-efficacy, and student engagement. Results from this study found that academic resilient behaviors related to greater ratings of student engagement, internal locus of control, self-efficacy in math and a more positive self-esteem were characteristic of low-SES children who performed better in mathematics. However, from an organizational view, Borman and Rachuba's research further suggests that schools and communities have a pivotal role in shaping academically resilient behaviors that will mediate the effects of maladaptive behaviors related to poor achievement outcomes. Their conclusion is similarly that of Li Grinning et al.'s (2010) research which suggest that programmatic interventions such as Head Start and the Chicago School Readiness project provide opportunities for children by mediating the effects of poor approaches to learning through enrichment activities that will serve to support the development of academically resilient behaviors that will have positive effects on student achievement.

Academic resilience was also found to partially mediate the total effects of home affective environment on reading. However, the relationship between Home Affective

Environment and Reading achievement was very small and non-significant for the full third-grade sample and across all groups except for High SES third-grade children. Although the mediation effects could be calculated, they were somewhat uninformative due to the very small indirect effects ($> .10$) of home environment on reading. These outcomes are somewhat different than outcomes reported in the literature. For example, Xu, Benson, Mudrey-Camino & Steiner (2010) in a study of fifth-grade students from the ECLS-K data found that home environments characterized by parental involvement had a positive influence on children's self-regulated learning, a core feature of academic resilience. They found that parents who provided homework help and supported their child's engagement in extracurricular activities had the largest, positive effects on learning behaviors such as task persistence, working independently, and adapting to changes in routine. Similarly, Swanson, Valiente & Lemery-Chalfant (2012) found that self-regulatory behaviors such as ability to focus, shift attention, and manage impulsivity significantly mediated the adverse effects of risky home environments on third-grade children's academic achievement.

A construct related to home environment because of the parent-like interactions that occur with children is the quality of childcare that parents use. The quality of childcare used by parents has been found to mediate the negative effects of Low SES home environments on preschool children's expressive and receptive language skills which are important precursors to positive achievement outcomes (McCartney, Daring, Taylor & Bub, 2007). For example, McCartney, Daring, Taylor & Bub (2007) found that quality of child care mediates the negative effects of home environment on pre-academic skills

(achievement.). In their study, the quality of child care was measured by an observation protocol that assessed caregiver interactions with children that among other things, influence the development of adaptive social-emotional skills related to self-regulatory behaviors that have been shown to be a key component of academic resilience (Martin & Marsh, 2009). Failure of this study as discussed earlier to find any meaningful relationships between home affective environment and academic resiliency or academic achievement is likely due to ECLS-K items that were used from the parent interview to operationalize the Home Affective Environment latent trait construct.

Discussion

This study investigated the influences of social and emotional behaviors and home affective environmental factors on reading achievement with a specific focus on academic resilience as a mediator of the impacts of negative home environmental factors and negative social-emotional behaviors on reading achievement. As anticipated, results indicated that negative social and emotional behaviors are mediated by positive learning approaches defined by this study as academic resilience. Outcomes from this study found that behaviors associated with academic resilience can mediate the negative effects of social and emotional behaviors on academic achievement by as much as fifty-one percent. When viewed through the lens of Bronfenbrenner's bioecological model of development, the development of positive social and emotional behaviors will have the greatest impact on student achievement when schools form partnerships with communities and families to create environments that support the development of prosocial behaviors and skills.

Schools themselves can play a larger role in supporting students' development of academic resilience. The results of this study are important because they show how important the role of academic resilience is in reducing the negative impact on student achievement as a result of the social and emotional factors and behaviors many students struggle with every day. For these reasons, learning approaches related to academic resilience need to be infused into curriculum district-wide with a heightened focus in the early primary years as this research has shown that building resilience skills early translates to academic success sooner.

While there has been very little attention given to supporting childhood socioemotional growth to promote the development of academic resilience through intervention and prevention, the need is clear and thus the focus is trending in the right direction as far as public education is concerned. An emphasis on social emotional learning (i.e., academic resilience) is just as important as the basic academic skills typically emphasized in formal k-12 school curricula (Martin & Marsh, 2009). Failure by schools to provide a holistic education that includes not only an emphasis on academics but also on the social-emotional needs of children in the K-12 curriculum, disadvantages those who find themselves in home environments that are under-resourced and lack positive parent role models. Children who come from home environments where parents help them with homework, read to them, make books available and attend school activities are advantaged because their parents interact in ways that model effective approaches to learning which promote the development of academically resilient behaviors (Aikens & Barbarin, 2008; Xu, Kushner Benson, Mudrey-Camino & Steiner

(2010). However, not all children have access to home environments that are conducive to the development of social-emotional behaviors which we now know are related to positive learning behaviors. These children will need to rely on their schools and community organizations to support the development of self-regulatory behaviors and other positive habits that will provide durable learning behaviors that are resilient to disruptive changes in their learning environments.

Community programs designed to support the development of positive social and emotional behaviors similar to those discussed by Zins and Elias (2007) should be considered when developing K-12 school curriculum that is designed not only to teach content but also positive behaviors necessary for effective learning and necessary for succeeding in life. They suggest a curriculum that focuses on five key components: Self-Awareness, Social Awareness, Responsible Decision-Making, Self-Management, and Relationship Skills. For example, content specific instructional activities that teach students' self-confidence and self-efficacy skills as well as self-management skills which include impulse control, motivation, goal setting, stress management, and persistence. Emphasizing the positive end of the spectrum for these behaviors within the context of instruction will positively impact most all students in broad and varying degrees. Moreover, an important consideration when planning curriculum that includes a social-emotional component that addresses positive approaches to learning is to also incorporate activities that promote a sense of belonging. Maslow's Hierarchy of Needs (Lester, 2013) theorizes that one's sense of belonging is foundational to self-actualization or in this case higher levels of achievement. Elias et al. (1997) have developed a comprehensive set of

guidelines that specifically focuses on the development of social and emotional learning curricula. Their guidelines provide a valuable resource to schools that want to develop K-12 curriculum that includes instruction and outcomes related to learning positive social and emotional behaviors.

Although schools are positioned as a single organization to provide social and emotional learning environments, they may benefit by partnering with community organizations that also focus on helping children to develop positive social and emotional behaviors. For example, Head Start is an exemplary program that partners with the public schools for developing early learning approaches for pre-kindergarten children and supporting families in their efforts to develop positive learning behaviors for their children as well. The key characteristic of the success of the Head Start program is that children's family are included within the pre-school learning environment. The family system is the most crucial and influential component in early learning for children, thus explaining the necessity of healthy and robust relationships between families and schools (Fantuzzo, McWayne, and Perry, 2004). Fantuzzo, McWayne, and Perry's (2004) study of Head Start programs found that home involvement was the strongest outcome predictor for student behaviors and achievement with significant correlations to motivation, persistence, attention, vocabulary acquisition, and low behavior problems. They also found that school-based involvement led to low conduct problems, but only when combined with the home-based involvement.

In addition to formal programs such as Head Start, there are other school-based programs have been implemented to support social and emotional learning. Although not

integrated into the regular school curriculum, results from this study support efforts by schools to implement after-school programs where “at-risk” students are mentored by older youth or adults. Research by Randolph & Johnson (2008) suggests that these informal, school-based programs have positive effects on children’s prosocial behaviors. The goal of these programs is to create long-term and frequent mentor-child relationships that will help to develop positive social and emotional behaviors. For example, the Bozeman Public Schools in Bozeman, Montana have implemented the Thrive after school mentoring program that is designed to help students develop positive social interactions and other positive behaviors that will support their learning. Mentors must be 18 years of age and are paired with students with similar interests. Students and mentors engage in after school activities that include playing games, sporting activities, listening to music, working on homework, and other activities that promote positive interactions and opportunities for mentors to model positive social and emotional behaviors.

An unanticipated finding was that home affect environmental factors were not related to academic resilience or reading achievement. This particular finding is not consistent with much of the literature that was reviewed for this study, but there are two viable explanations for the contradictory results found by this study. First, the ECLS-K survey questions used to measure the home affective environment construct were self-reported by parent interview which and calls into question the validity of responses to the survey items used because they are dependent on trusting parents to self-report negative parenting behaviors to a researcher. Morsback & Printz (2006) highlighted the issue of parents’ responding in socially desirable ways to in parent interview questions such as

those used by the ECLS-K 1998-99 program. Second, additional items or alternative items used to measure the home affective environment construct may have yielded different results. However, the intent of this research was to focus on the affective influence of home environments on reading achievement rather than parental interactions related to attending school events, parental structure and helping with homework.

The literature is clear about the importance of a positive home environment where parents provide good role models and interact positively with their children, and how these interactions are related to the development of social and emotional behaviors aligned with positive learning behaviors related to academic resilience (Borman and Rachuba; 2001; Li Grinning et al, 2010; Martin & Marsh, 2009). This implication from the literature clearly indicates that the programs already discussed such as Head Start and informal after-school mentoring programs are important for supporting the development of prosocial behaviors important for learning and success in life for children that come from a range of home environments that vary by resources and parental support.

Recommendations for Future Research

Based on this research, future researchers should add to the understanding of the relationships among social-emotional behaviors, home environment, academic resilience, and reading achievement by deepening the research around teaching social-emotional learning as part of the curriculum as studied by Zins and Elias (2007), by increasing the level of research into parental involvement in early education as discussed by Niehaus and Adelson (2014) and Fantuzzo, McWayne, and Perry (2004), and further study into the effects of promoting resilience and sheltering from adversity as discussed by Borman

and Overman (2004). Also, future researchers could mirror this study with other achievement areas such as math and science.

Additionally, future researchers could attempt to create a scale for “Home Affective Environment” that is better suited for assessing the affective relationships that parents have with their children. This could help to create a construct that has a better relationship to academic resilience (development of self-regulation behaviors) that the literature seems to suggest should be there. Another endeavor for future research could be to look at alternative models. For example, perhaps the social-emotional factor is a product of home environment, but not affective home environment. Analyzing the way in which Home Affective Environment was measured for this study, it is possible that the items just did not correlate to Academic Resilience and Reading Achievement because better measurements need to be discovered and other indicators are more applicable.

Conclusions

Results from this study show how important academic resilience is in terms of student achievement, even showing that academic resilience can mediate a significant proportion of the negative social-emotional factors many students struggle with every day. For these reasons, a curriculum that integrates social and emotional learning to promote the development of academic resilience is an important component for inclusion into the K-12 curriculum district-wide with heightened focus in the early primary years. Although home affective environment was not identified as an important factor related to positive gains in student achievement, there was some evidence that it was inversely related to children’s social and emotional behavioral behaviors.

The implications for teachers from this study suggest a paradigm shift in curriculum development and how they teach. A complete instructional overhaul is not necessary, but instead the recognition of the need for and the inclusion of a social and emotional learning curriculum. However, the curricular reforms needed to address social and emotional learning goals will present challenges. Teachers will need to see the need for this type of instruction, participate in professional development activities, and be willing to put forth the effort to integrate social and emotional learning instruction within content domains, especially in the upper grades.

The value of this study for teachers quite simply will be the ability to spend more class time teaching and less time addressing behaviors. By teaching social-emotional skills, not only will teachers enjoy a more productive teaching environment for their students and their own professional experience, they will also be rewarded with higher achievement in their students which can translate to more learning time available for both broader and deeper learning opportunities.

As with this study, Michael Bernard (2006) found that social-emotional factors do in fact mediate the impact of classroom instruction. His findings along with results from this study show that the development of social-emotional competencies is necessary not just for students at-risk, but is of value in helping all students in their efforts to reach their fullest potential in both academic and social domains. The implications for learners is that emphasizing social and emotional development in k-12 schools and their associated communities will benefit all learners as they pursue careers and professions of their choice after leaving the public-school system. In upper grades, especially, social-

emotional instruction that is not authentic and related students' interests is likely to encounter a fair amount of skepticism because the content taught will not sound, look, or feel at all like traditional curricula such as English, mathematics, and science. Some students may be uncomfortable with instruction that is not contained to academics. However, learners will need to participate and engage in possibly uncomfortable topics that challenge their current behaviors to revolutionize their learning experience and transform the trajectory of their post-secondary lives. Students benefiting from social-emotional learning curriculum will not only achieve better academically, but they will also learn necessary skills that will equip them for life and relationships both in and out of school. This can mean a better public school experience, decreased anxiety, increased confidence, improved mental and social health, and more.

The implications for school governance are multi-faceted. School administrators must first identify the social-emotional needs and capabilities of all their stakeholders with a primary focus on the students' needs. Then the appropriate curricular program must be selected, presented to the teachers, and initiated with proper training opportunities. The implementation may require schedule modification. While many middle schools have advisory periods built in, most high schools do not. At this level, depending on the district, the teachers' union may also need to be involved with a memorandum of understanding in which there is a consensus in what may be regarded as an increase in duty. Elementary schools benefit from less rigid curricular scheduling as that is often the discretion of the classroom teacher, so implementation at that level will likely see fewer hurdles in regard to the scheduling concerns. At the higher echelon of

education, state superintendents and their staff could greatly ease the burden of the local district by initiating social-emotional learning from the top down as part of each state's mandated curriculum. From this position, it would also be less arduous to obtain funding for the effort as that is generally set by the state policy makers anyway and therefore could be incorporated in annual budgetary spending. The value of incorporating social and emotional learning in the curriculum for school administrators is that overall the school is more likely to reach goals that characterize an effective school when students are taught positive approaches to learning and interacting with others.

The significance of this study is found in the outcomes which suggest that positive approaches to learning, or academic resilient behaviors, can dramatically reduce the negative effects of poor social and emotional behaviors on academic achievement. The importance of these outcomes for schools as communities is that social-emotional programs need to be taught both independently from and intertwined with academic skills; that there be regular, frequent, and multiple opportunities for all students to develop social-emotional skills; and that these skills be reinforced throughout all facets of the school organization.

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APPENDIX A

CATEGORIZED LIST OF ECLS-K VARIABLES

ECLSK Code	ECLS-K Variable	Data Source	Scale
<u>Academic Resilience</u>			
C5SDQ4	I get good grades in reading	3 rd Grade SDQ	Four points ranging from 1 = Not at all true to 4 = Very true
C5SDQ10	I like reading	3 rd Grade SDQ	Four points ranging from 1 = Not at all true to 4 = Very true
C5SDQ13	Work in reading is easy for me	3 rd Grade SDQ	Four points ranging from 1 = Not at all true to 4 = Very true
C5SDQ18	I am interested in reading	3 rd Grade SDQ	Four points ranging from 1 = Not at all true to 4 = Very true
C5SDQ21	I cannot wait to read each day	3 rd Grade SDQ	Four points ranging from 1 = Not at all true to 4 = Very true
C5SDQ33	I am good at reading	3 rd Grade SDQ	Four points ranging from 1 = Not at all true to 4 = Very true
C5SDQ35	I like reading long chapter books	3 rd Grade SDQ	Four points ranging from 1 = Not at all true to 4 = Very true
C5SDQ39	I enjoy doing work in reading	3 rd Grade SDQ	Four points ranging from 1 = Not at all true to 4 = Very true
C6SDQ6	Work in math is easy for me	3 rd Grade SDQ	Four points ranging from 1 = Not at all true to 4 = Very true
C6SDQ12	I cannot wait to do math each day	3 rd Grade SDQ	Four points ranging from 1 = Not at all true to 4 = Very true
C6SDQ16	I get good grades in math	3 rd Grade SDQ	Four points ranging from 1 = Not at all true to 4 = Very true
C6SDQ22	I am interested in math	3 rd Grade SDQ	Four points ranging from 1 = Not at all true to 4 = Very true
C5SDQ26	I can do very difficult problems in math	3 rd Grade SDQ	Four points ranging from 1 = Not at all true to 4 = Very true
C5SDQ30	I like math	3 rd Grade SDQ	Four points ranging from 1 = Not at all true to 4 = Very true
C5SDQ36	I enjoy doing work in math	3 rd Grade SDQ	Four points ranging from 1 = Not at all true to 4 = Very true

C5SDQ41	I am good at math	3 rd Grade SDQ	Four points ranging from 1 = Not at all true to 4 = Very true
C5SDQ2	I am good at all school subjects	3 rd Grade SDQ	Four points ranging from 1 = Not at all true to 4 = Very true
C5SDQ8	I enjoy doing work in all school subjects	3 rd Grade SDQ	Four points ranging from 1 = Not at all true to 4 = Very true
C5SDQ15	Work in all school subjects is easy for me	3 rd Grade SDQ	Four points ranging from 1 = Not at all true to 4 = Very true
C5SDQ28	I like all school subjects	3 rd Grade SDQ	Four points ranging from 1 = Not at all true to 4 = Very true
C5SDQ38	I look forward to all school subjects	3 rd Grade SDQ	Four points ranging from 1 = Not at all true to 4 = Very true
C5SDQ42	I get good grades in all school subjects	3 rd Grade SDQ	Four points ranging from 1 = Not at all true to 4 = Very true
<u>Approaches to Learning</u>			
T4SRS24	Pays attention well	Teacher SRS	Four points ranging from 1 = Never to 4 = Very often
T5SRS11	Keeps belongings organized	Teacher SRS	Four points ranging from 1 = Never to 4 = Very often
T5SRS14	Shows eagerness to learn new things	Teacher SRS	Four points ranging from 1 = Never to 4 = Very often
T5SRS15	Works independently	Teacher SRS	Four points ranging from 1 = Never to 4 = Very often
T5SRS21	Easily adapts to changes in routine	Teacher SRS	Four points ranging from 1 = Never to 4 = Very often
T5SRS23	Persists in completing tasks	Teacher SRS	Four points ranging from 1 = Never to 4 = Very often
T5SRS24	Pays attention well	Teacher SRS	Four points ranging from 1 = Never to 4 = Very often
T5SRS26	Follows classroom rules	Teacher SRS	Four points ranging from 1 = Never to 4 = Very often

ECLSK Code	ECLS-K Variable	Data Source	Scale
<u>Social Emotional</u>			
<u>Externalizing Behaviors</u>			
C5SDQ5	I often argue with other kids	3 rd Grade SDQ	Four points ranging from 1 = Not at all true to 4 = Very true
C5SDQ9	It's hard for me to pay attention	3 rd Grade SDQ	Four points ranging from 1 = Not at all true to 4 = Very true
C5SDQ17	I get distracted easily	3 rd Grade SDQ	Four points ranging from 1 = Not at all true to 4 = Very true
C5SDQ23	It's hard for me to finish my school work	3 rd Grade SDQ	Four points ranging from 1 = Not at all true to 4 = Very true
C5SDQ34	I get in trouble for talking and disturbing others	3 rd Grade SDQ	Four points ranging from 1 = Not at all true to 4 = Very true
C5SDQ37	I get in trouble for fighting with other kids	3 rd Grade SDQ	Four points ranging from 1 = Not at all true to 4 = Very true
<u>Internalizing Behaviors</u>			
C5SDQ3	I feel angry when I have trouble learning	3 rd Grade SDQ	Four points ranging from 1 = Not at all true to 4 = Very true
C5SDQ7	I worry about taking tests	3 rd Grade SDQ	Four points ranging from 1 = Not at all true to 4 = Very true
C5SDQ14	I often feel lonely	3 rd Grade SDQ	Four points ranging from 1 = Not at all true to 4 = Very true
C5SDQ20	I feel sad a lot of the time	3 rd Grade SDQ	Four points ranging from 1 = Not at all true to 4 = Very true
C5SDQ25	I worry about doing well in school	3 rd Grade SDQ	Four points ranging from 1 = Not at all true to 4 = Very true
C5SDQ29	I worry about finishing my work	3 rd Grade SDQ	Four points ranging from 1 = Not at all true to 4 = Very true
C5SDQ32	I worry about having someone to play with at school	3 rd Grade SDQ	Four points ranging from 1 = Not at all true to 4 = Very true

C5SDQ40	I feel ashamed when I make mistakes at school	3 rd Grade SDQ	Four points ranging from 1 = Not at all true to 4 = Very true
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Home Affective Environment

P5WARMCR	{child} and I often have warm times together	3 rd Grade Parent	Four points ranging from 1 = Completely True to 4 = Not at all True
P5CHLIKE	Most of the time I feel that {child} likes me and wants to be near me	3 rd Grade Parent	Four points ranging from 1 = Completely True to 4 = Not at all True
P5SHOWLV	Even when I am in a bad mood I show {child} a lot of love	3 rd Grade Parent	Four points ranging from 1 = Completely True to 4 = Not at all True
P5EXPRES	I express affection by hugging, kissing and praising{child}	3 rd Grade Parent	Four points ranging from 1 =Completely True to 4 = Not at all True
P5CHDOES	{Child} does things that really bother me.	3 rd Grade Parent	Four points ranging from 1 =Completely True to 4 = Not at all True
P5FEELAN	I often feel angry with {child}	3 rd Grade Parent	Four points ranging from 1 =Completely True to 4 = Not at all True
P5CHHARD	{Child} seems harder to care for than most	3 rd Grade Parent	Four points ranging from 1 =Completely True to 4 = Not at all True
