Beyond Supportive Parenting:
The Mediating and Moderating Role of Preschoolers' Self-Regulatory Competencies in the
Relation Between Supportive Parenting and Academic Readiness Outcomes Among Families
Participating in Head Start

by

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Dedication

This dissertation is dedicated to Mom, Daddy, and Natalie for embodying the true definition of support, to Aunt Beverley who cheered me on at every turn, my grandparents who believed I would get this far even though they didn't live to see it, to my friends who supported me with prayers and laughter, and to the parents who raise academically prepared, gifted and talented, children everyday without any acknowledgement, and to the children who have yet to discover how powerful they really are.

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List of Acronyms

PIM- Parental Investments Model

FSM--Family Stress Model

RQ- Research Question

Abstract

Preschool is a critical context in which children gain and exercise the skills necessary to be ready to enter school (Gottfried & Kim, 2015). Not all children, however, are able to access such formalized preschool opportunities. Specifically, children living in poverty are less likely to attend formal preschool and may also face other inequalities and structural barriers that may challenge their ability to become ready for school (Ansari & Winsler, 2012). Parenting, however, provides another way in which children may become academically ready to enter school. Theories of parenting, poverty, and development highlight the challenges associated with parenting in the context of poverty, and the subsequent consequences for children's school related outcomes. The role of supportive parenting, however, as it relates to the development of self-regulation and academic outcomes was largely unexamined. The current study built upon traditional frameworks to explore the mediating and moderating role of children's regulatory competencies in the relation between supportive parenting and children's academic readiness outcomes in the context of poverty. There were two aims of the study. The first aim was to explore the mediating role of attention and emotion regulation in the relation between supportive parenting and math and literacy outcomes. The second aim was to explore the role of children's self-regulatory competencies as moderators in the relation between supportive parenting and math and literacy outcomes. Results revealed no support for mediation. Results of moderation analyses revealed that children's regulatory competencies moderated the relation between supportive parenting and literacy outcomes. Results were discussed, as well as limitations of the study, implications, and future directions.

Chapter 1:
Introduction

Statement of the Problem

There is little debate among scholars, educators, and policymakers about the importance of a child's first five years of life. It is in these formative years that children begin to develop the cognitive, social emotional, and regulatory competencies that serve as a foundation for later learning, achievement, and adjustment through adulthood (Shonkoff & Phillips, 2000). Preschool is an important context in which children have opportunities to develop these competencies, making them ready to engage in school by preparing them to learn *how* to learn. Children who have prekindergarten education, particularly those who attend preschool the year before kindergarten, generally tend to be more academically prepared to start school (Currie, 2001; Gottfried & Kim, 2015; Loeb et al., 2007).

The value of educating children early for later school achievement is accepted throughout the United States (Brown, 2010; Farrar, Goldfield, & Moore, 2007; Kiernan et al., 2008), but scholars disagree over how to define school readiness (Linder, Ramey, & Zambak, 2013). Also, there are many different definitions of school readiness because readiness is relative and children develop at different rates in different areas (Hair, Halle, Terry-Humen, Lavell, & Calikins, 2006). Most of the disagreement is between the idea of schools being ready to support children versus the idea of children being ready to enter school. It is unclear which of these dueling perspectives is the developmentally sound approach to school readiness. Some definitions align school readiness with children's cognitive abilities (Noble, Tottenham, & Casey, 2005), whereas

others focus on school readiness as it pertains to children's abilities to function in a classroom environment (Carlton & Winsler, 1999). Still others conceptualize school readiness in terms of children's socioemotional competencies (Ray & Smith, 2010). Despite these debates, there is now consensus in the field that school readiness is not only the acquisition and mastery of academic skills, but the competencies that support children's social and academic functioning in a formal school environment (Blair & Raver, 2015; Hair et al., 2006).

This school readiness, and early academic readiness in particular, is thought to shape children's life chances. Recognizing that these early experiences can play a critical role in setting a child's educational (and life) trajectory, the National Education Goals outline that *all children will start school ready to learn* (National Education Goals Panel [NEGP], 1998). Moreover, legislation, such as the No Child Left Behind Act (NCLB), places great emphasis on academic performance and on school accountability to ensure that all children are proficient in specific academic areas by third grade (Kagan & Kauerz, 2007). The *Good Start, Grow Smart* Initiative requires states to determine the pre-reading, language, and mathematics knowledge and skills for preschool-aged children that align with the K-12 performance standards reinforced by NCLB (Brown, 2010; Kagan & Kauerz, 2007). As a result of this national discussion, there is now a renewed focus on the importance of early childhood education and a push for early childhood educators to attend to the academic disparities between low-income children and their higher income counterparts that manifest prior to kindergarten (Linder et al., 2013).

With this increased attention to the importance of early academic skills, educators and researchers seek to understand ways to support children's early academic development. Within the last 10 years, there have been critical shifts in the ways that educators and researchers conceptualize school readiness and think about the core skills necessary for school entry

(Mashburn & Pianta, 2006). Among these, self-regulatory competencies are recognized as a key set of skills necessary for children's academic school readiness and achievement (Blair & Raver, 2015). Formal preschools then play an important role in the context of school readiness, as they help provide children with opportunities to develop the self-regulatory skills necessary to begin kindergarten prepared.

Although across the country more children are now participating in early childhood educational programs, the experiences of low-income versus higher income children are qualitatively different, as are the types of educational opportunities they are able to access. Participation in formal preschools helps children gain and exercise the critical skills that would allow them to enter school prepared, but this is especially beneficial for the academic readiness of very low-income, minority children. Not all children, however, are exposed to such opportunities (Gaylor, Spiker, Fleming, & Korfmacher, 2012; Gormley, Gayer, Phillips, & Dawson, 2005; Loeb et al., 2007). Children living in poverty specifically are less likely to have access to formal preschools that mirror the more formal experiences they will encounter when they enter school (Brown, 2010; Stipek, 2006), and the early childhood programming aimed at supporting their development in critical academic areas (Fantuzzo, Perry, & McDermott, 2004; Shonkoff & Phillips, 2000).

In addition to these challenges, some low-income families, particularly many low-income Black families, cannot afford to enroll their children in formal preschools and must rely on family care, informal day care, or Head Start programs (Ansari & Winsler, 2012; Peisner-Feinberg & Yazejian, 2010). Studies show that although participating in informal childcare settings (e.g., family childcare) is associated with lower levels of school readiness (Ansari & Winsler, 2012; Gottfried & Kim, 2015; NICHD, 2006), programs like Head Start align with

national educational standards and may help low-income children become school ready (McLoyd, Aikens, & Burton, 2006). Research shows that low-income children are more or less ready for school depending on the type and quality of their early childhood education (Ansari & Winsler, 2012; Gormley et al., 2005; Winsler et al., 2008), specifically in the areas of math and literacy (Ma, Nelson, Shen, & Krenn, 2015). Consequently, low-income children are more likely to be behind in critical academic areas of school readiness (Ansari & Winsler, 2012; Dearing, McCartney, & Taylor, 2006; Gershoff, Aber, & Raver, 2003; Welsh, Nix, Blair, Bierman, & Nelson, 2010).

Moreover, research suggests that children living in poverty, particularly those living in densely populated urban spaces, are likely to face a combination of inequalities that could further compromise academic readiness and achievement (Ansari & Winsler, 2012; Fantuzzo et al., 2004; Ha, Magnuson, & Ybarra, 2012; Huston & Bentley, 2010; Karoly, Kilburn, & Cannon, 2005). Research shows that some children from low-SES backgrounds experience a disproportionate amount of stress in their everyday lives (e.g., witnessing violence, experiencing trauma, food scarcity) in addition to structural barriers to adequate care and educational opportunities. Studies in developmental psychology and cognitive neuroscience have shown that such inequities can pose many challenges to children's healthy psychological, physical, emotional, and academic development (Farah et al., 2008; Fernald, Marchman, & Weisleder, 2013; Zhang & Meaney, 2010), thus adding to the challenge of becoming school ready. These challenges prompt the question of how children living in poverty can become more academically prepared for school.

One solution may be in parenting. Parenting and caregiving are recognized as having a particularly important role in children's early learning and the development of their foundational

competencies (Fantuzzo, McWayne, Perry, & Childs, 2004). Parenting, in particular, is thought

to influence multiple spheres of children's development and to help shape the competencies

necessary for children to engage in a classroom (Blair & Raver, 2015).

Theories of Parenting and Children's School Related Outcomes in the Context of Poverty

Developmental theories attempt to address the role of parenting by proposing pathways to

children's developmental outcomes in the context of poverty. The Parental Investment Model

(PIM) and the Family Stress Model (FSM) present pathways by which poverty may pose

challenges to parenting, and the subsequent consequences for children's school-related

outcomes.

The PIM model seeks to explain variation in academic outcomes for children in poverty

compared to other children through the mechanism of parents' investments. Specifically, the

PIM proposes that poverty limits parents' access to resources necessary to provide children with

cognitive stimulation. Such resources range from experiences and activities, to housing,

childcare, and stimulating play materials (Becker & Thomes, 1986). These resources also include

quality home environments and goods and services that might provide the child with stimulating

learning opportunities. Becker and colleagues proposed that children's cognitive and academic

outcomes suffer without such material "investments." The model implies, then, that children in

poverty would be less likely to show positive academic school readiness outcomes because of

parents' financial constraints and their associated inability to support their children with

instrumental learning resources.

Similarly, the Family Stress Model (FSM) proposes relationships between poverty and

children's outcomes, specifically children's social-emotional development. The FSM posits that

having a low family income places stress on parents that challenges their ability to engage in more supportive practices, thus thwarting children's emotional development (Conger & Elder, 1994; Yeung, Linver, & Brooks-Gunn, 2002). According to this model, families' economic stress challenges their psychological well-being and results in more punitive and less warm and supportive parenting. Although the FSM has often been applied to understand adolescents' outcomes, work by Yeung et al. (2002) empirically tested this model and found support for the idea that family income was related to maternal stress and subsequent behavior problems in younger children as well. Whereas both of these theories suggest that poverty (i.e., having low income) challenges parents' ability to support their children in developing the skills necessary for school readiness and success, they emphasize different outcomes and mechanisms leading to those outcomes. Whereas the PIM proposes that children's academic outcomes are impaired by parents' inability to support and make financial investments on the child's behalf, the FSM proposes that poverty diminishes supportive parenting and subsequent social outcomes.

Yeung and colleagues (2002) suggest that key elements highlighted in each of these theoretical models might work in concert and should be considered together. A parent's lack of social resources (e.g., mother's depressive affect) may challenge both parenting and the ability to provide material supports (e.g., stimulating learning environments). Likewise, not being able to provide a stimulating learning environment with material goods may decrease parents' positive affect, increase parents' vulnerability to negative psychological outcomes (e.g., depression), and diminish parents' engagement in supportive parenting. In this regard, Yeung and colleagues (2002) propose that poverty may challenge a parent's ability to provide both social and material resources necessary for children's positive academic and social outcomes.

Figure 1. Yeung et al.'s (2002) Model of PIM and Family Stress Mediators
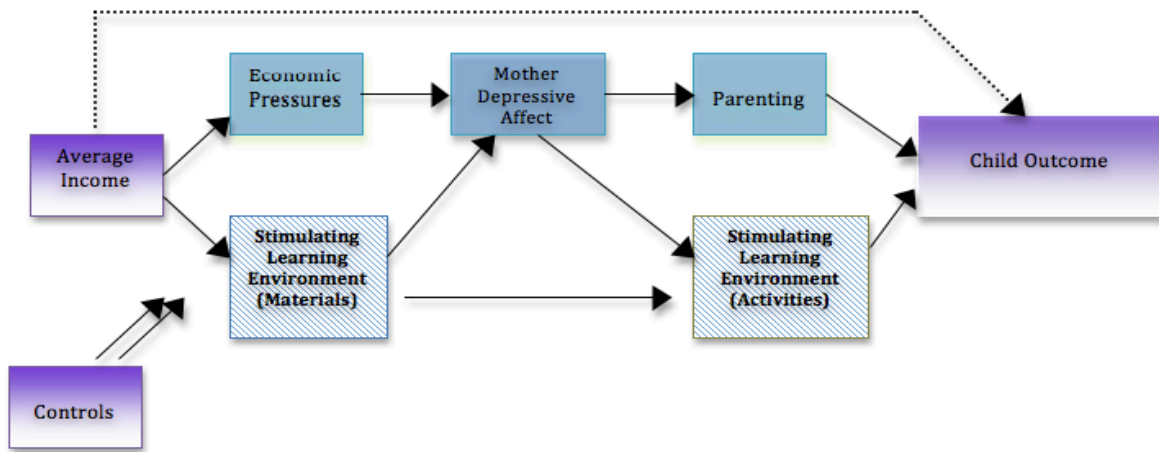
Figure 1   Combination of human capital mediators (striped shading) and family stress mediators (dark shading) models.

These theories, widely applied in developmental work, explain how facets of poverty negatively influence aspects of parenting to inform important social and academic developmental outcomes. However, they do not necessarily address developments central to current conceptualizations of school readiness—e.g., self-regulatory competencies.

A Neurobiological Framework of Parenting and School Readiness in the Context of Poverty

Advances in brain studies over the last 10 years have led to a new understanding of the importance of children's self-regulatory competencies in their learning. Self-regulatory competencies, the regulation of attention and emotion, are foundational, domain-general competencies that support the acquisition of domain-specific skills like reading and mathematics, and they undergird all facets of learning (Blair & Raver, 2015). Children's self-regulatory competencies are conceptualized as the ability to regulate attention and emotion (Blair & Raver, 2015). The regulation of attention refers to the ability to ignore irrelevant stimuli and focus, as well as to shift attention in response to the demands of the environment. The regulation of emotions refers to a child's ability to tolerate frustration and modulate negative emotions. As a

result of this new understanding of the important role of self-regulation in learning, school readiness is now conceptualized not only as the academic and social skills necessary to engage in a classroom (which characterized older conceptualizations), but also children's self-regulatory competencies that facilitate the learning process.

In light of this new conceptualization, Blair and Raver (2015) propose a neurobiological framework for understanding academic school readiness outcomes in the context of poverty. Similar to early theories of poverty (e.g., FSM and PIM), the neurobiological model highlights parenting as the key mechanism by which children can develop school outcomes. The neurobiological framework seeks to explain the mechanisms through which poverty can compromise children's regulatory competencies, thus helping to explain variation in school outcomes between children in poverty and other children. The model reflects the idea that poverty can debilitate parenting skills, and the authors propose a neurobiological, developmental path linking such diminished parenting capacity to children's regulation of attention and emotion and subsequent readiness outcomes.

As with the PIM, Blair and Raver's (2015) framework holds that the child's home environment provides early learning opportunities. When parents lack resources to provide stimulating activities and opportunities in those contexts, children are placed at a disadvantage for optimal development of regulatory competencies. The framework emphasizes, however, that while material investments in the home context can influence the development of important skills and competencies, the interaction with caregivers in that context is the primary mechanism by which self-regulatory competencies are shaped.

Specifically, the model draws on empirical research showing that higher levels of material hardship are associated with less sensitive and less supportive parenting. This lack of

supportive parenting is associated with higher levels of stress hormones such as cortisol in children, which, in turn, challenge activity in the prefrontal cortex—which plays a key role in self-regulatory competencies (Liston, McEwen, & Casey, 2009). Because these self-regulatory competencies are critical to learning and academic readiness, children who are lower in these areas may experiences deficits in academic outcomes. As a result, this model suggests that children living in poverty may not receive the parenting necessary for the development of the regulatory skills that enable them to be as academically ready for school as their more affluent counterparts.

Taken together, these frameworks seek to explain a set of structural and social mechanisms that help explain negative developmental and academic outcomes among children in poverty compared to other children. These models suggest that some low-income parents may experience difficulties while parenting in ways that undermine children's development in critical domains associated with school readiness because of the structural and social challenges associated with living in poverty. The PIM suggests that parents may be unable to afford to invest in stimulating activities that support children's academic development. The FSM suggests that stress associated with being low-income results in less supportive and sensitive parenting practices, which comprises children's social development. The neurobiological framework combines elements of the PIM and FSM to suggest that family processes, particularly parenting, are the key mechanism influencing the regulatory competencies underlying academic outcomes. The neurobiological framework builds on these traditional theories by incorporating the new conceptualizations of school readiness, and advances our understanding of how family processes influence developmental systems and subsequent academic outcomes.

These models, including the neurobiological framework, do not elaborate on the mechanisms by which children in poverty may show positive academic outcomes despite the risks and challenges associated with poverty. These extant models, though explaining some of challenges of parenting, do not account for the ways that many parents in poverty engage in positive parenting practices that promote the development of regulatory competencies in the midst of the structural and social risks of poverty. In presenting the neurobiological framework, however, Blair and Raver (2015) explain that the development of regulatory systems is particularly sensitive to interactions with caregivers during early childhood. Though this framework shows how the lack of supportive parenting could contribute to children's self-regulation to explain poor academic outcomes, because children's development is sensitive to caregiver interactions, it is also possible that supportive parenting may support children's regulatory skills in a way that results in positive academic outcomes in the context of poverty.

Traditional Conceptualizations of Supportive Parenting

Supportive parenting is recognized as important for school readiness, and academic readiness in particular, for all children regardless of race, class, and gender. Generally, supportive parenting refers to parents' provision of nurturance and warmth, as well as more inductive and less punitive disciplinary strategies that support children's development and result in positive outcomes and overall adjustment (e.g., academic achievement) (Baumrind, 1973; Pettit, Bates, & Dodge, 1997). Supportive parenting, in relation to school readiness, has traditionally been understood through the work of Baumrind (1973), who emphasizes the importance of responsiveness in children's development, cognitive competencies, and academic achievement. Baumrind's seminal work (1967, 1971) provided evidence that certain parenting techniques—specifically inductive discipline, less punitive disciplinary practices, warmth and

acceptance, and consistency—yielded positive developmental outcomes. Baumrind identified three key parenting styles—permissive, authoritative, and authoritarian. Permissive styles of parenting are characterized by little punishment and high levels of tolerance, as well as acceptance of children's impulsivity. Baumrind (1973) characterizes this style as "overly nurturing," however, it allows for children to regulate their own behavior. Parents who use an authoritarian style control their child using rigid, absolute standards. Authoritarian parents are highly demanding while showing low levels of responsiveness to their child. Authoritarian parenting does not encourage dialog and is based heavily on the parent's control (Dornbusch, Ritter, Leiderman, Roberts, & Fraleigh, 1987). Authoritative parents, however, negotiate and encourage communication with the child. They are considered supportive, as they are highly responsive and also highly demanding.

Both authoritarian and permissive parenting styles have been found to relate negatively to children's academic competence (Baumrind, 1973, 1989, 1991). Similarly, Dornbusch and colleagues (1987) found that children whose parents used permissive and authoritarian parenting techniques had lower grades than children whose parents used authoritative parenting. Dornbusch et al. (1987) also showed that these patterns held across racial groups.

As a result of such studies, the collection of parenting practices known as authoritative parenting became recognized as the gold standard of supportive parenting. Studies have linked receiving authoritative parenting to children's higher levels of achievement, social-emotional development, competence, mental health, and self-esteem, relative to children who did not receive such parenting (Larzelere, Morris, & Harrist, 2013; Maccoby & Martin, 1983; Watabe & Hibbard, 2014). Scholars identify parents' "demandingness and responsiveness" as the key mechanisms underlying children's positive developmental outcomes (Larzelere et al., 2013).

Demandingness typically refers to the ways that parents guide children's behavior, whereas responsiveness pertains to the warmth and nurturance and emotional availability of the parent (Larzelere et al., 2013). Specifically, children are thought to develop a sense of self-efficacy, trust, and the competence to develop healthy relationships as a function of the supportive nature of authoritative parenting (Pittman & Chase-Lansdale, 2001). Supportive parenting has also been linked to the development of important regulatory competencies (Eisenberg, Cumberland, & Spinrad, 1998; Raikes & Thompson, 2006).

Supportive Parenting in the Context of Poverty

In light of Baumrind's (1967, 1971) work on parenting, many scholars have begun to examine parenting among low-income families. They argue that these families tend to use more authoritarian parenting strategies characterized by practices that are less warm, more punitive, and overall less supportive for the child (Lee, 2013; Spencer & Dornbush, 1990). In considering Baumrind's (1967, 1971) theories, some scholars have pressed the field to consider the conceptual and empirical assumptions made by this framework in its application to low-income families and families of color (Brooks-Gunn, Duncan, & Aber, 1997; Julian, McKenry, & McKelvey, 1994; McWayne, Owsianik, Green, & Fantuzzo, 2008; Pittman & Chase-Lansdale, 2001).

Most studies examining the relationships between Baumrind's typology of parenting techniques and outcomes tend to focus on White, middle-class samples (Darling & Steinberg, 1993; Stewart & Bond, 2002). Studies have also shown that the relationship between authoritativeness and academic performance is much stronger for White and Latino children than it is for Asian and Black adolescents. Pittman and Chase-Lansdale (2001) also point out that contextual factors play a significant role in how such parenting styles promote positive

outcomes. Black families are often situated in a unique sociopolitical, economic, and cultural context that requires Black parents to make additional considerations when deciding how to parent and engage with their children. Many Black families, over time, have experienced increases in unemployment, incarceration, crowded urban environments, economic instability, social instability, divorce, crime, delinquency, spousal abuse, child abuse, separation, alcoholism, out-of-wedlock births, drug abuse, AIDS, and poor health (Hetey & Eberhardt, 2014; Hill, 1999). Moreover, there are added challenges for Black families living in poverty. Low-income Black families are more likely to experience multiple obstacles and challenges including pervasive poverty, inadequate schools, few safe recreational institutions, limited community institutions, and neighborhoods with high levels of gang and drug activity (Pittman & Chase-Lansdale, 2001). The context in which children live may, in and of itself, alter the effect of parenting practices (Cuellar, Jones, & Sterrett, 2015; Elliot, Powell, & Brenton, 2015).

In addition to these challenges, racism remains a persistent societal force that Black families face in the U.S. and underlies many of the structural obstacles that low-income Black families in particular experience (Settersten & Cancel-Tirado, 2010). Research shows that regardless of socioeconomic status, many Black parents view firmer parenting techniques as critical to their children's healthy development and protection in a racist and discriminatory society (Rosenblatt, 2016). It may be imperative for Black parents to be firmer to ensure that children are making the right decisions, given the severe consequences of making the wrong ones in a society that is weighed against them.

Moreover, understanding supportive parenting also means considering the cultural and community norms related to parenting. Such norms may color the ways that children interpret their parents' actions (Hill & Tyson, 2008). Specifically, depending on the children's ethnic

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groups, they may not view parents' firmness as "harshness." Similarly, restrictive practices may be not be interpreted negatively as "controlling" but as protective (Deater-Deckard & Dodge, 1997). Age may also influence how children interpret their parent's actions (Cuellar et al., 2015). Older children and adolescents who have developed a greater sense of autonomy may feel that parents who are firm in their guidance and discipline are being "too controlling." Younger children, however, may not perceive firm directives as controlling given that they depend on adults for nearly all of their activities and they may learn as a result of being told what not to do (DuBois, 2014). Early work by Taylor and Roberts (1995), for example, explored how parent's use of control may operate differently for children of different racial groups. This work showed that low-income Black children who received firm parental control—that is, parenting characterized by monitoring and supervision—exhibited lower levels of problem behaviors. Similarly, research shows that greater supervision and control is associated with increased well-being among low-income children but decreased well-being in their higher income counterparts (Hanson, McLanahan, & Thomson, 1995). Firm parental control associated with authoritarian parenting may serve a protective role among many low-income Black children (DuBois, 2014). While this is merely a snapshot of the dynamic context in which many low-income Black families must navigate, it is clear that many factors may influence how parents support their children (McLoyd, Hill, & Dodge, 2005). In this regard, it is important to note such contextual factors at play when considering the ways that low- income parents engage in supportive parenting, and what supportive parenting means (Ceballo & Hurd, 2008; Larzelere et al., 2013).

Though many developmental theories tend to focus on the negative effects of parenting and poverty on young children's development and school readiness (e.g., PIM; FSM), other work on Black and low-income families challenges traditional, middle-class normed,

conceptualizations of supportive parenting by considering the contextual implications and complexities around the construct of "supportive parenting" (McLoyd et al., 2005). There is a tradition of research demonstrating the ways Black parents effectively protect and engage with their children, and support children's development and academic outcomes. In contrast to seminal works by E. Franklin Frazier (1939), Daniel P. Moynihan (1965), and Lee Rainwater (1972a, 1972b), who presented dysfunctional and pathological portrayals of Black families, work by Billingsley (1988) and other scholars (see for example Hill, 1999; McAdoo, 1981; Nobles, 1974; Young, 1970) showed that many Black families can have positive outcomes across domains despite the many financial, racial and structural challenges they face. Similarly, more recent work has explored the factors that promote resilience and positive adjustment among young Black children (Bulotsky-Shearer et al., 2012; Hetherington & Blechman, 2014) and, more specifically, the ways Black parents support their children's development and academic readiness (Bulotsky-Shearer et al., 2012; Hayakawa, Englund, Warner-Richter, & Reynolds, 2013; Sheridan, Knoche, Edwards, Boviard, & Kupzyk, 2010).

In sum, many low-income Black parents not only must consider ways to support their children's development and readiness, but must simultaneously identify ways to counteract the elements that challenge children's potential for academic success, as well as those that threaten their safety or even existence. The mislabeling of low-income Black parenting techniques as harsh, unsupportive, and even detrimental to children's development and academic readiness has resulted in a limited understanding of the ways in which parents in challenging contexts support their children's development of important competencies (Harwood, Leyendecker, Carlson, Asencio, & Miller, 2002; Peters, 1985). It is important, then, to recruit a broader conceptualization of "supportive" parenting that takes into account contextual challenges and

cultural strengths when considering how parenting practices may contribute to children's development and early academic success.

In sum, research has established that there is a developmental path that links supportive parenting, the development of key regulatory competencies, and academic readiness skills (Blair & Raver, 2015; Welsh et al., 2010). Supportive parenting is the key mechanism by which children develop regulatory competencies that support school readiness. Models of poverty highlight the social and structural challenges imposed by poverty on low-income parents' capacity to engage in these supportive practices and the consequences for children's developmental trajectory. Less empirical attention has been given to understanding the positive and promotive processes that parents engage to support their children in attaining the developmental competencies necessary for success despite the presence of social and structural risks of poverty.

The Current Study

In the current study, I draw on literature and frameworks from developmental psychology, strength-based models of positive parenting, and neurobiological frameworks of self-regulation and poverty to explore these promotive parenting processes as they relate to children's self-regulatory competencies and academic readiness outcomes. In line with new conceptualizations of school readiness, I also explore the way that children's competencies moderate the relation between parenting and children's academic readiness outcomes. In considering aspects of supportive parenting believed to be compromised by poverty, I drew from McWayne, Mattis, Green Wright, Limlingan, and Harris' (2016) Black Parenting Strengths in Context Scale (BPSC) as a measure of positive parenting practices grounded in the experiences

of low-income Black families. Specifically, I examined the relations between the Fostering a Connected and Competent Self subscale and the Behavioral Guidance and Responsiveness subscale of the BPSC (McWayne et al., 2016) and children's regulatory competencies and academic outcomes among low-income families. The Fostering a Connected and Competent Self subscale includes items primarily focused on reflecting parent and caregiver practices that foster moral, social, and emotional nurturance (McWayne et al., 2016). This subscale captures the extent to which parents and caregivers teach their children, cultivate a nurturing environment, and provide children with care, guidance and safety (McWayne et al., 2016). It also reflects the ways that parents may encourage children's academic competencies (McWayne et al., 2016). Behavioral Guidance and Responsiveness reflects the ways in which parents and caregivers respond to children when they misbehave, as well as the way parents and caregivers prevent children's misbehaviors (McWayne et al., 2016).

Research has operationalized supportive parenting in terms of authoritative parenting (e.g., emotional warmth and particular manifestations of control). Consequently, most studies of supportive parenting have not reflected the lived experiences or cultural context of low-income Black families (McWayne et al., 2016). One strength of this work is the use of a socioculturally-grounded measure of positive parenting among low-income Black parents and caregivers of preschool-aged children (McWayne et al., 2016). McWayne et al., (2016) took a within-group, mixed methods approach to create a culturally relevant measure of positive parenting that reflected parents' own definitions of what it means to be a "good" or "effective" caregiver. McWayne and colleagues (2016) conducted semi-structured interviews with the parents of preschool-aged children participating in Head Start programming. Researchers and parents worked together to identify positive parenting practices, which were later used to create the

quantitative measure. The two subscales that I will use in the current study, Fostering a

Connected and Competent Self and Behavioral Guidance and Responsiveness, are conceptually

linked to established measures of emotional support and behavioral support. However, the

former measure reflects the finding that for low-income Black parents, the expression of warmth

and support coheres with a broader set of practices and values that reflect a focus on developing

deep connections with their children and working to ensure that their children develop values and

skills that will allow them to be caring, socially competent, excited, independent, and capable

beings (McWayne et al., 2016).

Another benefit of the current study is the use of a measure of children's self-regulatory

competencies derived from a strengths-based approach to children's early learning. Specifically,

I use two dimensions of the Preschool Learning Behaviors Scale (PLBS; McDermott, Leigh, &

Perry, 2002), which endorses the idea that children have unique approaches to learning and

engaging in learning activities. These individual orientations towards learning are distinct

patterns of behavior that characterize a child's style of learning, also known as their learning

behaviors (Fantuzzo et al., 2004).

The Attention Persistence and Attitude Towards Learning subscales of the PLBS reflect

children's self-regulatory competencies, specifically their ability to regulate their attention and

emotions, respectively. The set of behaviors that fall under the Attention Persistence dimension

reflect the child's capacity to remain engaged and focused in learning activities, as well as their

tendencies towards distraction, impulsivity, and endurance. Behaviors such as "tries but

concentration soon fades" and "easily distracted or seeks distraction" characterize this category

of preschoolers' learning behaviors (McDermott et al., 2002). Similarly, the Attitude Toward

Learning dimension also reflects competencies around children's regulation, specifically, the

regulation of their emotions. Behaviors of this dimension reflect the child's responses to frustration and difficulty, and ability to modulate negative emotions. Such items include assessments of the extent to which children are "aggressive or hostile when frustrated" and "unwilling to be helped in difficulty" (McDermott et al., 2002). The PLBS (McDermott et al., 2002) items give insight into the nuanced ways that children manage more challenging aspects of the learning processes.

This notion that learning behaviors function as a measure of individual, child level, self-regulatory competencies is echoed in cognitive and developmental literature as well (Welsh et al., 2010). Several studies, for example, have dimensions of the PLBS as a measure of children's social skills (Denham et al., 2014) as well as various aspects of children's cognitive functioning (Gaylor et al., 2012). As a result, the PLBS has been found to predict important outcomes such as social adjustment, academic achievement, and cognitive ability (Ceci, 1991; Brown & Campione, 1982; McDermott, Rikoon, & Fantuzzo, 2016; McDermott, Rikoon, Waterman, & Fantuzzo, 2012). Moreover, the PLBS has been normed with low-income preschoolers living in urban areas. Studies show that learning behaviors are not just indicators of school readiness, but support academic achievement and explain a significant proportion in children's variability in achievement related outcomes (McDermott et al., 2002).

In addition to these strengths, unlike traditional lab based tasks used to assess self-regulatory skills, the PLBS is an observational measure of the self-regulatory skills that children enlist in real classroom settings (McDermott et al., 2012). This means that learning behaviors reflect a more accurate, in-context assessment of children's ability to regulate attention and emotion while engaged in the very learning activities that characterize their classroom learning. More importantly, because this measure is observational, external figures like teachers report on

children's self-regulatory strengths without making subjective assessment as to whether or not the behaviors they describe indeed represent strengths. In this regard, learning behaviors reflect a more objective, developmentally and contextually relevant measure of processes that support children's engagement and learning inside of the classroom.

In the current study, I take a novel approach to understanding developmental processes related to self-regulation by using dimensions of the PLBS (McDermott et al., 2002) as measures of self-regulatory skills, and dimensions of the Black Parenting Strengths in Context Scale (McWayne et al., 2015) as measures of supportive parenting. The first aim of the study is to examine the mediational relations between low-income parents' supportive parenting, children's self-regulatory competencies, and children's academic readiness outcomes. Two research questions are addressed in relation to this aim: RQ1: to what extent does preschoolers' ability to regulate their attention and emotion mediate the relation between Fostering Connectedness and math and literacy outcomes? RQ2: to what extent does preschoolers' ability to regulate their attention and emotion mediate the relation between Behavioral Guidance and math and literacy outcomes? See Figure 2 for a conceptual diagram of the relations outlined by research Aim 1.

Figure 2. Overview Diagram of Aim 1

Self-Regulatory Competencies

Supportive Parenting

- Fostering a Connected and Competent Self
- Behavioral Guidance and Responsiveness

- Attention
- Emotion Regulation

- Math
- Literacy

Academic Readiness Outcomes
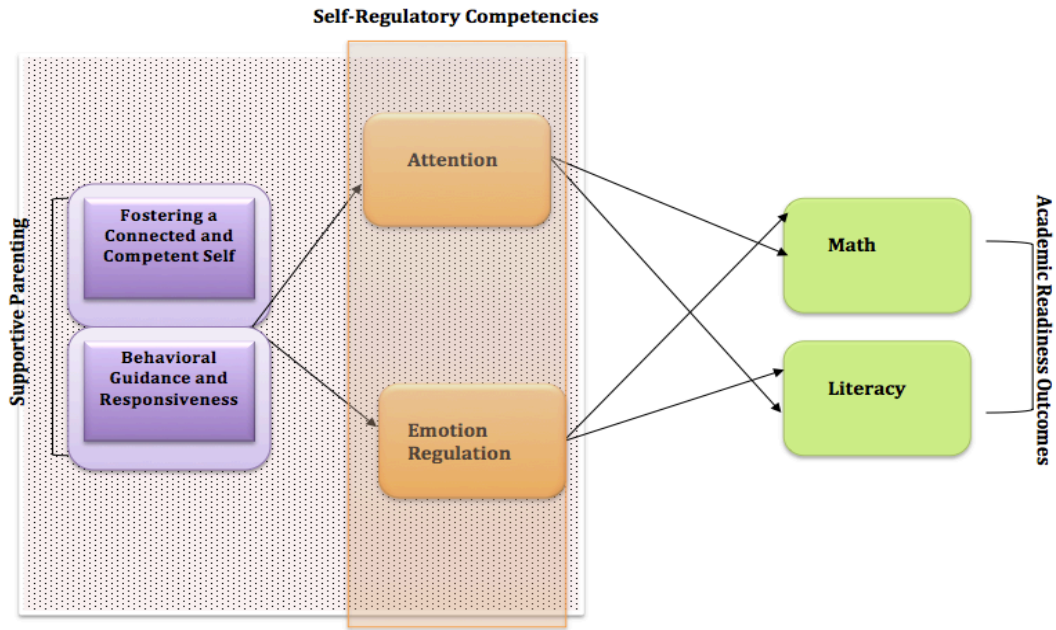
I expect to see relationships between both facets of supportive parenting and self-regulatory competencies given that supportive parenting practices are implicated in the development of regulatory systems underlying both attention and emotion regulation (Blair & Raver, 2015).

Fostering a Connected and Competent Self is an aspect of supportive parenting that reflects a range of behaviors geared toward teaching, guiding, caring for and nurturing the child (McWayne et al., 2016). This facet of supportive parenting reflects behaviors such as the ways that parents help their children to cultivate certain character strengths like empathy and altruism, as well as relational skills that foster a sense of connectedness with others (McWayne et al., 2016). In addition, Fostering a Connected and Competent Self also reflects practices that fall in line with traditional conceptualizations of emotional support and nurturance (McWayne et al., 2016).

I expect that Fostering a Connected and Competent Self will directly relate to academic outcomes because this aspect of positive parenting reflects emotionally supportive parenting

practices (e.g., nurturance, warmth, emotional support, encouragement, patience, attentiveness, and sensitivity), that have been linked to cognitive development (Farah et al., 2011) and academic outcomes (Baumrind, 1967; Downer, Campos, McWayne, & Gartner, 2008). In addition, Fostering a Connected and Competent Self reflects ways in which parents help children with work that they bring home from school, as well as the extent to which parents watch educational television shows or play educational games with the child. Such activities may hold benefits for children and help directly with academic skill building and also foster certain regulatory skills and competencies that help children to become academically prepared (Fantuzzo et al., 2013; Neville et al., 2013). Further, empirical research supports an expectation of a relation between supportive parenting and self-regulation among children. Research shows that parents who engage in emotionally supportive parenting enable children's ability to have adaptive emotional responses to stress (Repetti, Taylor, & Seeman, 2002). Expressions of warmth have also been linked to children's positive physiological responding to stress (Miller et al., 2011), and to positive social-emotional and behavioral outcomes among young children (Yeung, Linver, & Brooks-Gunn, 2002). Research has also established connections between emotionally supportive parenting and children's attentional skills (Belsky, Fearon, & Bell, 2007; Eisenberg et al., 2005; Hoffman, 2000). Children of parents who are less emotionally supportive may experience affective over-arousal, which taxes attentional systems, particularly selective attentional skills and attention-shifting abilities (Hoffman, 2000). Taken together, these studies suggest that Fostering a Connected and Competent Self may be particularly important for the development of children's emotion-regulation competencies.

Behavioral Guidance and Responsiveness is also potentially important for the development of both attention and emotion regulation competencies. This facet of supportive

parenting refers to the ways in which parents respond to children's misbehaviors, as well as the ways parents help children to plan and guide their own behavior (McWayne et al., 2016). Such behaviorally supportive parenting practices have been linked to children's socioemotional developmental outcomes and their academic performance over time (Elmore & Gaylord-Harden, 2013; Pettit, Dodge, & Bates, 1997). For example, when parents support children's behavior with patient instruction and guidance around misbehaviors, children are more likely to learn through scaffolding how to regulate their own attention and behavior (Eisenberg et al., 2005). Similarly, behavioral support characterized by less punitive interactions with children may help children to develop appropriate strategies to modulate their own negative emotions. These skills not only are critical to social school outcomes, but they also underlie the acquisition of both math and literacy skills (Welsh et al., 2010). In this regard, empirical findings support a direct link between supportive parenting and academic outcomes, as well as links between supportive parenting, self-regulation and subsequent academic outcomes. These multiple strands of research suggest the viability of exploring mediational relations. Understanding the relationships between supportive parenting and children's self-regulatory competencies may be key to ensuring that children in poverty develop a strong academic foundation at school entry.

It is important to examine how low-income parents' positive parenting practices may support children's academic readiness skills through children's regulatory competencies. However, examining the extent to which children's individual differences may moderate the relation between supportive parenting and academic outcomes is also important to deepening our understanding of children's strengths, and helping to explain variation in low-income families. In line with the neurobiological framework and current conceptualization of school readiness, empirical findings suggest that children's individual differences in regulatory competencies

support their academic school readiness outcomes (Blair & Raver, 2015; Mashburn & Pianta, 2006). These individual differences may modulate the effect of parenting on children's academic outcomes. In contrast with studies exploring regulatory competencies among low- income children that tend to focus on children's deficits, I will add to the literature by examining the ways children's self-regulatory competencies may function alongside supportive parenting practices to inform academic outcomes. In sum, the second aim of the study is to explore the ways in which children's self-regulatory competencies moderate the relation between supportive parenting and children's academic readiness outcomes. See Figure 3 for a conceptual description of the moderating relations that will be examined in this study.

Figure 3. Overview Diagram of Aim 2
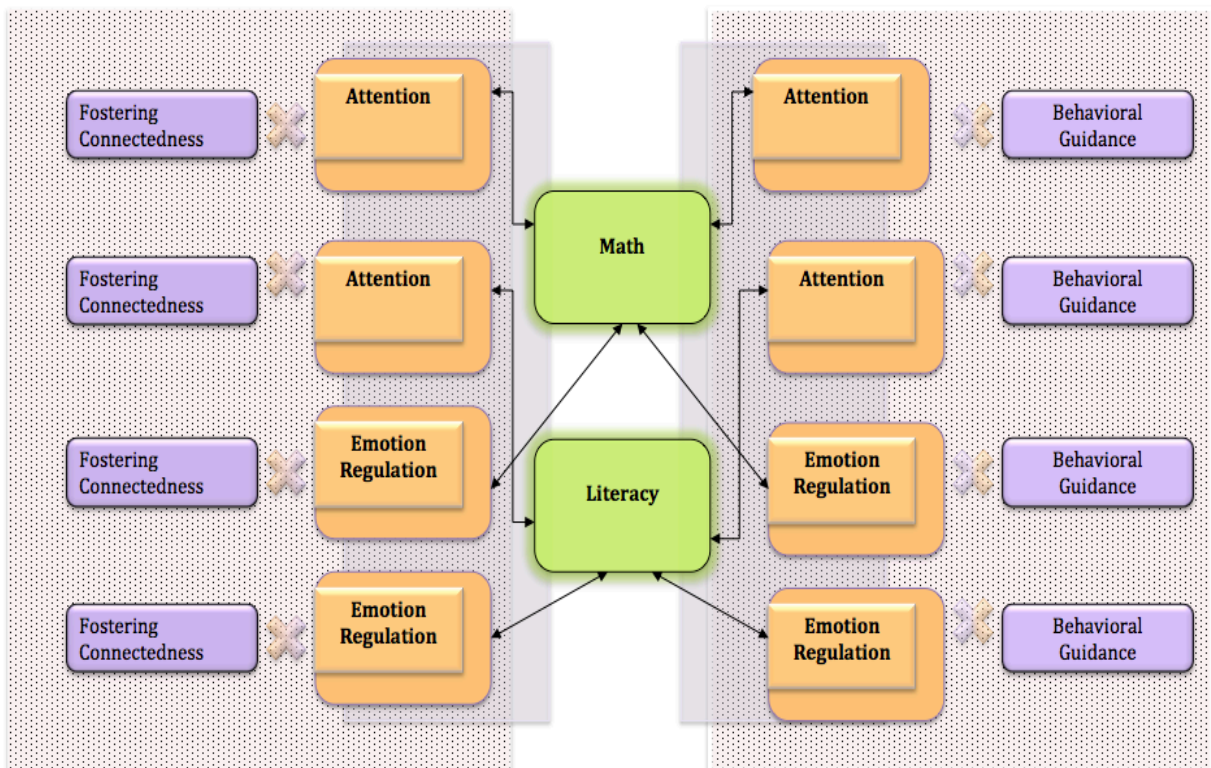
With respect to this second research aim, two research questions are addressed: RQ 3**:** To what extent do preschoolers' self-regulatory competencies of attention and emotion regulation

moderate the relation between Fostering Connectedness and math and literacy outcomes? RQ 4: To what extent do preschoolers' self-regulatory competencies of attention and emotion regulation moderate the relation between Behavioral Guidance and math and literacy outcomes?

Although current conceptualizations of school readiness emphasize the importance of how parenting and children's individual characteristics interact to inform children's academic school readiness (Blair, 2002), few empirical studies explore this interactional relation. While parenting may be an important factor in setting the stage for children's development of important skills and competencies, children's response to and interaction with various parenting practices also shape the ways that children develop and become academically ready. Children's individual competencies may enable or challenge the effectiveness of parenting practices on readiness outcomes (Yaman, Mesman, IJzendoorn, & Bakermans-Kranenburg, 2010). For example, the relation between supportive parenting and children's readiness outcomes may be stronger for children who are better able to managing their frustration than children with relatively weaker self-regulatory skills. When children with stronger emotion regulation competencies face challenges in the classroom, they may readily draw from the techniques that caregivers modeled in order to work through the difficulty. I will add to the literature by examining how supportive parenting practices interact with children's self-regulatory competencies (e.g., the regulation of attention and emotion) to support their academic readiness in the areas of math and literacy.

Conclusion

While child poverty rates are increasing (Wight & Chau, 2009) with little promise of decreasing, policies such as NCLB are placing greater emphasis on the necessity of prekindergarten academic skills and readiness (Kagan & Kauerz, 2007; Scott-Little, Kagan, & Frelow, 2005). Because children are expected to be proficient in academic areas by third grade,

early performance in these domains can have important implications for the educational trajectories of low-income children. Given this political and economic climate, the question of how to ensure that low-income children are academically school ready becomes pertinent and timely.

Many low-income Black children will not have the opportunity to participate in formal preschool, therefore it is critical to understand how the development of important competencies undergirding academic readiness may occur in proximal contexts with caregivers. Traditional frames of poverty and parenting, such as the FSM and the PIM, draw links between parenting and children's social emotional and academic outcomes. Work stemming from these models sheds light on how social and structural aspects of poverty may pose challenges to parenting and can have negative effects on the developing child (McLoyd, 1990; Noble et al., 2015). It is important to note, however, that many low-income children who do not attend formal preschool have access to Head Start. Although Head Start is a form of preschool education, programming has traditionally focused on building children's social skills. The children in the present study are all participants in Head Start. This study will add to the literature, as I will explore within-group variation of the ways low-income parents of Head Start children support children's self-regulatory competencies and subsequent academic readiness.

Blair and Raver provide a new way of understanding the path from parenting to academic outcomes (2015) that combines elements of the PIM and FSM to show the ways that parenting shapes regulatory skills underlying children's academic readiness. Blair and Raver (2015) explain how the absence of supportive parenting compromises school readiness outcomes in the context of poverty. This framework does not consider, however, how supportive parenting in stressful contexts may relate to children's regulatory competencies and potentially positive

academic outcomes. The first goal of this study is to fill this important gap by testing the extent to which children's self-regulatory competencies mediate the relation between supportive parenting practices and academic readiness outcomes in the context of poverty. This work will add to the literature by examining the ways that the presence of supportive parenting may shape regulatory skills and subsequent positive academic readiness outcomes, and thus further explain variation in academic readiness outcomes among preschoolers living in poverty. This work will also contribute to the literature by examining different facets of supportive parenting that reflect practices beyond more traditional conceptualizations of supportive parenting. Further, I will add to the literature by using a culturally and contextually relevant measure of supportive parenting (McWayne et al., 2016) that reflects not only more traditional aspects of support, but also those derived from low-income parents.

The second goal of this study is to highlight the importance of children's strengths by examining the extent to which parenting is compromised or bolstered by children's individual self-regulatory competencies. Developmental literature as well as the neurobiological framework of self-regulation highlight the importance of children's individual strengths and individual differences when considering the ways parenting contributes to school readiness (Blair & Raver, 2015; Fantuzzo et al., 2004). However, the ways such individual differences may moderate the relation between parenting and academic development is understudied. The current study will fill this gap by providing an examination of the self-regulatory competencies low-income Black children draw upon that help them enter the classroom ready to learn.

Finally, this study bridges a gap between positive psychology and strengths-based conceptualization of parenting and neurobiological research on children's early development. Taking this interdisciplinary approach provides a foundation for future study of both the

development of regulatory process in young children and supportive parenting processes among low-income families. The literature disproportionately highlights the challenges that low-income families face by virtue of living in poverty. Researchers often fail to measure and account for the ways parents and children exercise agency in challenging contexts. An understanding of both challenges and strengths is necessary to have a more holistic view of how various developmental processes unfold in the context of poverty. The underlying assumption driving this work is that many low-income parents and their children have the capacity to support children's academic school readiness. Understanding the mechanisms by which parents help children become school-ready by examining parents' strengths and children's competencies will allow us to understand how best to support the academic school readiness of vulnerable children and how they may thrive in challenging contexts. Further, understanding the areas of strength children and parents already possess will shed light on ways to create culturally and developmentally appropriate opportunities through intervention and practice for low-income families to exercise these strengths and reach their full potential.

Chapter 2:
Literature Review

In this chapter, I first introduce the theoretical framework that informs this study. I explain the tenets of a developmental ecological framework, the Parental Investment Model (PIM) and Family Stress Model (FSM), the Neurobiological Framework of School Readiness, and Resilience Frameworks. I then review relevant literatures around the key constructs in the study. I begin by giving a definition and review of literature pertaining to the concept of academic school readiness. In doing, so I elucidate on the relevance of academic readiness as opposed to other facets of school readiness. Next, I review literature related to supportive parenting in context. In conceptualizing supportive parenting, I present the broader literatures on supportive parenting as well as literature on culturally and contextually specific supportive parenting practices among Black and low-income Black parents. In this section, I highlight work by McWayne et al. (2016) and explain the literature related to the construct of Fostering a Connected and Competent Self and Behavioral Guidance and Responsiveness. In explaining these constructs, I present the empirical work that links such supportive parenting to children's school readiness outcomes, with special attention to academic school readiness. Having established the link between supportive parenting and academic outcomes, I then continue to build the review of the literature in line with my mediation model. I explain the literature relating supportive parenting to self-regulatory competencies, self-regulatory competencies to children's outcomes, and self-regulatory competencies as moderating the relation between supportive

parenting and academic outcomes. I conclude this chapter by revisiting the current study and research questions as well as my corresponding hypotheses.

Theoretical Framework

A Developmental Ecological Framework

I use a developmental-ecological resilience framework to ground this study. This framework draws on ecological theory to explain the key systems influencing the development of important milestones in the context of poverty (Bronfenbrenner, 1997). The home and school are considered particularly influential systems impacting early development (McWayne, Fantuzzo, Cohen, & Sekino, 2004). Within each of these proximal systems are individuals who engage with a child in ways that provide the child with the necessary support and instruction necessary to meet developmental milestones (Christensen, James, & Jenks, 2000). In the home context, parents engage in play activities, conversations, educational activities, modeling readings, and supporting homework with the child. These interactions between caregivers and parents in the home contribute to the child's development (Wentzel, 1999). Wentzel (1999) explains that through continuous interactions within the family context, caregivers help children to understand and learn to adhere to specific social and educational goals. This early proximal relationship provides children with structure and clear behavioral expectations to promote academic readiness and achievement.

Bronfenbrenner's ecological theory posits that the adults in a child's proximal environment (e.g., caregivers and parents) likely have the most significant impact on the child's development (Bronfenbrenner, 1979, 1986). Specifically, the interactions between the child and caregivers, or others in this proximal context, are thought to be the mechanism driving the

development of the child. The interactions that occur across these levels over time shape the child's development and adaption. These relationships or bidirectional processes in the proximal context set the foundation for and become the basis of other important interactions across contexts. Because young children's most influential environment is the home, the interactions (particularly the interactions with adults) in this proximal context are postulated to attenuate or enhance opportunities for the child's academic success (Bronfenbrenner, 1979, 1986). With regard to achievement in early childhood, ecological theory suggests that experiences that occur in the home environment can facilitate the emergence of foundational academic competencies (Downer & Mendez, 2005). In line with this ecological framework, the current research will explore the extent to which parents, as important agents in children's home context, support and interact with children's competencies to inform their academic school readiness. The theory suggests that parents may interact with children in ways that model key behaviors that become important in other contexts. In line with this reasoning, I will explore the ways that parenting contributes to children's regulatory competencies, and their subsequent academic preparedness. Ecological theory also highlights bi-directional relationships between a child and his or her caregivers and how these interactions contribute to the child's development. Specifically, children's individual characteristics are important to consider in the caregiver-child relationship in determining the ways parents contribute to developmental outcomes. The theory also proposes children's individual traits can modulate the impact of parenting on his or her development. In line with this framework, I will also explore children's individual characteristics as moderators in the relation between supportive parenting practices and children's academic outcomes. In sum, this framework highlights that important developments can occur in the home environment, and

that parents and children's interactions shape these developments and facilitate learning across contexts.

The Parental Investments Model

Developmental theories point to the ways in which ecology, specifically the contexts characterized by poverty, may influence the emergence of children's important readiness skills. The social causation perspective presents two models for understanding how poverty affects children's development and adjustment (McLoyd, 1998). The Parental Investment Model (PIM) and Family Stress Model (FSM) are two pathways by which these processes occur in families of different races and family structures. Whereas the FSM primarily explains the impact of poverty on children's social and emotional development, the PIM accounts for academic outcomes in children (McLoyd, 1998).

The PIM emerged from economic and sociological perspectives around purchasing power. It proposes that parents' financial investments in goods and services are essentially what links poverty and children's academic outcomes. Scholars assume that these goods and services can increase children's educational prospects as well as their economic mobility (Lareau, 2003). When parents are more financially secure, they are able to supply children with opportunities that can enhance their social mobility, including material goods like learning materials (e.g., educational toys and books) in the home. Studies find that when children have such opportunities and materials in the home, they perform better in school (Davis-Kean, 2005). Material goods also include parents' direct support of children's learning such as engaging with a child in a learning activity or reading to the child. Going to museums and libraries, extracurricular activities, and tutoring are also considered ways that parents are able to support their children's learning by way of goods and services. Research suggests that such affordances may contribute

to children's cognitive development by providing them with the cognitive stimulation necessary for their academic engagement (Yeung et al., 2002). In line with this perspective, empirical work has assessed correlations between the number of books and educational materials in the home and children's reading and literacy outcomes (Davis-Kean, 2005; Sanders, Zacur, Haecker, & Klass, 2004). Studies show that there are consequences for parents who do not engage with books in the home for children's academic outcomes. For example, low-income mothers with less education read less to children, and subsequently, children have lower vocabulary and language development and overall school attainment over time (Hoff, 2003; Huston & Bentley, 2010). While the PIM does not explicitly draw links to the development of regulatory skills supporting academic outcomes, it suggests that investments that parents make may contribute to children's cognitive development. Because self-regulatory competencies such as the ability to regulate emotion and attention hinge upon cognitive developmental processes (Blair & Raver, 2015; Ellsworth & Scherer, 2003), one might expect to see associations between parents' practices that engage children with learning materials and regulatory outcomes. Specifically, Fostering a Connected and Competent Self reflects the extent to which parents watch educational television shows and play educational games with children. As the PIM proposes, practices that involve engaging children around educational materials may contribute to children's academic readiness outcomes by providing the cognitive stimulation that undergirds the development of attention and emotion regulation.

The PIM presents a second pathway through which poverty affects children's outcomes, one that pertains to parents' attitudes, beliefs, values, and concerted efforts to support children's school success (Magnuson, Ruhm, & Waldfogel, 2007). Parents' attitudes have been found to predict academic outcomes and to mediate the relation between family income and academic

outcomes among low-income adolescents (Benner & Mistry, 2007; Hango, 2007; Schoon, Parsons, & Sacker, 2004). Children of low-income parents who hold high academic expectations reach higher levels of achievement (Wood, Kaplan, & McLoyd, 2007) as well as better school adjustment over time (Schoon et al., 2004).

The PIM also contends that the relationship between poverty and children's academic outcomes can be attributed in part to parenting practices (Lareau, 2003). Lareau (2003) posits that underlying these parenting practices are beliefs about how parents should participate in children's development. She proposes that middle-class parents, compared with lower-income parents, are more likely to engage in parenting practices that can foster the development of children's social, academic, and cognitive skills. These middle-class parenting practices known as "concerted cultivation," reflect a set of parenting practices characterized by discipline strategies that involve reasoning and negotiation as well as directives. In addition, this type of parenting style involves enrolling children in multiple leisure and extracurricular activities. Low-income parents are thought to espouse a different kind of parenting that does not rely on these strategies, but instead relies on what she labels "natural-course child-rearing practices"—these practices are less likely to cultivate the child's development (Lareau, 2003). These practices reflect the assumption that development happens naturally with little need of interference from parents (Lareau, 2003). While the PIM suggests that financial resources are necessary for children to become school ready, it also highlights that the ways parents engage with children can support their development.

Family Stress Model

Similarly, the FSM explains the ways that poverty influences parenting to inform children's social-emotional outcomes. The model proposes that the economic hardship

associated with living in poverty results in parents experiencing stress and strain that compromises their mental health and their ability to engage in supportive parenting practices (Conger & Elder, 1994; McLoyd, 1990). In addition to the stress of meeting basic financial responsibilities and needs, wanting to provide children with nonessential resources like birthday gifts has been associated with parent's comprised mental health and lower quality parenting practices as well (Mistry, Lowe, Benner, & Chien, 2008). Specifically, emotional support—that is, nurturing, responsive parenting practices, is compromised as a result of parents feeling the pressures of economic instability and insecurity. The model proposes that such pressures may lead to depression and other mental health issues, thus undermining existing strengths and ability to fully engage in supportive parenting.

Studies applying this model have found that parental stress stemming from economic hardship negatively influences not only the quality of parenting, but investments in the child as well. Further, these deficits in supportive parenting were found to relate to both children's social-emotional and cognitive skills (Raver, Gershoff, & Aber, 2007). Further, such hardships are thought to cause emotional distress that, in turn, is associated with not only less supportive parenting practices, but more punitive parenting practices (McLoyd, Jayaratne, Ceballo, & Borquez, 1994). Some studies, however, have found only weak associations between family income and parenting (Hanson, McLanahan, & Thomsen, 1995. Other work shows that supportive parenting characterized by warmth and noncoercive practices serves as a buffer in the face of economic strife (Mosley & Thomson, 1995). In this regard, the model proposes that poverty and experiencing economic hardship may compromise parenting. Nevertheless, corresponding empirical work suggests that despite these challenges, some parents may in fact still find ways to engage in supportive parenting practices (Mills-Koonce et al., 2015).

The Neurobiological Framework of School Readiness

Blair and Raver (2015) also provide a framework for understanding the relationship between parenting and children's school readiness outcomes in the context of poverty. At the core of this framework is the idea of self-regulation as critical for school readiness (Heaviside & Farris, 1993). Developmental science and psychobiological models of development present school readiness as the product of co-occurring biological and behavioral developmental processes that are influenced by the developmental context. They point to the importance of capitalizing on learning opportunities and children's competencies in early childhood across contexts (Cairns, Elder, & Costello, 1996; Gottlieb, 1997; Heckman, 2006; Ma et al., 2015; National Scientific Council on the Developing Child, 2006). In addition, the developmental systems approach taken up by many scholars highlights the importance of variation in individual child characteristics and how various developmental environments shape these cognitive competencies to influence school outcomes (Cairns & Cairns 2006). Specifically, research has shown that children's brain development and brain structure are influenced by children's experiences early in their lives (Ma et al., 2015). Certain activities, like reading, were found to be associated with important changes in children's brain structure and better performance on assessments of readiness (LaParo & Pianta, 2000). Such studies highlighted the malleability of children's brains and their sensitivity to stimuli and interactions with others. Advances in this area have highlighted the importance of context and the interactions in those contexts in preparing children for school entry. Social interactions within these social environments foster important neuronal connections, making home and prekindergarten contexts, as well as the reciprocal learning processes between child and caregiver, a focal point in efforts to ensure

children's school readiness (Hilferty, Redmond, & Katz, 2010; LaParo & Pianta, 2000; Ma et al., 2015; McCain & Mustard, 2002).

As a result of developments in brain research, a more comprehensive view of school readiness has emerged that presents school readiness as a multidimensional construct. School readiness depends not only on the contexts in which children learn (e.g., home and school milieu), but on interactions between children's individual, inherent characteristics and the learning environments that they occupy (Carlton & Winsler, 1999; Hair et al., 2006; Meisels, 1987). With advances in research about developmental systems, school readiness reflects multiple, integrated influences on development (Blair, 2002; Mashburn & Pianta, 2006). Blair and Raver (2015) explain that interrelated attentional and emotion regulatory skills can best be understood as self-regulatory processes that are part of school readiness and make other facets of school readiness (e.g., domain-specific academic skills) possible.

This transactional conceptualization of school readiness reflects an ecological theoretical framework. The framework generally emphasizes that parents and child-care experiences shape children's characteristics and promote the self-regulatory competencies that make children ready to learn. These important interactions occur across contexts such as the home and the school environments (Hilferty et al., 2010; Kagan & Rigby, 2003). There is an underlying assumption that all children have the capacity to learn with the support and guidance of parents and teachers in environments that provide cognitive and social stimulation to the child. These factors, working together, provide the child with the developmentally appropriate learning opportunities necessary to enter school ready to learn (Ma et al., 2015; Rodriguez & Tamis LeMonda, 2011). Scholars note, however, that the adverse conditions associated with various facets of poverty may challenge and compromise the neurocognitive systems supporting self-regulatory competencies

(Blair & Raver, 2015). Because these competencies are thought to undergird early learning, the existing body of research suggests that children in poverty are less likely to be school ready. In sum, children living in the context of poverty have more limited access to contexts that support their development, and have fewer opportunities for positive interactions that support the neurocognitive development of systems undergirding foundational self-regulatory competencies necessary for positive academic readiness outcomes.

The neurobiological framework proposes that self-regulatory competencies of attention and emotion regulation are the key competencies supporting all other learning. Key studies of neuroendocrine function in young children reveal that the quality of parenting is the key mechanism shaping children's self-regulatory systems (Blair, Knipe, & Gamson, 2008). While other factors such as the quality of care outside of the home and the amount of cognitive stimulation a child receives may influence the development of neurocognitive systems supporting regulation, parenting is highlighted as a key mechanism by which important self-regulatory competencies are shaped (Raver, Blair, & Willoughby, 2013).

Specifically, Blair and Raver (2015) assert that interactions between caregiver and child influence the development of self-regulatory competences of attention and emotion regulation. In explaining the implications for children in poverty, Blair and Raver point to studies that have found that higher levels of poverty are associated with lower levels of supportive parenting. These interactions alter levels of stress hormones, which are related to centers in the brain that affect the functioning of emotion and attention systems. Similarly, stress physiology has strong developmental influences on the prefrontal cortex, which supports self-regulatory process and other executive functioning (Liston et al., 2011). Because supportive parenting is thought to be compromised by poverty, the nature of the interactions between caregiver and child is presumed

to be negative and therefore detrimental to the development of children's regulatory skills. Consequently, when children do not have strong self-regulatory skills of attention and emotion regulation, they are more likely to have poor academic outcomes.

Like the PIM and the FSM, Blair and Raver's (2015) framework presents mechanisms by which parenting contributes to children's school outcomes in the context of poverty. Whereas the PIM and FSM speak to school outcomes more generally, the neurobiological framework builds on current conceptualizations of school readiness that emphasize the importance of self-regulatory skills for academic readiness outcomes. This framework, in combining elements of the PIM and FSM, asserts that both investments and parenting contribute to the development of academic skills; however, it asserts that parenting, and the nature of the parenting in particular, dictates the way that parents shape the self-regulatory competencies that undergird children's academic skills. The framework, however, operates on the premise that children in poverty are less likely to experience the types of experiences in the home context and with caregivers that would support regulatory skills and subsequent academic readiness (Blair & Raver, 2015; Raver et al., 2013). Specifically, Blair and Raver (2015) state, "Children in poverty are less likely to experience family, home, and neighborhood environments that foster prototypically optimal self-regulation" (p. 722). In taking this approach, Blair and Raver's framework may explain a mechanism leading to children's poor academic outcomes in the context of poverty, but may not be able to account for the ways in which children living in adverse contexts can have more positive outcomes. Resilience theories and work on Black families suggests that it is possible for parents to engage in supportive practices even in challenging contexts. In framing the current study, I combine this neurobiological framework with resilience theories to extend Blair and

Raver's framework to explore the ways that supportive parenting can contribute to children's regulatory skills and subsequent academic readiness in the context of poverty.

Resilience Frameworks

Resilience frameworks provide a frame for understanding how, even in challenging contexts like poverty, children can have positive academic readiness outcomes. Some early work on "resilient children" identified individual characteristics (e.g., autonomy or self-esteem) as the reason for children's adaptation in the face of negative circumstances (Masten & Garmezy, 1985). Early ecological theories (e.g., Bronfenbrenner, 1986) have informed some of the resilience work emphasizing the importance of context and external factors that may account for a child's resiliency. As a result, scholars identify three areas implicated in the development of resilience: "(1) attributes of the children themselves, (2) aspects of their families, and (3) characteristics of their wider social environments" (Masten & Garmezy, 1985; Werner & Smith, 1992). Scholarship in these areas reflects the need to identify the ways in which these proximal and more distal systems yield adaptive outcomes (Luthar, 1999). Specifically, Garmezy (1985) and Werner and Smith (1982, 1992) postulate that salient protective and vulnerability processes that impact children in poverty also occur on three broad levels—community-level influences such as the neighborhood and social supports, the family level (e.g., parental warmth or maltreatment), and the child's individual traits and characteristics (e.g., child competencies). In the current study, I will focus on processes that occur on the family level as well as the child level.

Work by Werner (1997) establishes how low-income children can have adaptive outcomes as a result of protective factors operating on an individual level, within the family context, and within the community. Werner's empirical work explored the protective factors that

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allowed children in poverty who were also exposed to perinatal stress, parental psychopathology, and family discord to become confident, caring adults. Specifically, Werner identified preschool-aged children's sense of autonomy combined with the ability to ask for help when necessary as individual-level protective factors. These protective qualities were predictive of children's resiliency years later. Other individual-level resilience factors were children's communication and practical problem-solving abilities. Werner also identified as a resilience factor having a special interest or hobby, particularly one that was shared with a friend, as a source of pride that was related to children's later sense of autonomy as adolescents and adults. Another salient protective factor was young children's belief in the effectiveness of their own actions, along with a sense of responsibility and high self-esteem.

Werner (1997) also discusses protective factors within the family sphere. This resilience framework emphasizes the multiple levels of influence on the child's development. The framework also takes up the interactional processes that contribute to the child's adjustment across contexts. Werner emphasizes that one protective factor for children was having established at least one close bond with someone aware of their needs, despite being in a context characterized by chronic poverty, family discord, and mental illness. Often "substitute caregivers" (e.g., grandparents or older siblings) filled this role and contributed to the child's positive development in the midst of the challenging context. Specifically, those substitute caregivers were able to provide the children with parenting necessary for them to become well-adjusted adults, such as a grandfather, older brother, or uncle who can provide boys with an example of emotional expressiveness. In addition, those in the home environment were able to provide rules and guidance and serve as a model of behavior for the child. The home context for girls, Werner points out, was a place where female substitute caregivers, if not the mother, could

model behavior and interact with girls in ways that cultivated both risk taking and a sense of independence. Werner emphasizes that even in challenging home contexts, there were opportunities to practice helpful acts such as taking care of younger siblings or ill family members who could not take care of themselves. In sum, children's interactions with caregivers, even within challenging contexts, yield opportunities that contribute to the development of important emotional and regulatory competencies and other strengths that might support children's adjustment across contexts and academic readiness.

Although the current study does not directly include measures of community context, it is important to note that Werner's findings also highlight the protective agents that operate in the more distal context of community. Such findings suggest that while poverty poses many challenges for the developing child, there are nevertheless supports that may buffer deleterious consequences. Further, there are factors that may even contribute to children's adaptive outcomes in such contexts. For example, although the literature suggests that living in poverty increases the chances that children will experience stress in their home environments (Kalil, Duncan, & Ziol-Guest, 2016), parents may interact with children in ways that provide security and the cognitive stimulation necessary for academic readiness.

Resilience frameworks suggest that supportive parenting practices could serve as resilience factors for children in poverty. In line with this, my work explores the ways that parents are able to engage in supportive practices that foster the development of children's self-regulatory competencies and subsequent academic readiness despite structural and social challenges associated with poverty that may challenge development. Similarly, such frameworks of resilience may highlight how child factors (e.g., children's individual differences) may allow them to access resources and respond to the context in ways that allow them to adapt and thrive

despite constraints. In the current project, I explore the moderating role of children's individual differences in self-regulatory competencies, and how those competencies might change the impact of parenting on children's academic readiness outcomes.

In sum, by combining these theories, I provide a framework that may explain how supportive parenting that occurs in challenging contexts may support children's regulatory competencies and academic readiness. The broader ecological frameworks identify context and interactions between individuals within those contexts as influencing children's development. More importantly, ecological theory identifies parents as key players in children's development and the interactions between parents and children's in microsystems (e.g., immediate environments) as important to children's functioning in various exosystems (e.g., distal environments like school). The PIM and FSM explain the nature of these interactions as they relate to developmental and academic outcomes. Specifically, the PIM shows that there are many pathways by which parenting may impact children's learning and outcomes, particularly through investments in material goods. The theory asserts parents providing educational materials (e.g., books and educational toys) or enrolling children in extracurricular activities is the primary way that they supply children with the cognitive stimulation necessary for their academic success. The FSM explains the mechanism by which material hardship influences children's social outcomes. It proposes that material hardship may tax parents' mental health in ways that may challenge or reduce their use of supportive parenting techniques, thus posing challenges to children's social development.

Blair and Raver's (2015) neurobiological framework incorporates elements of these more traditional models of parenting and poverty and shows that both material investments and supportive parenting practices contribute to children's outcomes, while highlighting parenting as

the key mechanism by which children become ready for school. This framework, however, not only explains paths to social and academic outcomes, but provides a frame for understanding school readiness outcomes according to current conceptualizations that highlight the importance of regulatory skills. The neurobiological framework explains that there is a path linking parenting to children's self-regulation to academic readiness outcomes, but suggests that in the context of poverty, the kind of parenting thought to foster regulatory skills that support academic readiness may be less common.

While access to material goods and financial resources are suggested to enable pathways to result in positive outcomes, the resilience model suggests that positive outcomes can occur in the absence of such resources and even manifest in challenging contexts. Even in the context of poverty, it is possible for parents to support the development of children's regulatory competencies and academic readiness; for example, storytelling requires no learning materials but is associated with early cognitive skills like attention (Sheridan et al., 2010). Resilience theories suggests that parents can also interact with children in ways that challenge them and model the important regulatory behaviors and other competencies that underlie academic readiness. Most importantly, the theory suggests that parents can still provide supportive parenting that may yield positive developmental outcomes even in contexts that work against the child's positive development.

In concert, these theoretical frames provide a broader frame for understanding how children living in poverty can develop foundational self-regulatory competencies that prepare them to be academically ready, by virtue of the support they receive from their parents. This broader frame also reflects more current conceptualizations of the role of children's individual

differences and the ways they may help to support children's positive school readiness outcomes in adverse contexts.

Academic School Readiness

Because of the increased focus on academics, skills necessary for children to learn have been included in both the overarching definitions of school readiness (NEGP, Head Start) and the focus of interventions that promote school readiness (Ursache, Blair, & Raver, 2012). Work by Heaviside and Farris (1993) presented the skills that kindergarten teachers identified as necessary for children's school readiness and classroom learning. Among these skills were competencies such as being able to pay attention and regulate emotions and behavior as opposed to strictly academic competencies such as being able to count or use a pencil. The skills ranked by teachers reflected the importance of children having adaptive approaches to learning. Such findings prompted scholars to consider the ways that children approach learning when defining school readiness. The teachers' conceptualization of readiness reflected a self-regulatory perspective—the idea that readiness and academic skills cannot happen without important cognitive regulatory developments, particularly children's ability to regulate their attention and emotions (Heaviside & Farris, 1993).

School readiness includes a broad spectrum of competencies and skills that help children to meet the scholastic demands of new formalized learning environments. School readiness generally refers to the set of skills that are thought to help children adjust successfully and perform in line with developmentally appropriate expectations in classroom settings (Lewitt & Baker, 1995). However, academic school readiness refers to domain-specific skills, typically in areas of math and literacy.

The widely used National Education Goals Panel (NEGP, 1995) outlines five areas that make up school readiness: physical well-being and motor development, social and emotional development, language development, cognition and general knowledge, and approaches to learning. These five areas are considered the critical areas influencing and supporting children's development and learning upon entering school.

Math and Literacy

Math. Math knowledge is implicated in one of the NEGP's definitions of cognition and general knowledge. The construct of knowledge has been taken up by scholars in many ways, as there are different types of knowledge. The NEGP's (1995) conceptualizations of knowledge reflect those depictions put fourth by cognitive psychologists such as Piaget (1952, 1954, 1965), Vygotsky (1978), and Gardner (1983).

The NEGP (1995) definition of cognitive and general knowledge reflects Piaget's three categories of knowledge: physical knowledge, social-conventional knowledge, and logico-mathematical knowledge. Physical knowledge is knowledge about the features of something or objects in the external world. Social conventional knowledge is knowledge of conventions established by society and those that are emphasized in school settings. Logico-mathematical knowledge is what allows for children to make meaning of relationships (e.g., point out differences and similarities) between people and objects that exist in the physical world. This type of knowledge is crucial for children to be able to solve problems.

More specifically, the NEGP states that mathematical knowledge allows children to understand sequences, including the sequencing of events and properties of time, relationships between objects, and numbers and their cardinal and ordinal properties. Simply being able to count to 10 is not necessarily math knowledge. Children must be able to understand that numbers

have meaning and comprehend one-to-one correspondence. Problem-solving is a math-related skill that involves reasoning about relationships, strategizing, and critical thinking and analyzing information to arrive at a solution. Studies suggest that parents can play a significant role in preschoolers' development of these skills (Welsh, Bierman, & Mathis, 2014).

Literacy. Language development is another area of school readiness that has important implications for children's school success. Language development falls in line with more traditional conceptions of school readiness. The NEGP (1995) defines language development as the "acquisition of linguistic forms and procedures, and social rules and customs for acts of expression and interpretation" (p. 29). It is important to note, however, that many aspects of language development are not yet achieved by age five and therefore not considered a prerequisite to entering school. Instead, language development is considered an important area in which teachers and families can work to build children's skills in different contexts over time (Kuhn, Willoughby, Wilbourn, Vernon-Feagans, & Blair, 2014).

Children who are most susceptible to being unready struggle in areas of language development (Hoff, 2013; Kagan, Moore, & Bredekamp, 1998). There is a heavy emphasis on communication or "communicative competence" and making sure that children understand not only meaning and structure of language, but how to use language. There are two areas of significant importance with regard to language: verbal language and literacy. The development of these two areas is supported by more knowledge or interactions with skilled language users across contexts. Through interactions with skilled language users like parents or older siblings, children are able to make linguistic gains. For example, reading to children helps build their ability to communicate and think critically (Hoff, 2013). More specifically, verbal language encompasses several other skills and behaviors such as listening, speaking, questioning, and

vocabulary. It also includes creative uses of language (e.g., developing and telling a story; playing with rhyming sounds) and social uses of language (e.g., knowing what type of language to use if specific contexts; saying "please" and "thank you") (Hoff, 2013; NEGP, 1995).

Literacy is another important area under the umbrella of language development. Emergent literacy skills are not those that enable a child to read but skills gained before a child is taught to read, such as encoding symbols and extracting meaning from them. Four categories of literacy are particularly important for children (NEGP, 1995): literature awareness, which includes a child's ability to recall a familiar story; print awareness, which includes the ability to link combinations of letters to sounds and identifying one's own name in written text; story sense, which involves children being able to identify the sequencing of events in a story (e.g., the beginning, middle, and end of a story); and writing process, which refers to the child's ability to "produce writing configurations" such as a circle on a page (NEGP, 1995, p. 29).

It is clear that the presence of books and caregiver reading to children may play an important role in the development of these critical emergent skills. However, children are also exposed to language in other contexts such as signs as they walk down the street, labels on food, song lyrics, and storytelling or play activities. Literacy skills become the foundation for other important cognitive skills like problem solving, reading, writing, and gaining abstract knowledge, as well as social emotional development (Hoff, 2013). Low- income children can enter school up to a year to a year and a half behind higher income children in the areas of vocabulary, reading, and math (Ma et al., 2015).

Studies have shown that children living in poverty are at greater risk of not being school-ready (Fantuzzo, Bulotsky-Shearer, McDermott, & McWayne, 2007: Isaacs, 2012). Specifically, in 2012 fewer than 48% of low-income children were estimated to be school ready at the age of

five in comparison to 75% of their middle and high-income counterparts (Isaacs, 2012). With these alarming statistics in mind, the federal government has increased its focus on the issue of school readiness in the context of poverty with programs like Head Start.

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Head Start traditionally focused on building children's social skills, recognizing that they underlie learning processes in the classroom; however, it later shifted to other skills. While these goals for children closely align with those of NEGP (e.g., Language and Literacy, Cognition and General Knowledge, Approaches to Learning, Physical Development and Health, and Social and Emotional Development), Head Start positions parents as key players in the developmental process that can teach and support children. Parents are also included in Head Start programing and supported as they work with schools to help children make successful transitions into kindergarten. Head Start's school readiness approach is unique in that it involves the provision of comprehensive services to low-income families ranging from family goal setting to health and behavior screenings. Head Start also sets individual goals with families around their children's preparedness in addition to the school readiness goals that are addressed through the Head start curricula.

I chose to focus on academic school readiness outcomes (i.e., literacy and math skills) because many minority children suffer in these areas (Reardon, 2013). It is important that we

focus on math and literacy from a policy perspective as well. With new statutes of accountability linked to NCLB, children are expected to be proficient in these academic areas by third grade. In addition, emergent literacy skills and mathematical skills strongly predict children's performance and achievement in these areas over time (Duncan et al., 2007).

Some programs and interventions have tried to address these issues and reduce disparities by targeting mathematics and literacy skills directly. While this domain-specific approach may help children gain exposure and exercise early academic skills, developmental literature and cognitive science show us that preschool is a critical time for development. This formative period is a time when children can develop the core cognitive processes (e.g., regulation of attention and emotion) that support and set the stage for all learning.

Understanding how parenting may relate to these important dimensions of readiness may help researchers and interventionists address early gaps in achievement. In addition, understanding the mediational role of cognitive competencies in the relationships between parenting and academic outcomes may also help educators to understand how children in challenging contexts may develop critical skills necessary to become school ready. In the current study, I will address these areas by examining indirect relations between and preschoolers' academic outcomes, self-regulatory competencies, and supportive parenting practices. I will also examine the ways these self-regulatory competencies modulate the relation between supportive parenting and children's outcomes.

Supportive Parenting in Context

Conceptualizing Supportive Parenting

Parenting is arguably one of the most important influences in early development and critical to children's academic readiness. The relationship between caregivers and children is

thought to serve as the foundation for the child's relationships with peers in classroom settings; it also contributes significantly to the child's overall social adjustment. Moreover, parenting is thought to contribute to the development of children's language skills and self-regulatory competencies, and it has been linked to nearly every aspect of cognitive development and executive functioning (Dower & Mendez, 2015; Jagers, Bingham, & Hans, 1996; Raikes, Vogel, & Love, 2013; Sheridan et al., 2010).

Supportive parenting falls under the umbrella of positive parenting. There are many definitions of positive parenting and much overlap with those of supportive parenting. Kulkarni (2010), for example, defined positive parenting through concepts including parent's practices that foster love, warmth and understanding, and modeling appropriate behaviors to the child. Oyserman, Bybee, Mowbray, and McFarlane (2002) conceptualize positive parenting as simply maternal nurturance, authoritative parenting style, and involvement in schooling. Danzig and colleagues (2015) say positive parenting is positive affect, supportiveness, and warmth.

McWayne et al. (2016) define positive parenting as "the use of a variety of behavioral strategies to ensure the development of children who are responsive, obedient, confident, and competent; who have a sense of enthusiasm and curiosity about the world; who are caring and appreciative of their connection and responsibility to others; and who have a sense of racial and cultural pride as well as an understanding of themselves as spiritual beings" (pg.18). McWayne et al.'s (2016) measure of positive parenting, based on this definition, reflects both general positive practices like involvement that have been linked to children's positive outcomes, and more culturally specific practices such as fostering cultural pride. This conceptualization of positive parenting put fourth by McWayne et al. (2016) expands the broader positive parenting literatures to reflect relevant practices, competencies, and lived experiences of Black families

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raising children in the context of poverty. What is common in these definitions if the idea of a healthy parent-child bond.

Supportive parenting refers to a subset of positive parenting practices, particularly those that refer to the parent-child dynamic. Traditionally, supportive parenting refers to the behavioral support that parents provide children in the parent-child relationship. Emotional support is often conceptualized as practices that foster warmth, responsiveness, nurturance, and sensitivity. Behavioral support is often conceptualized as lack of harsh punishment and the presence of inductive disciplinary tactics that guide children's behavior and help them to guide their own behavior. However, while these practices are important for the development of all children, they do not consistently reflect the cultural differences of Black parents and their children and the socioeconomic challenges faced by Black families living in poverty. Parents' understandings and theories of effective ways to parent are based on their own cultural socialization, individual personality factors, and the child's individual characteristics, strengths, and needs (Julian et al., 1994). With growing socioeconomic, structural, and cultural diversity in the United States (McLoyd, Cauce, Takeuchi, & Wilson, 2000) comes a variety of attitudes, beliefs, and values around positive parenting. These influence the ways that caregivers parent their children and the children's subsequent development.

Beyond the issues of attitudes, beliefs, and values are myriad other factors affecting positive parenting and parental impact. Not the least of these are the impacts of race and poverty. Although not all Black families or families of color fall into the demographic category of low SES, Black families in America, and Black parents in particular, face disproportionate parenting challenges imposed by race, poverty, and systemic inequities. Given this fact, references to Black parents in general in this paper refer to parents of the African Diaspora, who, while not

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necessarily low-income, face obstacles imposed by race and systemic inequities. Low-SES Black families face not only racial and systemic obstacles but socioeconomic challenges as well (Franklin, Boyd-Franklin, & Draper, 2002; Lerner, Taylor, & vonEye, 2002; McLoyd, 1990). Recognizing this, it is particularly important to understand the ways many Black caregivers approach supporting their children's learning and help children become ready to succeed in school.

Research shows that many young children are able to demonstrate developmentally appropriate competencies even in the context of poverty (Prince-Embury & Saklofske, 2012). It follows that despite challenging contexts, many low-SES Black caregivers, while engaging in their mode of supportive parenting practices, help ameliorate societal obstacles to their children's development and promote their adjustment. Supportive parenting, in this regard, serves an important role in determining children's outcomes and is identified as a protective factor, particularly for young children who reside in urban neighborhoods (Gorman-Smith & Tolan, 1998; Koblinsky, Kuvalanka, & Randolph 2006; Matsen et al., 1999).

Supportive parenting is context-dependent. Whereas we know that responsiveness and warmth, for example, hold benefits for children's development, manifestations of these practices of support may vary on the basis of the context and various challenges that parents must negotiate to both support and protect their children. Black parents are thought to hold values that are similar to those of the broader community; however, parenting in the context of a racist society may differentially impact the ways in which parents engage with their children. Many Black parents engage in parenting practices that help inculcate skills that protect children from the racism and hostility that characterize the experiences of Blacks living in the U.S. (Chatters & Lewis, 1990). In addition, many low-income parents may rely on supportive techniques that,

compared to traditional frames, would appear harsh yet protect and guide children's behaviors toward optimal outcomes given that context. It is important, then, when considering the ways that parents affect children's regulatory competencies and subsequent academic readiness, that we consider a broader definition of "supportive parenting" that aligns with the culture and context in which parents raise their children.

In the current study, I focus on supportive parenting because developmental theories of poverty (i.e., FSM and PIM) and the neurobiological framework suggest that in poverty, these areas of parenting are most likely to be compromised. Further, studies and theories also propose that these areas of parenting matter for the development of regulatory skills and subsequent academic readiness (Blair & Raver, 2015). In the current study, however, I draw from the McWayne et al.'s (2016) Black Parenting Strengths in Context Scale, and conceptualize supportive parenting as Fostering a Connected and Competent Self and Behavioral Guidance and Responsiveness, as these two subscales reflect the parent-child dyad. The review of the literature foregrounds McWayne et al.'s (2016) work, while integrating literature on both general supportive parenting practices and supportive parenting in the context of Black families and poverty. As a result, I present a more holistic view of the construct of supportive parenting.

Fostering a Connected and Competent Self

When considering how low-income Black parents provide support to children, a unique and powerful approach to parenting emerges. Collectively, the practices represented in the following studies reflect the importance of family and familial relationships in the nurturance and multidimensional emotional, social and moral support of the child. While various studies emphasize differing modalities of supportive parenting, the recurring broad themes across studies include nurturing and warmth, autonomy, encouragement, educational support, and fostering

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competence and a sense of connection to the broader community. These elements are key factors in the development of the child's individual stability and strengths and play a major role in shaping self-regulatory competencies and school readiness outcome.

Though supportive parenting has generally been understood through the work of Baumrind (1971) as degrees of emotional support and warmth and control, the current study draw a broader conceptualization of supportive parenting reflecting the constructs of Fostering a Connected and Competent Self and Behavioral Guidance and Responsiveness (McWayne et al., 2016).

McWayne et al. (2016) show that low-income Black caregivers, in part, foster a connected and competent self by providing children with nurturance. These parenting practices of Fostering a Connected and Competent Self, however, also reflect the importance of parents providing the child with social emotional and moral encouragement and nurturance in the home. Practices include teaching children, and maintaining a safe, nurturing environment, as well as by providing guidance. Further, this dimension of parenting emphasizes the importance of bonding and trust between parents and children; it also helps children gain empathy, the capacity for altruism, kindness, self-regulation, and learning behaviors and other foundational competencies (McWayne et al., 2016).

Generally, scholars identify nurturance (e.g., sensitivity, attentiveness, and responsiveness) as an important aspect of parenting that has positive implications for child outcomes (Miller et al., 2011). Work by Barnes and York (2001) suggests that there are many ways in which parents and caregivers provide social emotional support and nurturance to their children. Studies have typically linked nurturance to secure attachment style (Barnett, Kidwell, & Leung, 1998) and general prosocial development (Fine, Voydanoff, & Donnelly, 1993). There

is empirical evidence, however, that parental nurturance relates to several domains including school readiness and academic performance (Pettit, Bates, & Dodge, 1997). Moreover, parenting characterized by nurturance has also been linked to positive psychological and educational outcomes among Black children, in particular those living in poverty and facing other disadvantages (Cicchetti & Blender, 2006; Gunnar & Quevedo, 2007; Masten, 2001). For example, studies found that the combination of nurturance and control predicted academic outcomes among Black children (Taylor & Roberts, 1995). Nurturance is also associated with better memory ability in low-income Black preschool school aged children (Farah et al., 2008). In addition, a study by Merlo, Bowman, and Barnett (2007) explored the relationship between parental nurturance and children's early literacy skills among low-income 4- to 5-year-olds participating in Head Start. After researches controlled for home academic stimulation, verbal reasoning, phonological reasoning, and prior reading ability, researchers found that parental nurturance uniquely predicted growth in reading achievement. Such nurturance in academic interactions particularly important. Studies show that frequent verbal interactions between parents and nurturing caregivers are associated with better reading skills and becoming a more successful reader more generally (Norman-Jackson, 1982). Further, nurturance from parents has even been found to foster children's valuing of reading (Arzubiaga, Rueda, & Monzo, 2002). Studies also support that nurturance helps foster a safe and secure social emotional atmosphere in which children feel supported and can experiences positive affect that motivates their academic achievement, particularly learning to read and acquiring other important foundational academic skills (Vondra, Barnett, & Cicchetti, 1990).

In addition to these benefits, research shows that nurturance is important for the development of competencies that support academic skills. Repetti, Taylor, and Seeman (2002)

suggest that nurturing parents may help children to gain skills necessary for emotion regulation that can attenuate the physiological consequences of poverty-related stressors. Other studies also show how the benefits of nurturance extend to children's neurocognitive systems implicated in learning and self-regulation. In a study with low-income African American mothers of preschoolers, for example, researchers found that nurturance played a protective role in that it buffered the impact of low cognitive stimulation on preschoolers academic and social school readiness outcomes (McGroder, 2000). In addition, Miller and colleagues (2011) found that nurturance buffered against negative health disparities due to poverty among low-SES children over time. Similarly, research has shown that nurturing caregivers promote children's brain maturation in areas that support children's regulatory competencies (Nonneman, Corwin, Sahley, Vicedomini, 2012). Other scholars have pointed to the ways that nurturance mitigates the wear that various facets of poverty place on children's physiological systems (Chen, Miller, Kobor, & Cole, 2011). Some researchers submit that nurturance buffers negative effects of poverty by giving children security, allowing them to trust others and believe the world is a safe place, thereby reducing vigilance and the wear it places on their physiological systems (Cassidy & Shaver, 2008).

Scholars have identified many mechanisms by which nurturance underlies important aspects of children's learning. For example, parents whose practices are characterized by nurturance foster a positive self-concept in children, which may increase children's feelings of competence inside and outside of the classroom (Arzubiago, Rueda, & Monzo, 2002). Research has also found that a nurturing parent who spends time with children in learning activities reinforces motivation (Cameron & Pierce, 2001) and promotes development of children's self-regulation, an underlying aspect of academic performance. Similarly, McGroder (2000) found

that the children of nurturing African American mothers exhibited higher levels of social maturity, which is related to children's regulatory abilities (Salovey, 1997). In this regard, nurturance provides many pathways to positive academic outcomes among young children.

The expression of warmth, another key component of this dimension of supportive parenting that surfaces in McWayne et al.'s (2016) measure, is also reflected in more traditional conceptualizations of supportive parenting. Manifestations of warmth may include how affectionate or positive the parent is, or the approach caregivers take when parenting Connectedness and warmth can also manifest in elements of the home environment (Caldwell & Bradley, 1984). Nurturance, on the other hand, includes parents' sensitivity and attentiveness to children's problems and worries, as well as time given to the child and responsiveness to their needs (Miller et al., 2011). Some studies have emphasized the importance of warmth and parental care and considered the extent to which parents hold the child and show affection, converse with the child, and show acceptance (Farah et al., 2008).

Studies show there are numerous domains in which support manifests among low-income Black parents and caregivers (Dodge, Coie, & Lynam, 2006; Dodge, McLoyd, & Lansford, 2005; Peters, 2007). Warmth consistently appears in the parenting literature as the key mechanism by which parents support their children (Baker & Rimm-Kaufman, 2014; Jackson-Newsom, Buchanan, & McDonald, 2008; McGroder, 2000; Yildirim & Roopnarine, 2015). Parental practices characterized by warmth and sensitivity have most often been linked to children's social-emotional outcomes including the development of secure relationships (Ainsworth, Bell, & Stayton, 1972; Guralnick, 2006; Landry, Smith, Swank, Assel, & Vellet, 2001), higher levels of self-reliance, and fewer behavior problems (Gonzales, Cauce, Friedman, & Mason, 1996; Taylor & Roberts, 1995). Some research, however, has linked practices

characterized by warmth to children's academic outcomes. For example, parental warmth coupled with sensitivity have been found to contribute to learning and language stimulation, which, in turn, facilitates the development of children's phonological awareness, letter knowledge, and overall reading performance (Bradley, Corwyn, Burchinal, Pipes McAdoo, & Garcia Coll, 2001).

Research shows that practices that foster warmth in the parent-child relationship may also contribute to social skills that facilitate self-regulatory competencies and support academic readiness. For example, studies show that when children and caregivers display such highly connected relationships characterized by warmth, children do better in school settings. Specifically, they are more likely to develop strong pro-social attitudes, greater numbers of high quality friendships and more peer acceptance in kindergarten (Clark & Ladd, 2000; Kerns, Klepac, & Cole, 1996). Similarly, Denham and Weissberg (2004) found that when children had secure attachments to one or more adults, they were more able to complete tasks that drew on social-emotional competencies. Children without such attachments were disadvantaged when engaged in social-emotional learning tasks. This may be particularly important as learning tasks in early childhood are often taking place in social settings. Academic engagement necessitates social skills such as being able to sit still and work with peers. Further, social-emotional skills also facilitate the development of important regulatory skills (Blair & Raver, 2015). In this parents' practices of nurturance may be cultivating important social-emotional skills that support the development of regulatory competences necessary for positive academic outcomes.

While more research examines relations between warmth and children's social outcomes, some research has considered the ways such practices relate to academic outcomes. Research has found associations between parenting practices characterized by warmth and higher levels of

academic achievement among Black children across income groups (Gonzales et al., 1996; Taylor & Roberts, 1995). Similarly, supportive parenting characterized by warmth, sensitivity, and emotional availability (Emde & Robinson, 2000) has been linked to academic outcomes such as children's cognitive competencies and language skills, as well as patterns of positive academic performance over time (Downer & Pianta, 2006; Hirsh-Pasek & Burchinal, 2006). Moreover, work Bradley and colleagues (2011) also highlights the link between parental warmth and achievement across academic domains. Maternal warmth and sensitivity, for instance, are associated with children's overall growth in reading achievement in the first few years of school (Bradley & Caldwell, 1984). Parental warmth has also been linked to reading achievement independent of differences in socioeconomic status (Dubow & Ippolito, 1994), and among low-income families (Casady, Luster, Bates, & Vandenbelt, 2002). For example, studies have shown that when low-income teen parents are warm, frequently talk to their children, and have positive interactions with their children, their children become more successful readers (Casady et al., 2002).

While including these traditional facets of supportive parenting (e.g., warmth and nurturance), the construct of Fostering a Connected and Competent Self extends beyond conventional conceptualization of support to include other supportive practices such as encouraging the child's interests and autonomy, fostering a sense of self, and cultivating a sense of community and connectedness to others (McWayne et al., 2016). Work by McWayne and colleagues (2016) shows that, for many low-income Black parents, supportive parenting may not only come from warmth in the more traditional sense (e.g., telling the child that they are loved and expressing affection) but through the parents' building of relationships and social capital. McWayne et al. (2016) highlight that many low-income Black parents prioritize supporting

children by helping them to build relational skills. By cultivating such competencies, parents help build and connect children to networks of both proximal and distal supports that can contribute to the development of children's social and academic competencies.

In this regard, the construct of Fostering and Connected and Competent self aligns with work by Black scholars that highlights the strengths of Black parents and families. Work by McCreary and Dancy (2004) also documents some of the ways many low-income single-parent Black families support children. Specifically, practices including providing emotional nurturance, communicating, doing things together as a family, helping each other, and parenting children appropriately help parents to establish connectedness and the foundation for important developments. Such practices reflect what Hill describes as "strengths" of Black families (Hill, 1999) and point to Black families' resiliency as described by McAdoo (1998). This work also emphasizes the importance of the role of extended family in parenting practices and building social capital among many low-income Black parents. Extended family, or fictive kin, may include those who are biologically related but also those who share an emotional bond, not a biological relationship, such as friends who have developed trusting relationships with parents over time (Hill, 1999). Such reliance on extended family members in parenting processes is recognized as a strength among Black families and an important part of supportive parenting and family functioning (McCreary & Dancy, 2004). Interviews with single-parent caregivers revealed that the extended family is a source of both material and emotional support among Black families (Hill, 1999; McCreary & Dancy, 2004; Stack, 1974). Extended family members may even have indirect parenting roles. Family members and extended family members play an important role in socialization and support (Taylor, Jackson, & Chatters, 1997). Extended family and fictive kin help reinforce nurturing parenting practices that support the development of the

foundational competencies that underlie children's academic readiness.

In addition, Fostering a Connected and Competent Self emphasizes parents' promotion of children's individuation and self-competence (e.g., autonomy and independence). This is another facet of supportive parenting that extends beyond more traditional conceptualizations of the construct. When parents support children's learning across contexts, and promote children's autonomy, children may be more likely to participate in learning activities and perform better academically. For example, such practices, characterized by the promotion of children's autonomy have been linked to increased levels of cognitive skills in children (Mulvaney, McCartney, Bub, & Marshall, 2006). Similarly, parenting practices that emphasize the child's independence have also been associated with children's self-regulatory abilities (Neitzel & Straight, 2003). The literature links such practices to children's ability to communicate with peers and to their assertiveness and self-directedness in play and social interactions in preschool (Denham, Renwick, & Holt, 1991). In this regard, when parents engage in practices that build children's competence, children may develop more secure peer relationships. These relationships, in turn, may help children to be more comfortable in social learning contexts, exercising learning behaviors such as working with others and asking for help, which can ultimately support children's academic readiness (Landry et al., 2001; McDermott et al., 2016).

In sum, there are many mechanisms by which practices aimed at fostering a connected and competent self may influence positive outcomes. For example, another key aspect of Fostering a Connected and Competent Self is encouragement. Parents may encourage the development of children's literacy skills, for example, by using the positive interactions and intimacy of reading time as a motivator. Children may view the time that they get to spend with their parents as special and enjoyable, thus encouraging zest and helping them perceive reading

as enjoyable. Similarly, cognitive evaluation theory suggests that nurturing parents often provide verbal praise when their children are engaged in an academic task, thus promoting development of children's sense of competence. Having a competent sense of self has motivating qualities for children that support their participation and persistence in academic activities (Deci & Ryan, 2000). Together, the practices reflect the construct of Fostering a Connected and Competent Self show the ways that parents encourage autonomy, warmth, relational skills, and set the stage for children's understanding of formal and informal learning processes (McWayne et al., 2016).

In the current study, I explore the ways children's self-regulatory competencies will mediate and moderate the relation between Fostering and Connected and Competent Self children's academic readiness outcomes. Given that elements of Fostering a Connected and Competent Self have been linked to skills that promote children's regulatory competencies (e.g., social-emotional skills) and directly to academic outcomes (e.g., literacy competencies), I expect that children's regulatory competencies will mediate the relation between this facet of supportive parenting and children's academic readiness outcomes. I also predict that children's self-regulatory competencies will interact with the ways parents Foster a Connected and Competent Self to inform school readiness. For example, children who are average in emotion regulation competencies may benefit from parents who provide encouragement in ways that support he child's academic readiness outcomes.

Behavioral Guidance and Academic Readiness

Another important area of supportive parenting involves parents' guiding the behavior of their children. Behavioral Guidance and Responsiveness generally refers to the ways that caregivers respond to their children's misbehaviors and proactively help children plan to guide their own behavior (McWayne et al., 2016). Behavioral guidance techniques with preschool-aged

children are important because children seek opportunities to be independent at this age. This in turn may increase the parents' need to guide their children's behaviors (Chapman & Zahn-Waxler, 1982). Such manifestations of internalization of these practices may be also be observed at this developmental stage (Lytton, 1997).

Parents rely on different techniques to guide the behavior of their young children. Power, assertion, love withdrawal and induction, for example are common forms of discipline and guidance. Zussman (1978) assessed the use of these disciplinary techniques among parents alongside demographic variables. Power assertion is physical or material sanction of control including physical punishment or withdrawing of privileges. Love withdrawal is the temporary removal of affection, and induction refers to disciplinary strategies involving reasoning, role-playing, discussion, and a focus on the consequences.

The type and quality of behavior guidance and discipline parents use is important when considering children's early outcomes (Larzelere, Cox, & Mandara, 2013). Harsh discipline, for example, is related to behavioral problems during the preschool years and in later years (Tolan, Dodge, & Rutter, 2013). Parents typically rely on combinations of disciplinary practices when guiding the behavior of their children. Further, the child's misdeed and the context can also influence the disciplinary techniques parents choose to use (Chapman & Zahn-Waxler, 1982; Larzelere & Kuhn, 2016). In this regard, discipline is a reciprocal processes between the parent and the child. The child's response to parent's guidance as well as previous experiences and expectations held by parents and children can color the disciplinary exchange.

Children learn how to confront tasks and challenges as a result of their caregivers' modeling, guidance, and instructions. Modeling is also thought to be an important part of discipline, a mechanism that informs the ways that children approach learning (Bandura, 2015).

Children also begin to understand ways of regulating their own behavior as a result of parental guidance. The ways that parents guide behavior and discipline are particularly influential in the development of children's locus of control. Perceived locus of control can be especially important in considering how children develop competencies that support their learning, how they approach academic tasks, and their academic readiness. For example, if children perceive a task to be out of their control, they will not be motivated to engage in their regulatory competencies to persist.

Because Behavioral Guidance and Responsiveness is considered an important set of supportive parenting practices that most parents implement to some extent. Scholars have examined the relations between various type of behavioral guidance and children's outcomes (Karreman, vanTuijl, van Aken, & Deković, 2006). Three domains related to this dimension of supportive parenting—parental support, structure, and control—are linked to children's optimal outcomes (Slater & Power, 1987). Parental support and structure and control have been linked to children's self-reliance, competence, and compliance (Baumrind, 1971; Chapman & Zahn-Waxler, 1982; Jackson, Brooks-Gunn, Huang, & Glassman, 2000; Power & Chapieski, 1986). Types of discipline included reasoning, verbal prohibition, physical coercion, love withdrawal, and combinations of the techniques. Black parents may also rely on other strategies to guide the behavior of their children, such as a look that serves as a warning to the child (Coolahan, McWayne, Fantuzzo, & Grim, 2002). Work by Chapman and Zahn-Waxler (1982) found that guidance techniques were more or less effective based on children's misbehaviors. These findings suggest that parents may tailor the way that they guide children's behavior in response to the child. In line with ecological frameworks (e.g., Bronfenbrenner, 1986), behavioral guidance practices are interactional. It is the interplay between the parenting practice and the

child's behaviors that shape the child's outcomes. In the current study, I will examine such interactions between parenting practices of Behavioral Guidance and Responsiveness and children's academic readiness outcomes.

Many scholars have criticized disciplinary techniques used by Black families as too harsh, particularly the use of physical punishment (Dodge et al., 2005). Work by McWayne et al. (2016) however, suggests that Black parents contribute to their children's development by using various strategies to guide their behavior. Parental disciplinary strategies that include withdrawal of privileges, dialogues with children, and "the look" are effective responses to children's misbehavior (Coolahan et al., 2002). Various discipline practices, however, may be more normative, socially accepted, and necessary among particular groups given the cultural context in which they live. In contexts where children may be exposed to dangerous environments, so-called harsh discipline may even be viewed as positive parental involvement and have a different developmental function than it would for children in other contexts (e.g., Deater-Deckard, Dodge, Bates, & Pettit, 1996; Harwood et al., 2002).

The current study, however, does not examine the ways that parents engage in punishing their children but focuses on methods of guiding their behavior; for example, taking something away from the child that he or she likes when he or she misbehaves. Whereas most studies have drawn connections between behavioral guidance and social outcomes, few studies consider the ways in which behavioral guidance may relate to children's academic outcomes, and academic readiness in particular. Work by DeBaryshe, Patterson, and Capaldi (1993), for example, found that parental discipline is also associated with poor academic achievement.

In addition, parental practices that guide children's behaviors have important implications for the development of children's regulatory competencies—particularly the way that children

regulate and monitor their own behavior in the context of negative emotions. Such competencies are thought to be important underlying mechanisms driving learning processes and academic readiness. My work will fill these gaps first, by examining the relations between Behavioral Guidance and Responsiveness, children's foundational self-regulatory competencies, and subsequent academic readiness outcomes, thus adding to the literature related to supportive guidance practices and children's academic development. Second, I will explore the interaction between parents' disciplinary practices and children's competencies as they relate to academic preparedness.

In line with the aforementioned developmental ecological and resilience theories, supportive parenting takes place in various levels of the child's ecological environments. Fostering a Connected and Competent Self and Behavioral Guidance and Responsiveness are facets of positive parenting that reflect the parent-child interactions unfolding in more proximal ecological systems. Such interactions between parent and child are thought to be the mechanism by which children develop the regulatory competencies that underlie school readiness (Blair & Raver, 2015). Models of poverty (e.g., PIM; FSM) and the neurobiological framework point to the absence of such supportive parenting and presence of less prototypical and unsupportive parenting practices as challenges to the development of self-regulatory skills, resulting in children who are not ready to enter school (Blair & Raver, 2015).

In the current study, I hope to expand these models by testing the extent to which low income parent's supportive parenting relates to children's regulatory skills and academic outcomes. As presented, the literature on positive parenting and Black family strengths shows that, in the context of poverty, low-income parents engage with children in supportive ways that relate to children's development and have positive implications for their academic readiness

(Hurd, Moore, & Rodgers, 1995). These literatures and perspectives of positive and supportive family processes in the context of poverty have been excluded from cognitive and neurobiological frames of school readiness. A major contribution of my study is the synthesis of these perspectives to examine the ways that low-income black families may support children's school readiness and academic outcomes through children's important self-regulatory competencies.

Whereas studies point to the important supportive parenting practices of low-income parents that may support children's early learning, there are several limitations to this body of work that I will address to in the current study. First, the literature around Black parenting practices and socialization typically focuses on school-aged children and adolescents. In addition, much work centers on the relations of parenting to children's social-emotional development, not the cognitive skills that might underlie their academic development (e.g., Sheridan et al., 2010). Research suggests that parenting practices have important implications for both academic and social readiness outcomes in children. Understanding the ways that supportive parenting practices relate to young, low-income children's academic readiness is particularly important given that low-income children are more likely to be ill-prepared in the areas of math and reading upon entering kindergarten, and this gap in achievement widens as children progress through school (Reardon, 2013).

Further, supportive parenting is a multifaceted, multidimensional construct. Scholarship, however, is more limited in exploring its multiple dimensions among low-income Black families. Instead, most studies tend to critique instead of explaining the positive ways in which low-income parents support their children's development (McWayne et al., 2016). My study will

address this gap by virtue of using a multidimensional measure of positive parenting practices validated on a sample of low-income Black caregivers (McWayne et al., 2016).

The transactional model of school readiness echoes developmental ecological theories (e.g., Bronfenbrenner, 1984) as well as developmental theories (e.g., Vygotsky, 1978) that propose that interactions between caregivers and children together inform children's development across contexts. Such theories position parents and children as partners in the learning processes (Sheridan et al., 2010). However, studies that explore parenting among low-income parents often focus directly on the relationship between parenting practices and children's outcomes, not on the role that the child might play in those relationships. For example, Fantuzzo and colleagues (2004) explore how low-income Black parents' practices around involvement relate to preschool-aged children's academic and social readiness outcomes, but do not explore the role of child-level factors in examining these relationships. In this regard, they were able to point to which school readiness outcomes parenting relates to, but not how these relationships are bolstered or altered by children's individual characteristics. I will contribute to the literature by examining both direct and indirect relationships between parenting and academic school readiness outcomes that consider the role of the child in the context of positive parenting. I predict that children's self-regulatory competencies will modulate the relationships between both Behavioral Guidance and Responsiveness and Fostering a Connected and Competent Self to inform children's academic school readiness outcomes in math and literacy.

Although Behavioral Guidance and Responsiveness and Fostering a Connected and Competent Self are the two elements that make up supportive parenting, the literature shows that these elements each relate to different outcomes. For this reason, I will test these constructs independently as they relate to children's regulatory competencies and subsequent academic

readiness outcomes. I predict that both Fostering a Connected and Competent Self and

Behavioral Guidance and Responsiveness will indirectly relate to academic readiness through

children's self-regulatory competencies and that the relation of parenting to children's math and

literacy outcomes will be bolstered by children's self-regulatory competencies.

Why Might Supportive Parenting Relate to Children's Self-Regulatory Competencies?

Literature across disciplines shows that parents play a significant role in the development

of children's self-regulatory competencies—that is, their ability to focus when faced with

distraction, persist at tasks, modulate negative emotions, tolerate frustration, and receive help

when experiencing difficulties (McWayne et al., 2004). One way that parents may contribute to

children's cognitive self-regulatory competencies is through genetic endowment. Individual

differences in genes influence children's physiological, social-emotional, attentional, and

regulatory responses to stimulation. The response patterns that occur on the genetic level shape

cognition and subsequent behavioral patterns. Behavioral patterns, however, can also influence

cognitive processes and neurocognitive structures (Blair & Raver, 2015). In this regard, parents

determine genetic makeup, which can influence executive functions and the cognitive skills that

regulate stress physiology through attention and emotion.

Parents not only genetically contribute to children's competencies, but they make

contributions behaviorally. Scholarship points to the importance of the home context for the

development of cognitive self-regulatory competencies (Blair & Raver, 2015). How parents

interact with children shapes children's stress reactivity, and how children engage the regulatory

systems of attention and emotion that help them to manage their reactions (Blair & Raver, 2015).

Stress physiology in closely linked to activity in brain areas central to self-regulation (Blair &

Raver, 2015). Particular practices that emphasize sensitivity to children's needs, nurturance, and verbal stimulation support children's early cognitive regulatory competencies (Smith et al., 1997). When children have support and positive interactions with those in their proximal contexts (e.g., home and school), those interactions influence individual differences in regulatory competencies and higher order cognition partially through the mechanism of stress physiology (Evans & Schamberg, 2009; Ursache, Blair, Stifter, & Voegtline, 2013). This means that how parents interact with their children shapes children's development of an orientation around stress, challenge, and adversity and influences how they engage attentional and regulatory competencies across contexts.

In fact, studies examining neuroendocrine functioning in young children have identified choices in parenting practices as the mechanism by which poverty influences the development of important cognitive self-regulatory competencies. Specifically, low-quality parenting and low-quality day care is associated with patterns of hypothalamic–pituitary–adrenal (HPA) activity that compromise cognitive regulatory functioning (Blair et al., 2008, 2011; Watamura, Donzella Alwin, & Gunnar, 2003). Similarly, studies have found that time away from low-quality care is associated with a lower resting level of cortisol (Berry, Blair, Willoughby, & Granger, 2012), that is, neurocognitive functioning that does not compromise regulatory competencies. In this regard, parents' behaviors and the nature of interactions in children's proximal environments shape the developing neurocognitive systems that support regulatory functioning.

Research in this area shows that the central and peripheral nervous systems are particularly responsive to early experience and adaptive to contexts in which they are being shaped (Zhang & Meaney, 2010). Studies exploring the relationships between parenting and the development of self-regulatory competencies in the context of poverty tend to focus on the ways

a lack of support or negative interactions in proximal ecological contexts challenge the healthy development of self-regulatory competencies by shaping stress physiology in a way that is adaptive in adverse conditions of poverty (e.g., the neighborhood) but not school (Blair & Raver, 2015). Yet, because these regulatory systems are responsive to experience, positive experiences (e.g., supportive parenting practices) may shape regulatory systems and the development of self-regulatory skills in positive ways. While more studies show how the consequences of negative parenting may relate to children's cognitive self-regulatory competencies in harmful ways, fewer studies explore the ways that positive parenting might also support healthy development of children's cognitive self-regulatory competencies even in challenging contexts. In the current study, I will fill this gap in the literature by exploring the path from supportive (as opposed to unsupportive) parenting to children's regulatory competencies and subsequent readiness outcomes.

I predict that supportive parenting will relate to children's self-regulatory competencies given that parents contribute both biologically and behaviorally to the development of the systems underlying them. Given that parents typically occupy the proximal home contexts with children, they interact with children in ways that shape what children pay attention to and manage negative emotions. In this regard I predict that parenting will relate to children's regulatory competencies because of the integral role they play (biologically and behaviorally) to the development of those competencies.

Why Might Self-Regulatory Competencies Relate to Children's Academic Readiness Outcomes?

Research shows that the self-regulatory competencies of attention control and emotion regulation are domain- general cognitive processes that underlie domain specific learning, particularly academic readiness skills in math and literacy. For example, attentional control supports children's problem-solving abilities and subsequent emergent skills in areas of mathematics and literacy (Fuchs et al., 2005; Passolunghi, Vercelloni, & Schadee, 2006; Welsh et al., 2010). These competencies are independent but also interrelated as they function together to support important developmental processes.

Blair and Diamond (2008) define attentional control as the capacity to focus and to shift attention. It is also the ability to ignore stimuli that are irrelevant and inhibit responses to those stimuli (inhibitory control) while responding to demands of the task at hand. Attentional skills also enable children to organize their thinking. Attentional control is particularly important for goal-oriented learning (Welsh et al., 2010) and adaptive responding to novel or challenging situations (Hughes & Ensor, 2007). Attention helps children to direct and regulate their behavior according to rules and to think flexibility. As attentional skills develop there is a decrease in children's reactive responding; instead, children are able to have adaptive responding to contextual cues and contingencies (Blair & Diamond, 2008).

Attentional skills promote the ability to inhibit impulsive responses and choose alternative responses. These attentional processes support children's regulation of their behavior and emotions, and support children's engagement in the world around them (Kochanska, Murray, & Harlan, 2000; Welsh et al., 2010). When children have strong attentional control, they also have other co-occurring executive functions that support their learning (Gathercole et al., 2008). These attentional skills, as well as other executive functions like working memory, support self-regulatory competencies as well as social competencies that in turn provide a

foundation for early engagement in classroom activities as well as engagement with teachers and peers (Gathercole et al., 2008; Hughes & Ensor, 2007).

As children are learning and engaging these attentional skills, there are many opportunities for failure and mismatch between expectations and the actual result. Children may grow frustrated at various stages of the learning process, but must regulate these frustrations and negative emotions in order to persist through tasks and complete activities. This ability to regulate their emotions is particularly important for young children, as the transition into formal school requires that children navigate new contexts, social interactions, and learning opportunities, and learn to work through challenges (Blair & Raver, 2015). In this regard, the regulation of emotion is also key to learning and academic school readiness skills.

Emotion regulation is also believed to support or limit opportunities for children's learning, partly as a function of facilitating other cognitive competencies that foster engagement and partly through social relationships (Mashburn & Pianta 2006). Emotion regulation is believed not only to influence the opportunities children have for positive social interactions with peers and teachers, but also to shape the nature of those interactions (Mashburn & Pianta 2006). This may be because emotion regulation also plays a critical role in determining children's tendencies to approach or withdraw. Research shows that teachers are more likely to communicate with children who are better at maintaining positive emotions and regulating frustrations and other negative affect. When children can better regulate their emotion they are better able to receive instructional guidance from those teachers (Raver, 2003). Teachers also have been found to spend more time characterized by didactic instruction with children who can better regulate their negative emotions and are less clingy and more manageable (Raver, 2003; Stuhlman & Pianta 2002). Similarly, children who have difficulty regulating their emotions may

have a biological tendency to be anxious and slow to engage when confronted with novelty (Rubin, Coplan, Cox, & Calkins, 1995), while those who are better at regulating are inclined to be less fearful and more excited when confronted with novelty and more socially inclined (Rimm-Kaufman & Pianta, 1999). These tendencies, influenced by emotion regulation competencies, shape children's engagement in class, participation in learning activities, and social interactions with those in the classroom context. Unlike lecture-based learning, many early school learning activities require children's direct participation in class. When children are better able to regulate their negative emotions, they are more likely to come to school, participate in class, and spend more time in both formal and informal learning contexts (Valiente, Lemery-Chalfant, & Castro, 2007).

In this regard, cognitive science shows that the ability to focus one's attention, work through bad moods, and persist through a task reflects domain-general, cognitive self-regulatory competencies, specifically the regulation of attention and emotion (Blair & Raver, 2015; Welsh et al., 2010). Attention and emotion regulation together make up cognitive self-regulation. Cognitive literature also shows that these cognitive self-regulatory processes underlie neurological systems supporting all facets of learning (Blair & Raver, 2015; Welsh et al., 2010). Although self-regulation is a cognitive competency, it is informed in part by social-emotional abilities as well. Studies consistently show that because cognitive self-regulatory competencies reflect these foundational regulatory processes underlying learning, they are also associated with short-term and long-term academic readiness outcomes (Blair & Raver, 2015; Denham, Bassett, Sirotkin, Brown, & Morris, 2015; Hamre & Pianta, 2001; McClelland et al. 2007; Kena et al., 2016; Riggs, Blair, & Greenberg, 2004; Rimm-Kaufman, Curby, Grimm, Nathanson, & Brock, 2009). In this regard, I predict that self- regulatory competencies will be the mechanism by

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which parenting practices are related to children's academic readiness because these domain-general processes of self-regulation support domain-specific academic outcomes like math and literacy (Blair & Raver, 2015).

Why Might Self-Regulatory Competencies Relate to Children's Academic Readiness Outcomes in Math and Literacy, in Particular?

Research links cognitive regulatory competencies to readiness outcomes, particularly in the domains of math and literacy (Welsh et al., 2010). Self-regulatory processes, for example, are implicated in math-related activities and tasks for young children. The conceptual understanding of mathematical concepts and mathematical content, and even textbook activities, enlist children's cognitive regulatory skills (Blair & Razza, 2007; Blair et al., 2008; Bull & Lee, 2014; Espy et al., 2004; Welsh et al., 2010). Specifically, exercises in pattern identification, recognition and completion, ordinality, cardinality, and transitivity tax children's attentional systems, requiring children to exercise cognitive flexibly and shift attention between different bodies of information. Mathematical tasks also require children to strategically manipulate elements of a problem, inhibit irrelevant information, and make choices around what to focus on given different contextual cues (Blair & Raver, 2015).

The notion that mathematics requires cognitive regulatory skills is also supported by research on neurobiology and math achievement. Children who have stronger cognitive regulatory skills (e.g., attention and emotion regulation ability) are better able to engage in mathematical thinking, as these cognitive competencies underlie math achievement (Espy et al., 2004; Rosenberg-Lee, Barth, & Menon, 2011). Blair and Razza (2007) and Espy et al. (2004), for example, found links between inhibitory control of attention and numeracy skills after controlling for IQ among preschoolers. Research has also shown that relationships exist between

math outcomes and children's ability to control attention (Welsh et al., 2008), ability to focus on relevant information (Passolunghi & Cornoldi, 2000), and computational abilities (Swanson, 2006). In this regard, it is not surprising that Blair and Raver (2015) explain that early mathematics learning represents an archetypal cognitive regulatory challenge for children.

Similarly, literacy activities in early childhood also enlist children's cognitive regulatory competencies, many of which are at play in the development of early literacy. For example, research has established links between attention control and reading (van der Sluis, de Jong, & van der Leij, 2006; Welsh et al., 2010). Literacy activities, particularly the development of phonemic awareness, are dependent on cognitive regulatory processes. Understanding compound words and being able to make sense of units of sound require flexible shifting of attention. In addition, recognizing and pulling apart smaller units of meaning, such as the word "birth" and the word "day" in the word "birthday," requires multiple cognitive regulatory processes. Specifically, it requires flexible thinking to recognize the word and shift attention to simultaneously see the word as one word *and* as comprising two words. In addition, Blair and Raver (2015) explain that spelling requires that children retain multiple representations of letter-sound correspondence and simultaneously inhibit one sound to focus on the other.

In this regard, the literature shows that self-regulatory competencies may relate to academic readiness outcomes because they reflect domain-general cognitive processes of attention and emotion regulation (Blair & Raver, 2015). The literature also shows that domain-general cognitive self-regulatory competencies underlie domain-specific academic skills, particularly in emergent math and literacy development (Blair & Raver, 2015; Welsh et al., 2010).

The regulation of attention and emotions is particularly important for learning and academic readiness. Attention is key for children to engage in instruction and complete and engage in important tasks. Similarly, children must be able to deal with their emotions as they engage in novel learning tasks that present difficulties and cause frustration. Moreover, these skills support children's ability to learn, engage in classroom activities, and perform on learning tasks in kindergarten and throughout elementary school (Blair & Raver, 2015). Cognitive self-regulatory competencies are the underlying mechanisms driving various, if not all, facets of learning.

In sum, regulation of attention and emotion is critical to and enables, in part, the development of academic readiness skills. In the current study, I will explore how parenting relates to children's cognitive self-regulatory skills and how those skills, in turn, relate to children's academic readiness. While research has established that self-regulation relates to motivational and behavioral skills (McLelland et al., 2007), fewer studies have explored their relation to academic school readiness outcomes among preschoolers (Welsh et al., 2010). Research that has explored academic outcomes has generally been with older youths (Fuchs et al., 2005). More studies have examined social-behavioral outcomes. My study fills this gap by linking cognitive and developmental literature to explain the ways that parenting may relate to the cognitive self-regulatory skills that underlie academic as opposed to social readiness outcomes.

Because the focus in the literature tends to be on low-income children's deficits, these conceptual links between children's cognitive assets and academic outcomes are usually not explored. When the cognitive skills of children living in poverty are being examined, it is generally in order to show how poverty may depress cognitive skills through harsh parenting. I

will add to the literature by taking a strengths-based approach in understanding (1) that low-income children's regulatory competencies are indeed competencies, (2) that they are informed by supportive parenting in the unsupportive context of poverty, and (3) that they relate to math and literacy. I will also examine the ways that self-regulatory competencies function as individual-level strengths and interact with supportive parenting practices to relate to academic readiness outcomes. Because cognitive self-regulatory competencies are domain-general processes that support all learning and are directly related to children's domain-specific academic competencies, particularly emergent literacy and numeracy skills (Blair & Raver, 2010; Welsh et al., 2010), I predict that self-regulation will mediate the relationship between supportive parenting and math and literacy. I also predict that self-regulatory competencies interact with parenting practices to inform academic readiness outcomes.

Why Might Children's Self-Regulatory Competencies Moderate the Relation Between Parenting Practices and Academic Outcomes?

Children's academic readiness outcomes are not determined only by the actions of parents. While frameworks and theories of development explain that parenting is a key factor in children's academic preparedness, parenting alone may not dictate how children become academically ready. The child is also an active agent in his or her own learning (Piaget & Inhelder, 2008). While cognitive self-regulatory competencies are indeed formative skills, they reflect, to some extent, the child's temperament and general disposition toward learning. Parents implement certain positive practices; however, depending on the child's competencies, those practices may yield very different outcomes. In this regard, each child brings unique qualities to

the parenting dynamic that must be addressed when considering the ways parenting contribute to children's academic school readiness.

As explained above, much work has examined the relations between children's self-regulatory competencies and academic outcomes. Less scholarship, however, has explored how learning behaviors may potentially diminish or bolster the effects of ecological factors—specifically, parenting practices—on child outcomes. The literature points to the conceptual reasons why children's self-regulatory competencies may enable or challenge the association between ecological factors, specifically supportive parenting practices, and academic outcomes. For example, ecological developmental research suggests that parenting is a social enterprise in which children and their caregivers interact in ways that shape children's development (Wentzel, 1999). Similarly, resilience frameworks propose that children may engage their strengths with the support of caregivers and other adults who support the child (Werner, 1997). Adults may provide children with opportunities to exercise their competencies in ways that result in positive outcomes even in adverse contexts.

Despite these conceptual linkages, there is limited research testing the interactions between supportive parenting and children's regulatory skills in relation to academic readiness outcomes. The empirical work that has explored similar relations submits that regulatory competencies indeed play a protective role for children's academic outcomes. Razza, Martin, and Brooks-Gunn (2010) examined the relationship between children's family environment and school readiness among a sample of low-income preschool-aged children. This relation was moderated by children's attention-related behaviors. Specifically, children's ability to focus their attention buffered the negative effects of more adverse home environments characterized by less supportive parenting, on children's receptive vocabulary. Again, this study showed the benefit of

examining the ways individual-level characteristics modulate the effect of ecological factors and school outcomes.

Some studies have also examined children's competencies, such as those reflected in this study (e.g., attention and emotion regulation), as moderating the impact of parenting. Crockenberg (1987) found that children who had difficulty regulating negative emotion and more negative reactivity would display externalizing behaviors as toddlers if they were exposed to highly punitive parenting practices. Conversely, children with similar dispositions whose parents were less punitive exhibited fewer externalizing behaviors. Other work has shown that children who had these difficulties in self-regulation but had parents who provided opportunities for productive activity were less likely to experience externalizing problems (Bradley & Corwyn, 2008). Consistent with these findings, Yaman et al. (2010) found that young children who had difficulty with regulation, in combination with parents who were low on positive parenting, were more aggressive a year later. Children who had difficulty with regulation but received positive parenting, however, were less aggressive than their peers a year later. Finally, studies show that very young children who are characterized by low effortful control and anger proneness, but who have highly responsive mothers, exhibit less externalizing and more compliance over time. Children who were lower in effortful control and experienced more difficulty managing their negative emotions who experienced nonresponsive parenting were higher in externalization. These children were also lower in compliance behaviors (Kochanska & Kim, 2013).

These findings show that children's regulatory competencies can modulate the effect of parenting on children's outcomes. The focus of much of this work, however, was on children's social as opposed to academic outcomes. While these studies show the importance of examining the ways that both parents and children, in tandem, inform important outcomes, they did not

explore how these interactions inform academic school readiness. In the current study, I will fill this gap by examining the ways individual child-level competencies may bolster or challenge how supportive parenting relates to academic readiness. Moreover, while some studies have examined the interaction between children's individual characteristics and parenting, fewer have examined the interactional relations with *supportive* parenting, and even fewer have examined the interactions between children's *competencies* and supportive parenting, predicting academic outcomes. Further, many studies that do examine interactional relationships between parenting and children's competencies are either with very young children (e.g., toddler age), older children (elementary school-aged), higher income children, or adolescents (Ning & Downing, 2012). My work will fill this gap by examining the interactional relationships between supportive parenting and children's self-regulatory competencies as they relate to academic school readiness among low- income Black parents and preschool-aged children. Further, I will add to the literature by testing the interaction of the components of supportive parenting (emotional and behavioral support) with the components of self-regulatory competencies (attention and emotion regulation) to inform academic school readiness. To date, no study has examined supportive parenting practices, the potential interaction with self-regulatory competencies, and academic readiness among low-income Black children and parents. I predict that children's competencies in attention and emotion regulation will both interact with parenting for positive outcomes in math and literacy. While supportive parenting may relate to academic readiness, I predict that children's competencies will bolster those effects given that their individual-level competencies will dictate how they are learning and therefore how the parenting can support that learning.

Understanding such interrelationships between parenting and children's individual-level characteristics as they relate to school outcomes can have important implications for parents.

Parents may be able to tailor their practices on the basis of the competencies of their children for optimal outcomes. More importantly, previous research suggests that self-regulatory competencies may best be thought of not as a set of skills that children need to develop, but as existing competencies that children draw upon in learning situations that may bolster positive relationships between ecological factors and academic outcomes in challenging contexts.

Conclusion

While scholars have taken many approaches to understanding how parenting contributes to children's readiness, the neurobiological framework points to the importance of regulatory skills, as these domain-general competencies serve as the foundation for domain-specific academic skills. Work in this area shows that it is the nature of parent-child interactions that shapes the competencies, but for children and parents living in poverty, the nature of their interaction is presumed to be unsupportive. The neurobiological framework adds a dynamic perspective to the mediational relations between parenting and children's school outcomes in poverty. The model, however, takes a deficit perspective by only explaining mechanisms related to unsupportive parenting, poor self-regulatory skills, and negative school outcomes. Yet, because the framework explains regulatory systems are sensitive to parenting, it is possible that supportive parenting may positively relate to strong regulatory skills and positive academic outcomes, in context of poverty. The current paper sets the stage to address these exciting possibilities empirically.

Indeed, there are children who live in poverty but perform well and even thrive academically. Current models give us insight into the mechanisms that may be at play in shaping

children's academic development, but these models on their own cannot explain positive developmental outcomes in adverse developmental contexts. Drawing from literatures on Black family strengths, parenting, cognitive development, neurobiology, and poverty, I propose that supportive parenting is a missing piece of the equation.

Just as low-income Black parents' strengths have been overlooked in cognitive, neurobiological, and even some developmental literatures, the strengths of children have similarly been ignored. Children, although powerless in many respects, have agency and play an active role in their learning in support of their academic preparedness. While studies disproportionately highlight children's vulnerability to adverse conditions of poverty and inequality, few show that their competencies may have a protective quality, even in adverse contexts. In this regard, I also explore how children's existing self-regulatory competencies modulate the effect of parenting on children's academic outcomes. This ironic yet critical omission of the recognition and examination of children's self-regulatory competencies has resulted in a limited understanding of ways to low-income parents support their children's development and academic success. This paper expands traditional frames of understanding the ways children's self-regulatory competencies and pathways to positive outcomes in the context of poverty.

The Present Study

The present study examines the relationships between supportive parenting, children's self-regulatory competencies, and academic outcomes among Black preschoolers living in poverty. The goal of this work is to explore the extent to which supportive parenting relates to academic readiness through children's self-regulatory competencies among low-income families.

Further, the goal is to also explore the extent to which children's self-regulatory competencies interact with supportive parenting practices to inform academic school readiness outcomes.

Specifically, I ask the following questions:

Research Question 1. To what extent does preschoolers' ability to regulate their attention and emotion mediate the relation between Fostering a Connected and Competent Self and math and literacy outcomes?

Research Question 2. To what extent does preschoolers' ability to regulate their attention and emotion mediate the relation between Behavioral Guidance and Responsiveness and math and literacy outcomes?

Research Question 3. To what extent do preschoolers' self-regulatory competencies of attention and emotion regulation moderate the relation between Fostering Connectedness and math and literacy outcomes?

Research Question 4. To what extent do preschoolers' self-regulatory competencies of attention and emotion regulation moderate the relation between Behavioral Guidance and math and literacy outcomes?

Below I revisit each research question and my accompanying hypotheses.

RQ1. To what extent does preschoolers' ability to regulate their attention and emotion mediate the relation between Fostering a Connected and Competent Self and math and literacy outcomes?

I hypothesize that children's self-regulatory competencies will mediate the relation between Fostering a Connected and Competent Self and math and literacy outcomes. The *Fostering Connectedness* dimension of positive parenting reflects the extent to which parents

support children's emotional, moral and social development (McWayne et al., 2016). These practices also reflect a strong emphasis on cultivating children's relational skills and a sense of connectedness to the larger community. In this regard, Fostering a Connected and Competent Self reflects a range of supportive practices that show the ways low-income parents directly engage with their children around academics (e.g., I help my child with work he or she brings home from school), to the ways they help cultivate healthy and trusting parent –child bonds, develop empathy, the capacity of altruism, kindness, and self-regulation (McWayne et al., 2016).

I predict a direct relation between Fostering a Connected and Competent Self and academic outcomes. Research has established links between many aspects of Fostering a Connected and Competent Self and children's outcomes. For example, studies show that parenting characterized by warmth, sensitivity, and emotional availability has also been linked to children's academic outcomes and cognitive competencies such as the development of language skills, as well as patterns of positive academic performance over time (Downer & Pianta, 2006; Emde & Robinson, 2000; Hirsh-Pasek & Burchinal, 2006). Studies have also linked warmth and nurturance to the development of children's phonological awareness, letter knowledge, and reading performance (Bradley & Caldwell, 1984; Bradley et al., 2001). In addition, Fostering a Connected and Competent Self reflects parents' efforts to help children build social capital and establish positive bonds outside of the home context (McWayne et al., 2016). Children able to form bonds and a sense of connectedness with those outside of the home, like teachers, may be more likely to engage in classroom activities that support their academic development in domains of math and literacy (Guralnick, 2006). Moreover, children who can establish bonds with teachers may also feel comfortable asking for help, seeking support, or turning to the teacher for scaffolding when uncertain or struggling in a task. In this regard, practices of

Fostering a Connected and Competent Self may help children to function in school contexts in ways that support the child's academic development in math and literacy. In addition, I hypothesize that Fostering a Connected and Competent Self will predict academic readiness outcomes in that this dimension of supportive parenting includes items that reflect the way that parents provide their children with academic support (e.g., "I work with my child on numbers and letters") (McWayne et al., 2016). In this regard, the ways that parents are Fostering a Connected and Competent Self may have direct implications for children's academic readiness outcomes.

I also predict that Fostering a Connected and Competent Self will relate to children's self-regulatory competencies. Fostering a Connected and Competent Self reflects, in part, the ways that parents help their children to regulate their negative emotions (e.g., "I help my child to calm down when he or she is upset"). In addition, other components of Fostering a Connected and Competent Self has been linked to self-regulatory outcomes. For example, research shows that nurturance among caregivers promotes the brain maturation of important neurocognitive systems implicated in learning and self-regulation (Farrah et al., 2008). In addition, children's sense of connectedness serves as a precursor to their foundational self-regulatory competencies (McGroder, 2000). Moreover, parents' fostering of children's individuation and self-competence (e.g., autonomy and independence) has also been linked to children's cognitive abilities (Mulvaney, McCartney, Bub, & Marshall, 2006) as well as children's self-regulatory abilities as measured by manifestations of metacognitive talk and task persistence (Neitzel & Stright, 2003). Moreover, children of parents who foster this type of self- competence are better able to communicate with peers, are more assertive, and can better regulate and direct their behavior in school settings (Denham et al., 1991). In this regard, given the host of promotive practices

housed under Fostering a Connected and Competent Self, there are many reasons why this facet of supportive parenting might relate to children's self regulatory competencies.

The ability to self regulate is considered critical to school readiness (Kena et al., 2016). Self-regulatory competencies are domain-general competencies that support all learning, and domain-specific skills (Blair & Raver, 2015; Welsh et al., 2010). Specifically self-regulatory competencies support children's domain specific outcomes in math and literacy (Welsh et al., 2010). In this regard, I predict that the self-regulatory competencies predicted by Fostering a Connected and Competent Self will relate to children's math and literacy outcomes.

RQ2. To what extent does preschoolers' ability to regulate their attention and emotion mediate the relation between Behavioral Guidance and Responsiveness and math and literacy outcomes?

I predict that children's self-regulatory competencies will mediate the relation between Behavioral Guidance and Responsiveness and children's academic readiness outcomes. First, I predict that Behavioral Guidance and Responsiveness will relate to children's academic readiness outcomes. The Behavioral Guidance and Responsiveness dimension of the BPCS reflects the ways that parents guide children's behaviors (McWayne et al., 2016). Specifically, this dimension reflects the ways that parents respond to and prevent children's misbehaviors (McWayne et al., 2016).

There is a dearth of work examining such practices around guiding children's behavior and academic outcomes. Work that has examined discipline-related practices among Black families has focused on black parent's use of corporal punishment as opposed to more nuanced practices such as those reflected in McWayne and colleagues' (2016) measure of positive

parenting practices (e.g., "I prepare my child ahead of time to help him or her behave").

Research has shown that practices related to responding to and preventing children's

misbehaviors, however, relate to children's social outcomes (Webster-Stratton, 1999). Some

research shows that discipline techniques used to respond to children's misbehaviors are

associated with academic achievement (Spera, 2005), however this work has been conducted

primarily among adolescents. Nevertheless, because academic tasks require children's attention

and regulated behavior (Welsh et al., 2010), children who receive more guidance around their

behavior may perform better on academic tasks. I will fill a gap in the literature by exploring this

possibility.

There is a clearer potential for associations, however, between Behavioral Guidance and

Responsive children's self regulatory competencies. Behavioral Guidance and Responsiveness

reflects, in part, the ways that parents may help support their children's capacity for self-

regulation (McWayne et al., 2016). Children's self-regulatory competencies include the ability to

regulate attention and emotion. Parents, by guiding children's behavior and helping children to

guide their own behavior may help equip the child with regulatory strategies that they can model

and draw on in other contexts. In this regard, parent-child interactions and parenting techniques

may influence the kinds of behaviors that children model when they encounter a challenge. I,

therefore, predict a strong positive relation between Behavioral Guidance and Responsiveness

and children's self-regulatory competencies.

Because self-regulatory competencies underlie all facets of learning, I predict that

children's self-regulatory competencies will then predict both math and literacy outcomes.

Specifically, self-regulatory competencies of attention and emotion regulation are domain-

general competencies that support domain specific academic readiness outcomes such as math

and literacy outcomes (Blair & Raver, 2015; Welsh et al., 2010). In this regard, I predict that children's self-regulatory competencies will mediate the relation between Behavioral Guidance and Responsiveness and academic readiness outcomes.

RQ3 and RQ4. To what extent do preschoolers' self-regulatory competencies of attention and emotion regulation moderate the relation between Fostering a Connected and Competent Self and Behavioral Guidance and Responsiveness and math and literacy outcomes?

Neurobiological and ecological frameworks suggest that development occurs as a function of interactions between caregivers and children and is shaped in social contexts (Blair & Raver, 2015; Bronfrenbrener, 1997; Wentzel, 1999). Further, these frameworks suggest the children's characteristics and competencies may influence the strength of parental practices on children's development (Rimm-Kaufman & Pianta, 2000). In line with this transactional understanding of development, I predict that both facets of supportive parenting, Fostering a Connected and Competent-Self and Behavioral Guidance and Responsiveness, will interact with children's regulatory competencies to inform math and literacy readiness.

Because attention and emotion regulation work together as self-regulatory competencies, I predict that each of these competencies of emotion regulation and attention will moderate the facets of supportive parenting on math and literacy outcomes. Given that Fostering a Connected and Competent Self includes items of emotional support and nurturance, I predict a significant interaction between this dimension of supportive parenting and children's emotion regulation abilities predicting academic outcomes. Although self-regulatory competencies theoretically should contribute to both math and literacy outcomes (Welsh et al., 2010), I predict that the

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interaction will strongly predict math scores. Young children may find math challenging (relative to other tasks) as math requires various steps and principles and rules that they must master. I predict that if children are high in emotion regulation competencies, the effect of parenting on math will be positive in that children will have support while exercising the regulation of frustrations that my arise in the process of learning something novel and challenging.

I also predict that Behavioral Guidance and Responsiveness and children's self-regulatory competencies will interact to inform children's academic readiness outcomes. I predict that, regardless of their level of self-regulatory competencies (e.g., both attentional and emotional regulation abilities), children who have parents supporting and guiding their behavior in ways that model regulation will have better academic readiness outcomes. I hypothesize the positive association between Behavioral Guidance and Responsiveness, children's self-regulation, and children's academic outcomes will be stronger among children with stronger attention and emotion-regulation competencies.

Chapter 3:
Methodology

The current study utilizes secondary data from the Parents Enhancing Academic Readiness through Lessons about Strengths (PEARLS) data set (McWayne et al., 2016). In this 3- year study, McWayne et al. (2016) used a within-group exploratory sequential mixed-methods approach (Creswell & Plano Clark, 2011; Fetters, Curry, & Creswell, 2013) to examine positive parenting practices among low-income African American parents and caregivers. Interview, focus-group, observational, and survey data were collected from African American adults who self-identified as parents or primary caregivers of preschool aged children enrolled in Head Start programs in New York City. Interview and focus group data were used to inform the development and validation of the Black Parenting Strengths in Context Scale (BPSC; McWayne et al., 2016). The PEARLS data set includes data on caregiver's positive parenting as measured by the BPSC scale, caregiver's social intelligence, perceived social support, and data on children's early learning and academic and social-emotional readiness.

The current study examines data from caregiver's responses on the BPSC scale. It also examines preschool- aged children's learning behaviors as measured by the Preschoolers Learning Behaviors Scale (PLBS; McDermott et al., 2002) and preschooler's academic readiness as measured by the Learning Express (LE; McDermott et al., 2009).

Participants

Six hundred and sixty six Head Start caregivers participated in the study. Sixty point nine percent (60.9%) of participants identified as African American and 39.1% identified as

Caribbean. Caregivers' responded to a form in which they indicated demographic information. Caregivers who identified themselves as African American were born in the US, and those who identified themselves as Caribbean were immigrants to the US. Caribbean participants reported to have lived in the US from 1 month to 42 years ($M = 16.1$ years, $SD = 9.4$). Participants in this study were recruited from nine Head Start programs across New York City. The education levels of caregivers varied, with approximately half of the participants having some college or vocational education and roughly half of the participants having graduated from high school or less. Forty-six percent of the African American and 35.2% of the Caribbean caregivers reported that they were unemployed at the time of data collection. The average age of children across the two ethnic groups was 47.8 months ($SD = 11.4$). Among children who identified as African American, 49.4% were female. Forty-eight point five percent of Caribbean children were girls. In the current study, a subset of this sample was analyzed, specifically, 151 parents and children with data across study variables. Demographic properties of the original sample and the study sample generally did not differ. There were slightly more immigrant caregivers than those born in the U.S. in the study sample. In the original sample, there were slightly more parents born in the U.S. Nevertheless, in both samples, approximately half of the sample was born in the US and half of the sample was born outside of the U.S. In addition, the study sample included more parents as primary caregivers and fewer grandparents, foster parents, and aunts and uncles relative to the original sample. See Appendix A for demographic information on the larger, original sample as well as the current study sample.

Procedure

Fourteen Head Start centers agreed to participate in the study. The New York Administration for Children's Head Start programs identified these Head Start centers and each

served 75% or more Black children. Participants in this study were recruited via flyers posted at Head Start programs and through presentations given at each site by members of the research team. Once participants provided researchers with consent forms, they completed the *Black Parenting Strengths in Context* (BPSC) scale (McWayne et al., 2016); *Tromso Social Intelligence Scale* (TSIS) (Silvera, Martinussen, & Dahl, 2001), and the *Family Support Scale* (FSS) (Dunst, Jenkin, & Trivette, 1984). Participants completed the measures individually or in groups at their respective Head Start centers. During this time, trained research assistants were on-site to address any questions that caregivers had regarding measures and the project at-large. For a small number of participating children, if the primary caregiver was not the person who dropped off or picked up the child at the center, then packets with measures were sent to their homes. Participation rates by eligible families varied from 60% to 90% ($M = 76.9\%$) at each site. Caregivers received a $20 gift card for their participation.

In addition to parent data, an additional subsample of 245 children was randomly selected for purposes of further external validity of the profiles. Teachers completed a demographic questionnaire about themselves and were asked to complete a measure of children's social-emotional skills, the Penn Peer Interactive Play Scale (PIPPS) (McWayne et al., 2016).

In total, researchers, which included the primary investigators and graduate students, conducted 16 focus groups in 9 programs through New York City. Data collection began in the summer of 2008 and ended in the spring of 2009. During this time, graduate students implemented the Learning Express assessments of academic skills. Teachers, during this time period collected data on children's learning behaviors.

Measures

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The Black Parenting Strengths in Context Scale (BPSC; McWayne et al., 2016) was used to assess supportive parenting practices in the current study. McWayne et al. (2016) developed the BPSC scale in response to existing measures of parenting that fail to capture the range of positive parenting practices among Black parents and caregivers. In contrast to earlier measures that have been used to characterize Black parenting practices as more punitive and less functional than those of upper and middle class parents, the BPSC provides a more culturally and contextually grounded frame from which to understand the ways the Black parents and caregivers engage with, socialize, and participate in their children's development.

The BPSC measure was derived from dialogues with parents in which parents defined and discussed key facets of importance regarding parenting young Black children in the context of poverty. Parent and caregiver responses and themes were used in the framing and the development of scale items. In line with Jacobson's (2004) conceptualizations of "good" parenting, McWayne et al. (2016) asked parents to reflect on the ways social factors such as race, gender and living in an urban setting inform what it means to be an effective or "good parent".

In order to develop items for the BPSC scale, McWayne et al. (2016) first conducted in-depth semi-structured interviews with individual parents and caregivers (N=33) as well as 10 focus groups (n= 4 female- only focus groups; n = 4 mixed gender groups, n =2 male-only groups; total N = 53) at Head Start sites throughout New York City. All participants identified as Black caregivers or parents of children who were enrolled in Head Start programs. Transcripts were content analyzed to produce an initial set of items for the measure. Information regarding parents' views of positive parenting then became the content of items constituting the paper and pencil measure of parenting strengths (McWayne et al., 2016).

Finally, researchers conducted a follow-up series of focus groups in order to refine the measure and assess the meaningfulness and utility of the items generated from the first round of focus-group interviews. During this follow-up process, McWayne et al. (2016) used a semi-structured interview design to conduct a second series of focus groups ("member checking"). Six focus groups were conducted. Each of these groups included 5-7 participants each. Researchers then conducted content analyses based on the focus group interviews. The codes from the focus group were then checked against the original 150 survey items. Information was then verified and reviewed through a procedure of expert review and then member checking groups. Participants used a Q-sort procedure to organize items into subjectively meaningful thematic categories. Participants made comments about wording of the items, response format, items that they would likely be hesitant to answer, as well as suggestions for additional items that reflected domains for parenting competence that were not present in the current list of items. Items rated low by parents were modified.

The 72-item BPSC scale allowed the researchers to identify conceptualizations of positive parenting among urban-residing, low-income Black families. Results of the factor analysis resulted in a five-factor solution pointing to five dimensions of positive parenting. Items were scored on a four-point scale (Never, Sometimes, Often, and Almost Always).

The first subscale, *Fostering a Connected and Competent Self* ($\alpha = 0.91$) contains 25 items that reflect parents' and caregivers' attempts to create a safe nurturing environment for their children by teaching, guiding and caring for children. "I encourage my child not to be afraid and to talk about things with me" and "I show my child excitement when he/she learns something new" are two examples of items on this scale. The second dimension, *Black Cultural Pride* ($\alpha = 0.85$), is a four-item subscale that reflects parent and caregiver efforts to instill in

children a sense of pride in the their culture and in being Black. Sample items include "I teach my child about his/her culture" and "I talk with my child about being proud to be Black." The third dimension of the BPSC scale is *Behavioral Guidance and Responsiveness* (α = 0.62). This three-item subscale captures parent and caregiver's efforts to thwart and respond to children's misbehavior. "I take something away that my child likes when he/she misbehaves" and "I prepare my child ahead of time to help him/her behave" are sample item of this subscale. The *Religious/Spiritual Practices and Values* (α = 0.78) is the fourth subscale of the BPSC scale and consists of four items. This dimension reflects parent's socialization efforts around religious and spiritual practices and values. Sample items include " I pray with my child" and "I take my child to religious services". The fifth and final subscale of the BPSC scale is *Involvement at School* (α = 0.61). This dimension includes three items that reflect family's' participation in events, activities and meetings in the school context. Example items include "I volunteer at my child's school" and "I attend meetings, events and workshops at my child's school." In the current study, I will use *Fostering a Connected and Competent Self* (α = 0.91) and the *Behavioral Guidance and Responsiveness* (α = 0.62) as two measures of supportive parenting.

Self-Regulatory Competencies: Attention and Emotion Regulation

Preschooler's self-regulatory competencies were measured using the Preschool Learning Behaviors Scale (PLBS; McDermott et al., 2002). In general, content of the PLBS focuses on children's "attentiveness, responses to novelty and correction, observed problem solving strategy, flexibility, reflectivity, initiative, self-direction, and cooperative learning" (McDermott et al., 2002, p.355). The PLBS is similar to the Learning Behaviors Scale (LBS; McDermott, 1999); in that it reflects nuanced behaviors of children in learning contexts, without the bias of

teacher inference. Wording of the PLBS, however, was altered in order to reflect the less formal learning environments where the focus is on "activities," for example, as opposed to "tasks."

While the PLBS was originally validated on two national samples, further analyses revealed that scale reliability and structure generalized to low-income, urban-residing, preschool aged children. Researchers established convergent and divergent validity for the scale by correlating dimensions of the PLBS with factors of the Penn Interactive Peer Play Scale (Fantuzzo & Hampton, 2000), Differential Abilities Scales (Elliott, 1990), and Social Skills Rating System (Gresham & Elliott, 1990).

The PLBS is a 27- item scale. Each item represents a specific learning behavior such as "Easily distracted or seeks distraction", "Shows a lively interest in the activities," "Unwilling to be helped in difficulty," and "Carries out activities according to own ideas rather than in the accepted way"). The PLBS has three subscales including Attention/Persistence α =.83, Attitude Towards Learning α =.75, and Competence Motivation α =.85. Attention /Persistence is 9 items, Attitude Towards Learning is 7 items, and Competence motivation is 11 items. Attention/Persistence reflects a child's ability to stay focused and persist during classroom activities. Attitude Towards Learning reflects a child's ability to modulate negative emotions and work effectively with peers or teachers. The Competence Motivation subscale reflects children's motivation and eagerness to engage in classroom activities. Scores on each item range from 1 to 3 or *Most often applies (=1)*, *Sometimes applies (=2)*, and *Doesn't apply (=3).* Scores are derived from teacher reports of children's typical behavior over the past 2 months. In order to reduce response sets, the valence (positive or negative) of item wording is varied. In the current study, I will use the Attention/Persistence subscale as a measure of children's attention and the

Attitude Towards Learning subscale as a measure of children's emotion regulation. No data was available in the current data set for Competence Motivation.

Academic School Readiness

The Learning Express (LE; McDermott et al., 2009) was used to assess children's academic school readiness. The Learning Express is an individually administered, multiform, multi-scale battery of assessments designed to test 3 to 5.5 years old children's cognitive growth in the areas of alphabet knowledge, vocabulary, listening comprehension and mathematics. The test has been criterion referenced to national and regional Head Start standards in these content areas, with secondary referencing to the nations' principal (norm referenced tests) NRTs.

The LE contains 325 items distributed over two equated forms of 195 items in order to reduce practice effects. The measure contains 4 subscales including Alphabet Knowledge, Vocabulary, Listening Comprehension, and Mathematics. I created a composite variable from "Alphabet Knowledge," "Vocabulary," and "Listening Comprehension" representing Literacy. I also used the Mathematics subscale as a measure of children's math outcomes.

A total of 56 distinct sub-skills are presented in the measure. Each sub-skill differs in complexity and content. Children are able to demonstrate their proficiency in each skill through a variety of modalities including vocal expression, pointing, and object manipulation. Sample items of the subscale Alphabet Knowledge include "names uppercase letters out loud" and "distinguishes lower case letter from shape (point)." Sample items from the vocabulary subscale include "Identification of common nouns- Expressive" and "Recognition of verbs- receptive." Sample items from the subscale listening comprehension include "Recognition of sequence in a story including concurrent, future, and past events," and "Recognition of illustrations that does

not match meaning of statement." Finally, sample item of the mathematics subscale include "shape identification" and "Counting backwards" (McDermott et al., 2009).

Subscales of the LE include Alphabet Knowledge, α =.98 , Vocabulary, α =.96, Listening Comprehension α = .93, and Mathematics, α =.96. Concurrent validity was supported through relationships with the NRTs and teachers' assessments of children's literacy and numeracy (McDermott et al., 2009). For the current study, a composite variable of Alphabet Knowledge, Vocabulary, and Listening Comprehension was created as a measure of children's Literacy skills.

To assess the child, a flipbook binder of item stimuli was used. The flipbook was placed on the table made to face outward toward the child. As each successive item was shown to the child, the child was asked a question by the assessor. The questions were printed on the opposite side of the page facing the child. The child would then answer the question by pointing, manipulating objects, or speaking the answer. If the child made no response or gave an answer that was a non-sequitur, the assessor would tell the child that it is okay to make a guess, and then move on to the next question.

A trained research assistant administered the Learning Express battery to each individual child during a single session. Ordinarily, each session took 20 minutes. Session lasted no longer than 30 minutes. Private locations were identified in each Head Start center for individual testing by researchers. Children with special needs were identified prior to the assessment. Standardized questions were also used to determine if children spoke English as a primary or secondary language. In addition, the health status of the child was reported by the teacher at testing. In the current study I will use children's total scores on the literacy composite variable and the math subscales.

Sociodemographic Variables

Parent Age.

Parent age was determined by the caregiver's report of their age in years.

Parent Sex.

Caregivers reported their gender as "Male" (1) or "Female" (2).

Education.

Education was determined by caregivers' report of their highest level of education. The categories included "No formal schooling" (1), "Completed elementary school" (2), "Completed middle school" (3), "Some high school" (4), "High school diploma or GED" (5), "Some college, vocational training or 2 year college degree" (6), "Bachelor's degree" (7), "Post-college graduate or professional school (8)."

Immigrant Status.

Caregivers indicated whether or not they were born in the United States by selecting "Yes" (1), or "No" (2).

Additional Childcare.

Caregivers indicated whether or not anyone else helps to take care of the child by selecting "Yes" (1) or "No" (2).

Child Sex.

Caregivers indicated whether the child was "Male" (1) or "Female" (2).

Data Analysis

Preliminary Analyses

Prior to primary analyses of the data, item distribution of all study variables was examined and variables were screened for skew, kurtosis, for the presence of outliers, and for normality. In cases where the data violated assumptions of normality, I used appropriate transformations to induce linearity (Kline, 2005). In the multivariate analyses, collinearity diagnostics were conducted to assess whether data violated assumptions of multicollinearity (Field, 2005). Scatter diagrams of residuals, partial plots, and normal probability plots of residuals were constructed to test assumptions (Field, 2005).

Missing Data Analyses

Missing data were explored by measure. Supportive parenting measures of "Fostering a Connected and Competent Self" and "Behavioral Guidance and Responsiveness" were each missing the same amount of data. Children's self-regulation measure of "Attention" had three more missing cases than "Emotion Regulation", and "Literacy" was missing one less case than "Math". Missing data were also probed to examine potential significant differences between those missing data and those without missing data on key indicators of caregiver's age, immigration status, and education level. Results of t- tests comparing those with data to those without data revealed no significant differences on indicators of education or immigration status. There were significant differences, however, among those with data and those without data on the indicator of age. Older parents seemed to have less missing data. Missing data in preliminary analyses were eliminated using listwise deletion in SPSS. Analyses conducted using the PROCESS macro v2.12 for SPSS by Hayes (2013) used the listwise deletion of missing data procedure as a default.

Power Analysis.

A priori sample size calculator for regression models (Soper, 2016) revealed that a minimum sample size of 67 was needed in order to detect a medium effect (.15) at a statistical power level of .80, with 2 predictor variables (and 6 covariates) at a probability level of .05. The sample of 151 ensures that there is sufficient power to conduct the analyses for this study. With a sample size of 151, I also had sufficient power to detect small interaction effects (.02) at a statistical level of .80 at a probability level of .05.

Primary Analyses

Sociodemographic Variables

Analyses were conducted in order to explore the extent to which parents may vary in supportive parenting techniques. First, I explored correlational relationships between sociodemographic variables and dependent variables to identify significant associations. I then explored relationships between sociodemographic variables and "Fostering a Connected and Competent Self" and "Behavioral Guidance and Responsiveness."

Mediation and Moderation

To test mediating and moderating relations, I used the PROCESS macro v2.12 for SPSS (Hayes, 2013). PROCESS uses an ordinary least squares or logistic regression-based path analytic framework in order to estimate both direct effects and the mediational role of a single or multiple variables, with 10,000 bootstraps. PROCESS does not account for correlations between mediators. In mediation, the effect of predictor variables (X) on dependent variables (Y) occur completely, or in part through the mediating variable (M). PROCESS provides estimates of the direct path from X to Y, indirect paths from X to M and M to Y, as well as the total effect (i.e., the combination of these indirect effects with the direct effects) (Hayes, 2013). PROCESS was used, as it is a powerful test of such relations, in support of the current theoretical framework.

Specifically, in line with Blair and Raver's (2015) framework explaining the development of self-regulation in the context of poverty, in the current study, I assessed the extent to which supportive parenting related to children's academic readiness outcomes through children's self-regulation. PROCESS first allows exploration of the direct relation between supportive parenting variables and children's self-regulatory outcomes. It then provides the information regarding the relation between supportive parenting and children's self –regulation, and self-regulation and children's outcomes in math and literacy. Below is the conceptual diagram of the model that PROCESS uses for tests of these mediational relations.
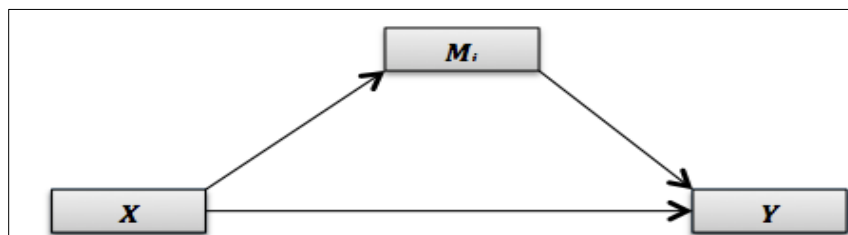
In addition, the PROCESS macro also allows one to test moderation with up to three-way interactions. In the current study, in line with ecological frameworks (Bronfenbrenner, 1997; Wentzel, 1999) and frameworks of resilience (Masten & Garmezy, 1985), I explored the extent to which children's self-regulatory competencies moderate the relation between supportive parenting practices and children's academic readiness outcomes. PROCESS was used in that it allowed me to test the extent to which children's individual differences (M) changed the strength of the relation between parenting practices and child outcomes. Specifically, PROCESS first provides information regarding the direct relations between supportive parenting variables and children's school readiness outcomes. PROCESS then provides information regarding the interaction between supportive parenting variables and moderating variables of self-regulation predicting children's math and literacy outcomes. Another benefit of using PROCESS is that it

implements Bootstrap and Monte Carlo confidence intervals which allows one to make inferences about effect size, and provides ways to understand the nature of the interactions. Below is the conceptual diagram of the model that PROCESS uses for tests of moderation.
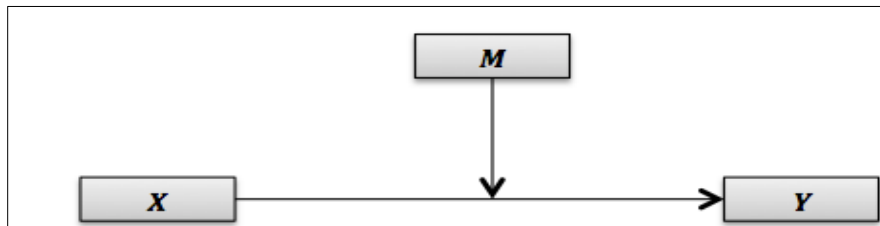
Note: Process also allows one to test mediated moderation. Mediated moderation is also a way of testing indirect relations between the independent and dependent variables through mediating and moderating variables. Mediated moderation can occur only when there is existing moderation. That is, when the relations between predictor variables and the outcome variables is moderated by a third variable. Mediated moderation, then, tests paths from the independent variable to the mediator to the outcome, but accounts for possible moderation in the path from the mediator to the outcome variable (Hayes, 2013). I will test moderation and mediation in two steps as doing so better reflects the tenets of the theoretical frameworks explored in this study.

Chapter 4:
Results

Preliminary Analyses

Results of preliminary analyses revealed that the dependent variable, "Literacy", was left-skewed. A square root transformation was successfully used to normalize the distribution of the data (Osborne, 2005). I will refer to the transformed version of Literacy throughout the remainder of the study. Both variables of "Emotion Regulation" and "Attention" had extreme low values. These variables, because they contained outliers, were Winsorized in order to bring in the outliers. Unlike truncating or trimming techniques that remove outliers and extreme values from the data, Winsorization replaces values with a certain percentile cut off. As a result the extreme values are made less influential. This technique assumes that those who were low were not different from other students who scored low. If one believes that the outliers do not belong to the distribution then trimming, that is, removing the outliers can be a viable technique. If the outliers are presumed to indeed be part of the distribution, Winsorizing allows for the scores to be accounted for but and helps the distribution to be less skewed. I chose to Winsorize the outliers as opposed to remove them given that the scores do reflect part of the distribution and children who were very low in literacy (Hastings, Mosteller, Tukey, & Winsor, 1947). All continuous predictor variables were also mean centered. Hayes (2102) explains that doing so guarantees that the variables that comprise the interaction will be interpretable given the range of data.

Correlations between independent variables were examined in order to test for collinearity between the predictor variables. Associations between predictor and outcome

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variables were also examined (see Appendix B). There was a significant, moderate association between the two parenting predictor variables, "Fostering a Connected and Competent Self" and "Behavioral Guidance and Responsiveness" $r = .502, p < .001$. There was also a significant association between mediating variables "Emotion Regulation" and "Attention" $r = .464, p < .001$.

There was a significant association between dependent variables of "Literacy" and "Math", $r = .796, p < .001$. Theoretically, these outcome variables, although both domain specific academic outcomes, should be tested independently as math and literacy skills; they are distinct skills that may enlist different competencies (Welsh et al., 2010).

Tolerance rates for the predictors "Fostering a Connected and Competent Self" and "Behavioral Guidance and Responsiveness" were .748, with a VIF of 1.336. Similarly, tolerance rates for "Emotion Regulation" and "Attention" were .919, with a VIF of 1.089. Tolerance values below .2 indicate that there may be issues with collinearity between variables (Field, 2005). Field (2005) also asserts that a tolerance value below .1 is a more serious problem and violation of necessary assumptions of independence. Collinearity diagnostics revealed no evidence of collinearity.

Sociodemographic Variables

Correlation analyses were conducted in order to examine the relation between sociodemographic variables and Fostering a Connected and Competent Self and Behavioral Guidance and Responsiveness. Research suggests that parenting practices may differ based on parent's age, gender, immigration status, and education level, as well as the sex of the child and whether the child has additional childcare (Brown, Craig, & Halberstadt, 2015; Roopnarine & Hossain, 2013). Results of correlation analyses revealed that there were no significant

associations between the two parenting indices and parent's gender, immigration status, the child's gender, or education level, or having additional childcare. There were significant association between Behavioral Guidance and Responsiveness and the caregiver's age, $r = .200$, $p = .003$. As caregivers get older, they engage in more practices of Behavioral Guidance and Responsiveness.

Primary Analyses

Mediation

Using model number 4 of the PROCESS Macro v2.12 with 10,000 boostraps (Hayes, 2013), I ran 4 mediation models, each with self-regulation variables (e.g., "Attention" and "Emotion Regulation") entered simultaneously as mediators.[1] Although model number 4 allows for multiple mediators to be entered into the model, it provides tests for each mediator separately. Model 1a tested mediation in the relation between "Fostering a Connected and Competent Self" and "Math" with "Attention" as the mediator. Model 1b tested mediation in the relation between Fostering a Connected and Competent Self" and "Math" with "Emotion Regulation" as the mediator. Model 2a tested mediation in the relation between "Fostering a Connected and Competent Self" and "Literacy" with "Attention as the mediating variable. Finally, model 2b tested "Emotion Regulation" as a mediator in the relation between "Fostering a Connected and Competent Self" and Literacy. The caregiver's age, sex, education, immigration status, the child's sex, and additional childcare were entered as controls in each of the models. See Figure 4.

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[1] Results presented throughout this chapter reflect the unstandardized regression coefficients. *Results also reflect the*

Figure 4. Diagram of Mediation Models 1 and 2 with Fostering a Connected and Competent Self.
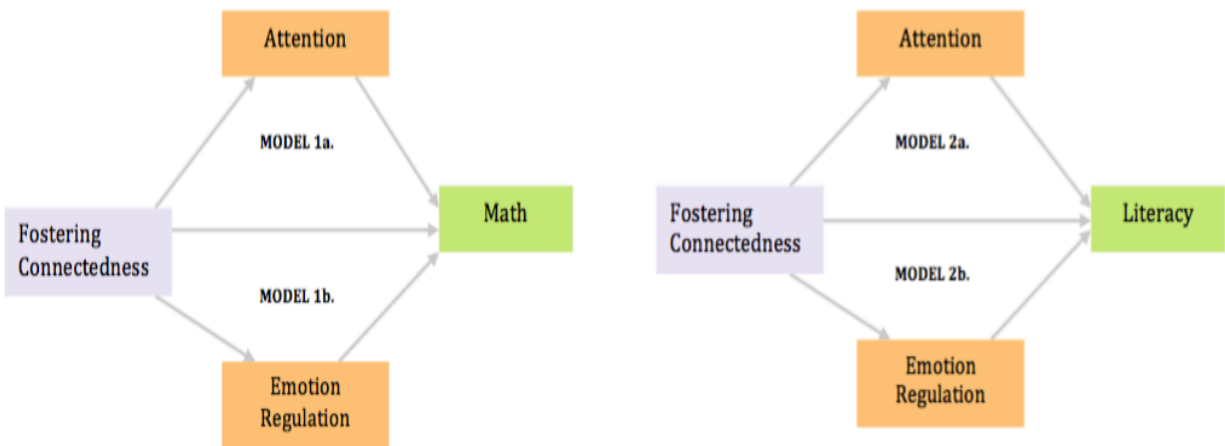
Model 3a tested the relation between "Behavioral Guidance" and "Math" with "Attention and the mediator. Model 3b tested the relation between "Behavioral Guidance and Responsiveness" and "Math" with "Emotion Regulation" and the mediator. Model 4a tested the relation between Behavioral Guidance and Responsiveness and Literacy, with "Attention" as the mediating variable. Finally, model 4b tested "Emotion Regulation" as mediating the relation between Behavioral Guidance Responsiveness "Literacy." See Figure 5.

Figure 5. Diagram of Mediation Models 3 and 4 with Behavioral Guidance and Responsiveness.
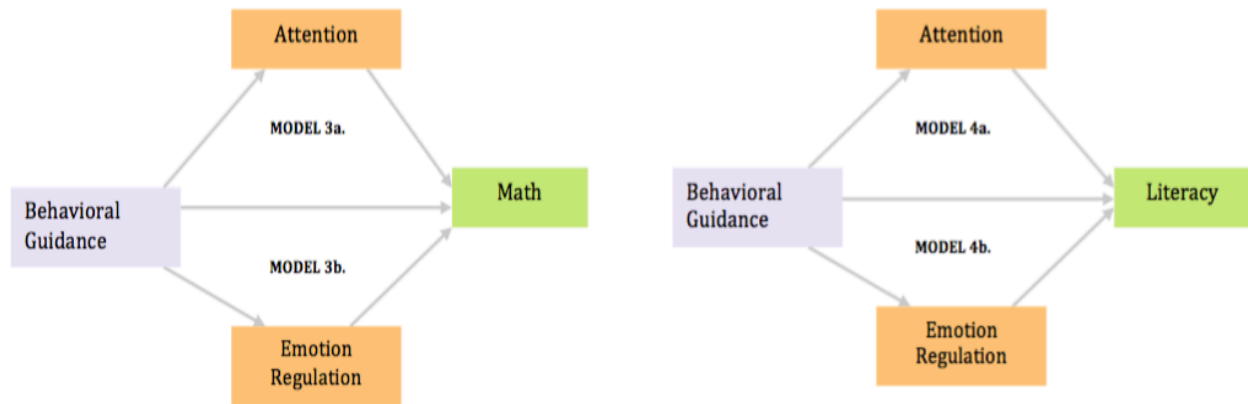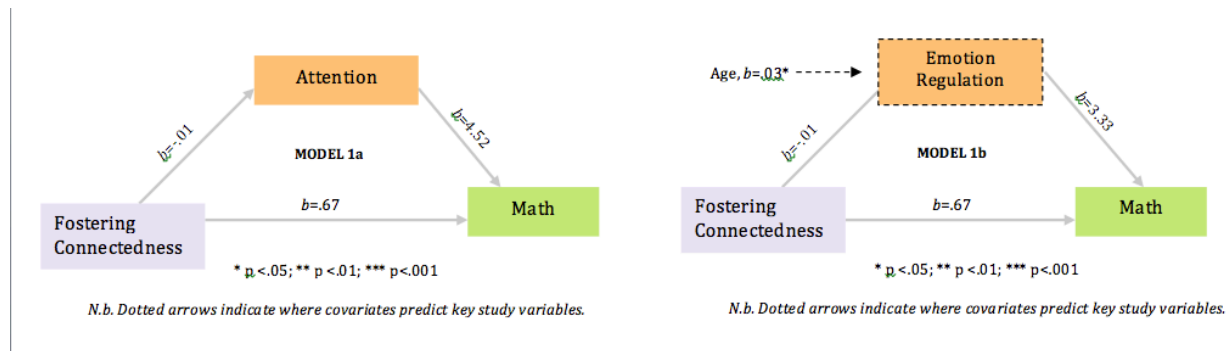
Results of Mediation Analyses

Fostering a Connected and Competent Self and Math.

Results revealed no support for mediational relations between "Fostering a Connected and Competent Self", "Attention" and "Emotion Regulation", and "Math" while controlling for caregiver's age, sex, education level, immigration status, additional childcare, and the sex of the child, in Model 1a and 1b as evidenced by the 95% confidence interval containing zero, CI [-.35, .09]. Specifically, results revealed that there was no direct relation between "Fostering a Connected and Competent Self" and "Math," $b = .67$, 95% CI [-.26, 1.61], $t(148)= 1.41$, $p =.161$ Neither "Attention" CI [-.27, .05] nor "Emotion Regulation" CI [-.29, .04] significantly mediated the relationship between "Fostering a Connected and Competent Self" and "Math". Results revealed a main effect of "Age" on "Emotion Regulation" $b = .03$, 95% CI [.00, .06], $t(148)= 2.14$, $p =.034$. See Figure 6 for an overview of significant results.

**Figure 6. Diagram Summary of Results for Model 1a and 1b**

Fostering a Connected and Competent Self and Literacy.

In Models 2a and 2b I tested the indirect relations between "Fostering a Connected and Competent Self", "Emotion Regulation" and "Attention", and "Literacy" while controlling for caregiver's age, sex, education level, immigration status, additional childcare, and the sex of the child. Again, results revealed no support for mediational relations between variables in the overall model as evidenced by the 95% confidence interval containing zero, CI [.00, .00]. Results revealed that neither "Attention" CI [.00, .00] nor "Emotion Regulation" CI [.00, .00] significantly mediated the relation between "Fostering a Connected and Competent Self" and "Literacy". There was no direct relation between "Fostering a Connected and Competent Self" and "Literacy" $b = .001$, 95% CI [-.0008, .0028], $t(149)= 1.11$, $p =.267$. There was a main effect of "Age" on "Emotion Regulation", $b = .03$, 95% CI [.00, .07], $t(149)= 2.12$, $p =.036$. See Figure 7.

Figure 7. Diagram Summary of Results for Model 2a and 2b
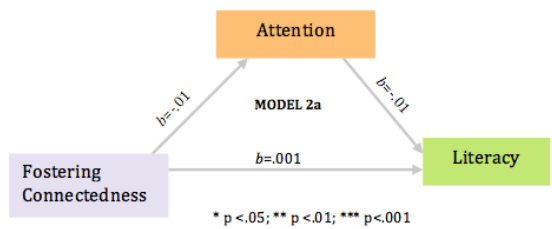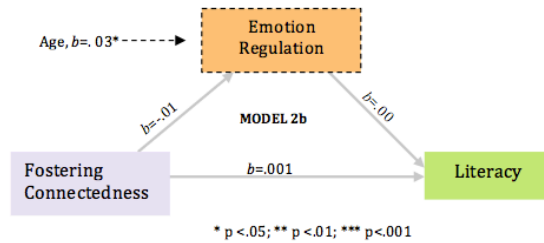
Behavioral Guidance and Responsiveness and Math.

Overall, in models 3a and 3b, there were no significant mediational relations between "Behavioral Guidance and Responsiveness", "Attention" and "Emotion Regulation", and "Math" while controlling for caregiver's age, sex, education level, immigration status, additional childcare, and the sex of the child, evidenced by the 95% confidence interval containing zero, CI [-.19, .19]. Results showed that the relation between "Behavioral Guidance and Responsiveness" and "Math" was not mediated by "Attention" CI [-.17, .07], or "Emotion Regulation" CI [-.15, .12]. There was no direct relation between "Behavioral Guidance and Responsiveness" and "Math" b = .168, 95% CI [-.70, 1.03], $t(148)$= .383, p =.703.There was a main effect of "Age" on "Emotion Regulation", b = .03, 95% CI [.00, .07], $t(148)$= 2.14, p =.034. See Figure 8.

Figure 8. Diagram Summary of Results for Model 3a and 3b
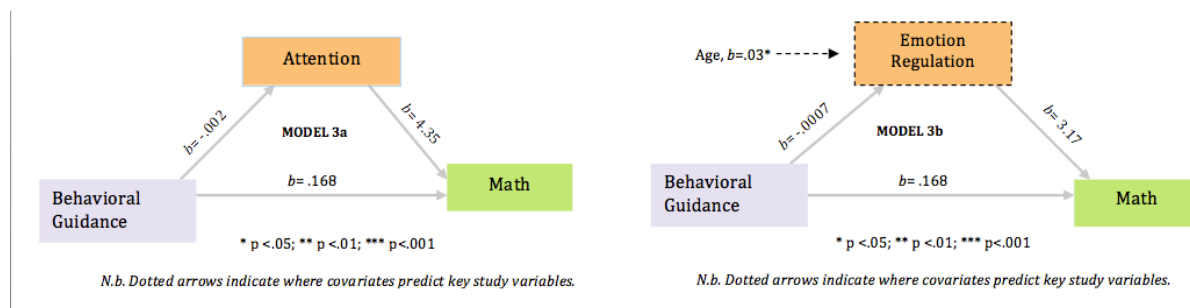
Behavioral Guidance and Responsiveness and Literacy.

Finally, there were so significant mediational relations in the models 4a and 4b exploring "Behavioral Guidance and Responsiveness," "Attention" and "Emotion Regulation," and "Literacy" while controlling for caregiver's age, sex, education level, immigration status, additional childcare, and the sex of the child, evidenced by the 95% confidence interval containing zero, CI [-.0004, .00]. There was no direct relation between "Behavioral Guidance and Responsiveness" and "Literacy" $b = .002$, 95% CI [-.0001, .003], $t(148)= 1.89$, $p =.061$. There was a main effect of "Age" on "Emotion Regulation" $b = .03$, 95% CI [.00, .07], $t(149)= 2.12$, $p =.036$. See Figure 9.

Figure 9. Diagram Summary of Results for Model 4a and 4b
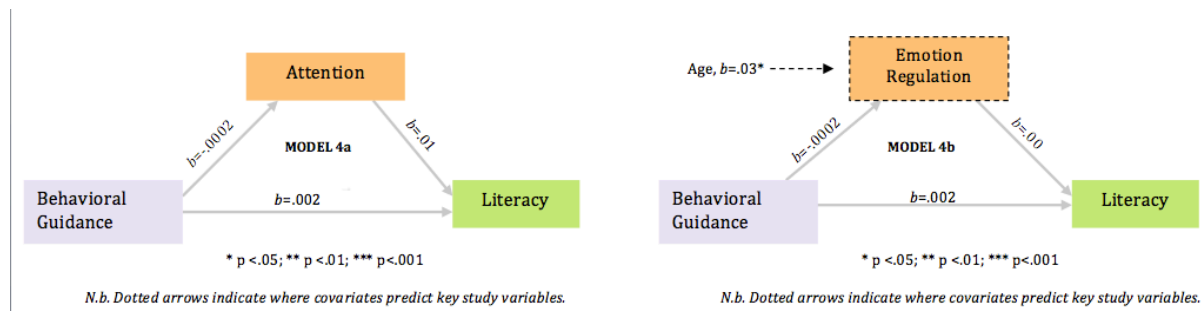
Full results of all mediation analyses can be found in Appendix C.

Moderation

In line with developmental-ecological frameworks and resilience frameworks (e.g., Wentzel, 1999; Werner, 1997), using the PROCESS Macro v2.12, model number 1 with 10,000 bootstraps Hayes (2013), I tested 8 moderation models, in order to explore interactions between each supportive parenting variable (e.g., "Fostering a Connected and Competent Self" and "Behavioral Guidance and Responsiveness") and children's self-regulatory competencies (e.g., "Attention" and "Emotion Regulation") predicting school readiness outcomes of "Math" and

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"Literacy". Each model is controlled for caregiver's age, sex, education level, immigration status, additional childcare, and the sex of the child. See Figure 10 below for an overview of the 8 moderation models tested.

Figure 10. Diagram of Moderation Models.
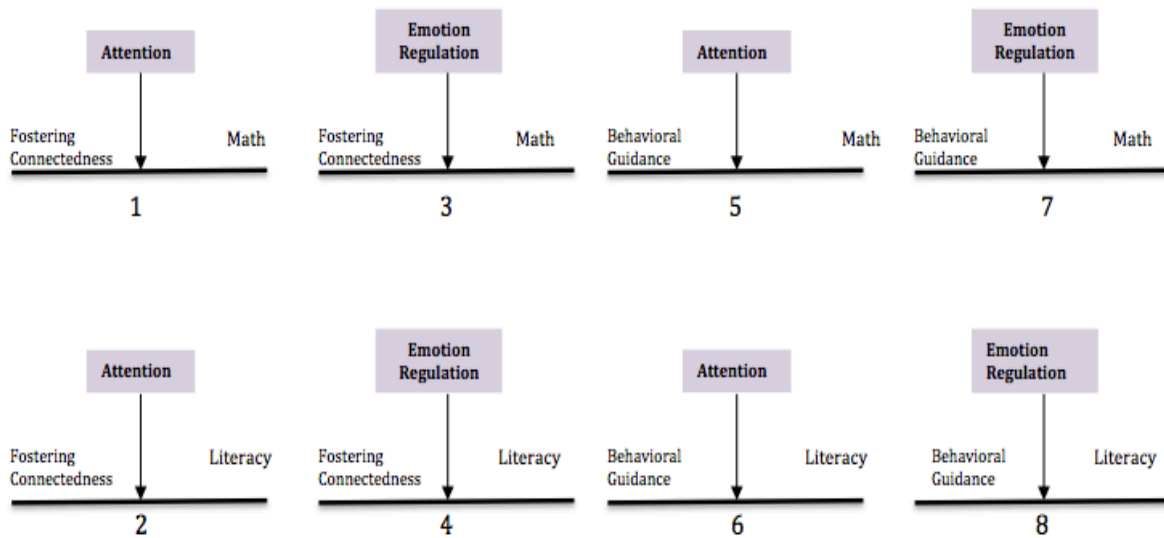
Fostering a Connected and Competent Self, Attention, and Math (Model 1).

There were no significant interactions between "Attention" and "Fostering a Connected and Competent Self " predicting Math, b = -.37, 95% CI [-1.12, .38], $t(148)$= -.98, p =.327. There were no main effects of "Fostering a Connected and Competent Self" on "Math".

Fostering a Connected and Competent Self, Attention, and Literacy (Model 2).

 "Attention" did not moderate the relation between and "Fostering a Connected and Competent Self" and "Literacy," b = -.0003, 95% CI [-.002, .00], $t(149)$= -.41, p =.680. Results revealed no main effects of "Fostering a Connected and Competent Self" on "Literacy".

Fostering a Connected and Competent Self, Emotion Regulation, and Math (Model 3).

There were no significant interactions between "Emotion Regulation" and "Fostering a Connected and Competent Self" predicting "Math", b = .07, 95% CI [-.57, .71], $t(148)$= .21, p

=.831. Again, results revealed no main effects of "Fostering a Connected and Competent Self" on "Math".

Fostering a Connected and Competent Self, Emotion Regulation, and Literacy (Model 4).

"Emotion Regulation" did not moderate the relation between "Fostering a Connected and Competent Self" and "Literacy", b = .29, 95% CI [-.001, .00], t(149)= 1.19, p =.237. Results revealed that there were no significant main effects of "Fostering a Connected and Competent Self" on Literacy.

Behavioral Guidance and Responsiveness, Attention, and Math (Model 5).

There were no significant interactions between "Attention" and "Behavioral Guidance and Responsiveness" predicting Math, b = .16, 95% CI [-.56, .88], t(148)= .44, p =.663. Results, however, revealed a main effect of "Age" on "Math", b = 1.06, 95% CI [.00, 2.12], t(148)= 1.98, p =.049.

Behavioral Guidance and Responsiveness, Attention, and Literacy (Model 6).

There were no significant interactions between "Attention" and "Behavioral Guidance and Responsiveness" predicting "Literacy" b = .00, 95% CI [-.0003, .0002], t(149)= 1.59, p =.114. Results revealed no main effects of "Behavioral Guidance and Responsiveness" on "Literacy".

Behavioral Guidance and Responsiveness, Emotion Regulation, and Math (Model 7).

Results revealed that "Emotion Regulation" did not moderate the relation between "Behavioral Guidance and Responsiveness" and "Math", b = .10, 95% CI [-.41, .61], t(148)= .39, p =.699. There were no significant main effects of "Behavioral Guidance and Responsiveness" on "Math".

Behavioral Guidance and Responsiveness, Emotion Regulation, and Literacy (Model 8).

Results revealed a significant interaction between "Behavioral Guidance" and "Emotion Regulation" predicting "Literacy", $b = .00$, 95% CI [.0001, .0020], $t(149)= 2.07$, $p =.041$. There was a conditional effect of "Behavioral Guidance and Responsiveness" on "Literacy". Conditional effects show how the relation between the predictor variable and the outcome variable differ at various levels of the moderator. Results showed that at higher levels of "Emotion Regulation" (e.g., 1 standard deviation above the mean), there is a significant positive relationship between "Behavioral Guidance and Responsiveness" and "Literacy" scores ($p =.006$). Results revealed no significant main effects of "Behavioral Guidance and Responsiveness" on "Literacy." See Figure 11.

Figure 11 Graph of Model 8 Results.

Behavioral Guidance X Emotion Regulation Predicting Literacy

y = 10.64x + 187.96
b=.00, p <.01**

y = 11.5x + 193.33

y = 0.0236x + 2.28

High Emotion Regulation

Average Emotion Regulation

Low Emotion Regulation

Transformed Literacy Scores

Low Behavioral Guidance   Average Behavioral Guidance   High Behavioral Guidance

*p<0.05; **<0.01; ***<0.001
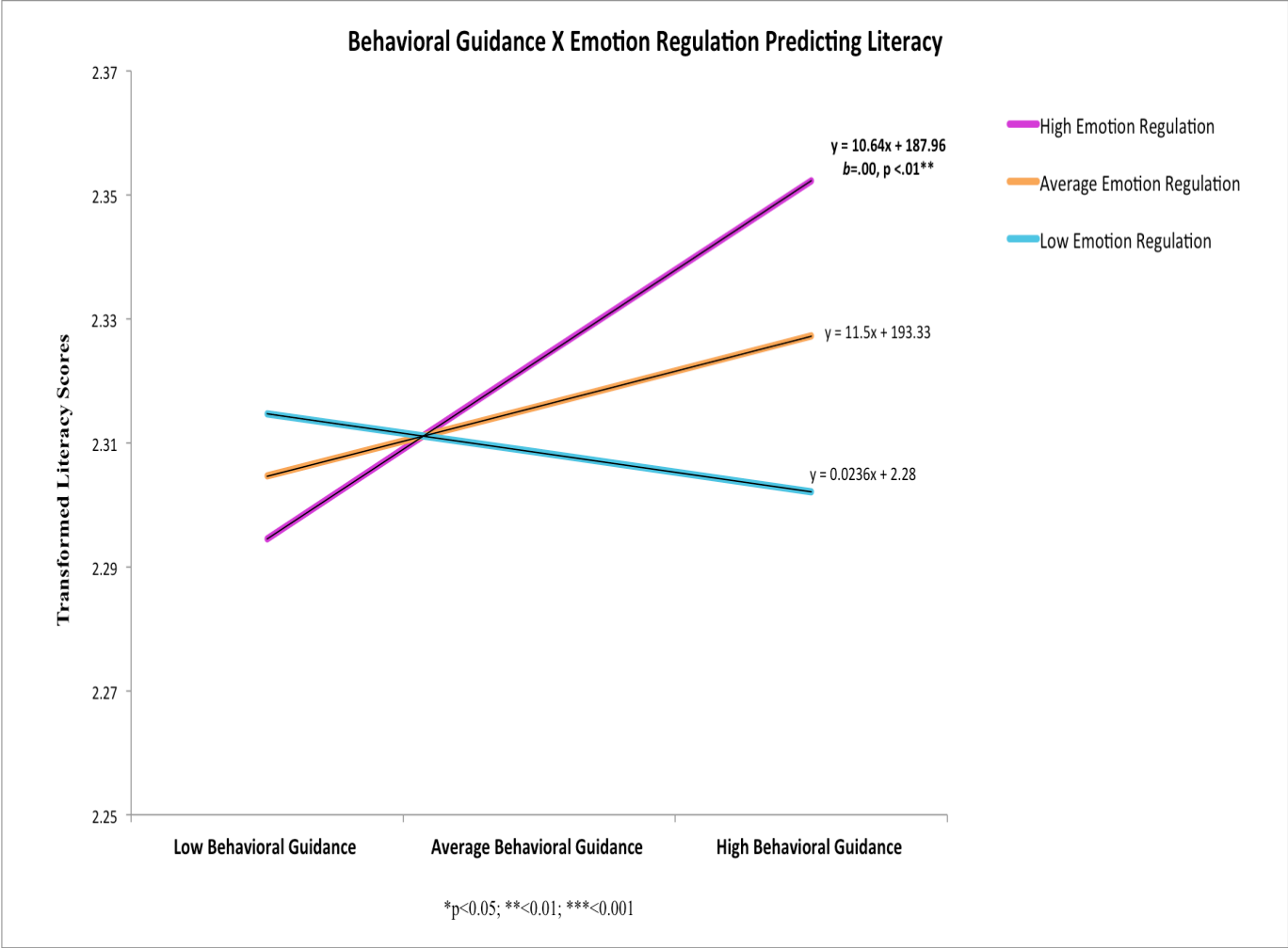
Chapter 5:
Discussion

Research has traditionally taken a deficit-focus of parenting in the context of poverty by highlighting the numerous challenges many low-income parents face when raising their children (Evans, 2004), and by highlighting the mechanisms by which unsupportive parenting practices among low-income parents may compromise the development of regulatory skills and academic outcomes in children (Blair & Raver, 2015). Fewer studies consider the strengths low-income parents possess that support their children's academic readiness in the context of poverty. Further, few studies attend to child-level strengths that may also support the academic readiness among children from low-income households.

Developmental research and ecological and resilience theories support the notion that children possess strengths that help them construct knowledge, make meaning of the world around them, and effectively function and adapt to the contexts they occupy (Piaget & Inhelder, 2008). While children's strengths in the learning process are often overlooked in general, children in poverty are even less likely to be seen as possessing the strengths making them agents of their own learning. In the current study, I draw from resilience frameworks (e.g.,Werner, 1997), conceptualizations of positive parenting (e.g., McWayne et al., 2015), and neurobiological frameworks of development (e.g., Blair, Raver, & Berry, 2014) to explore two aims: 1) the extent to which children's self-regulatory competencies mediate the relation between supportive parenting and children's school readiness outcomes; and 2) the extent to which children's self-

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regulatory competencies moderate the relation between supportive parenting practices and academic readiness outcomes.

Caregiver Age as a Sociodemographic Predictor of Math and Emotion Regulation

Although the examination of sociodemographic variables and outcomes was not a key aim in the current study, it is important to take note of certain predictors of children's academic outcomes as they relate to demographic characteristics of the caregiver. In testing mediational relations between supportive parenting, children's self-regulation, and academic outcomes, results revealed that age of the caregiver predicted children's emotion regulation, as well as children's math scores. The data showed that children of older parents had higher math scores and stronger emotion regulation ability.

While results revealed an association between math outcomes, specifically, these finding suggests that older caregivers may provide children with more opportunities to exercise regulatory and other skills for academic development more generally. There are four specific factors that may explain the positive relation between caregiver age and math outcomes: caregiver maturity and experience with parenting, sibling effects, time spent with the child, and challenges of younger parents.

A possible explanation for the association between caregiver age and math skills is the caregivers' maturity and experience. Older parents may be more mature and therefore more able to identify the needs of their children. An older caregiver may have also parented other children. In this regard, these caregivers may be more experienced with children, they may know effective strategies for teaching academic and regulatory competencies, and may have more experience

identifying and exercising the parenting skills that would better support children's regulatory and academic development.

Developmental literature also points to the possibility of sibling effects. Older parents with multiple children are likely to have older children who may interact with the younger child in ways that may model regulatory behaviors or directly help the younger child to develop strategies to manage their emotions. Siblings may also help support younger children's academic skills. It is possible that older children may help the younger in both math and literacy based activities. Older siblings may be particularly helpful in supporting younger children's math development. Math skills may require more direct guidance to establish the foundation of rules, compared to literacy-based activities.

It may be that older parents (i.e. those aged thirty to forty rather than in their twenties) may be more established in their careers, have more stability, and may therefore be able to spend more time with the child. In spending more time with the child, there may be more opportunities to help the child to master mathematical principles and to practices mathematical operations, to develop math competencies. While opportunities to develop literacy skills may occur more naturally in the context of daily activities (e.g., pointing to the letters on the cereal box, talking to parents, telling a story, etc.), math skills require foundational knowledge of mathematical rules and principles that require repetition to develop strong skills. Such knowledge and practice requires time and direction that older parents are more likely to be able to provide. In addition, if caregivers are able to spend more time with the child, this may also mean more opportunities to model emotion-regulation across settings and situations. While it is also reasonable to consider that older caregivers may be grandparents, who are not working and are available to spend more time with the child, the data show that this was unlikely in the current study given that current

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sample of caregivers shows that the average age of caregivers was 35 years old. Less than 3 percent of the caregivers in the study were grandparents.

Finally, the association between caregiver age and emotion regulation and math skills may not only reflect benefits associated with older caregivers but also may imply challenges associated with younger caregivers. Research suggests that younger parents (e.g., teen parents) may have less experience caregiving, experience more frustrations and therefore have difficulty modeling important regulatory skills in the parenting context. They may also have less time and availability to work with the child directly in ways that would support their academic skills (East & Felice, 2014; Pinzon et al., 2012). Given that math requires time, patience and direct support of the child, it may be more likely to see a positive association between age and children's self-regulatory and math skills. Further, younger parents are more likely to be single, and less educated, thus less likely to have strong academic skills themselves. In this regard, having a younger parent may have more negative implications for children's outcomes. These could be driving factors between caregiver age and children's math outcomes in this study.

The Mediating Role of Children's Self-regulatory Competencies

This study links literatures from developmental and cognitive psychology, neurobiology, and strengths-based frames of Black families to explore the extent to which supportive parenting might relate to positive academic readiness outcomes for preschoolers living in the context of poverty. Research shows that parenting supports regulatory competencies that underlie academic school readiness (Blair & Raver, 2015; Welsh et al., 2010). Extant theories of poverty focus largely on the mechanisms by which non-supportive parenting might inform children's self-

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regulatory competencies and their subsequent school readiness (Blair & Raver, 2015). The first aim of this study then was to examine the extent to which supportive parenting may relate to children's cognitive self-regulatory competencies and positive academic outcomes in the context of poverty. Specifically, I sought to answer the question: To what extent do children's self-regulatory competencies mediate the relation between supportive parenting and academic readiness outcomes? I hypothesized that children's self-regulatory competencies would mediate the relation between Fostering a Connected and Competent Self and children's academic readiness in math and literacy. I also hypothesized that children's self- regulatory competencies would mediate the relation between Behavioral Guidance and Responsiveness and children's academic readiness in math and literacy. I found no statistical support for mediation.

These findings were surprising given that work by Baumrind (1973) more than four decades ago established links between parenting characterized by supportive practices and children's academic outcomes. Further, research has established strong links between parenting and the development of self-regulatory systems, and self-regulatory competencies and academic outcomes (Blair & Raver, 2015; Welsh et al., 2010). The current findings were also surprising given that dimensions of the Preschool Learning Behaviors Scale (PLBS) were used as a measure of self-regulation. Empirically and conceptually, research has established links between these dimensions of the PLBS, and competencies of the PLBS reflecting attention and emotion regulation, and academic readiness outcomes (Fantuzzo et al., 2004; McDermott et al., 2016). For example, in a study with low-income children participating in Head Start programs, Fantuzzo and colleagues (2004) found associations between the two measures of self-regulation, Attention Persistence and Attitude Toward Learning (e.g., Attention and Emotion Regulation) and children's emergent vocabulary skills.

There are several possible reasons why the results revealed no mediational relations between supportive parenting, self-regulatory competencies, and academic readiness outcomes. First, fostering a Connected and Competent Self, though reflective of many of the traditional conceptualizations of emotional support (e.g., encouragement), is not a measure of emotional support. Instead, it is culturally and contextually reflective of the ways Black, low-income parents foster supportive and connected relationships with their pre-school children. This includes elements that extend beyond the traditional conceptualization of emotional support, such as parents' practices related to "cultivating their children's trust, helping children to develop a sense of empathy, emphasizing kindness and altruism, encouraging zest (i.e., children's excitement and interest), supporting children's capacity for self-regulation, and encouraging positive learning behaviors at home" (McWayne et al., 2016, pg. 16). If this were a traditional measure of emotional support, theory would suggest we might see a link between emotional support and children's academic outcomes (Baumrind, 1973). The contents of this subscale, however, may reflect that many low-income, Black parents of preschool-aged children may have a larger contextual parenting goal of not only supporting academic development, but fostering emotional, social and moral development. It is possible then, given some of the goals of Fostering a Connected and Competent Self (e.g., social and moral nurturance), that such practices could directly support the social dimensions of children's school readiness, as opposed to the academic outcomes explored in the current study. Creativity and character strengths, for example, are important outcomes that are reflected in this dimension of parenting. These are important for children's healthy functioning within and outside of the classroom. The Fostering a Connected and Competent Self dimension then may be supporting outcomes that extend beyond

children's academic performance to their general well-being across various non-academic domains.

It is also possible that we do not see a direct association between Fostering a Connected and Competent Self and academic outcomes because, while this measure reflects some of parents' direct efforts to support children's academic development, there is also a strong emphasis on "building relationships and social capital, cultivating children's sense of self, and cultivating children's competencies and their ability to see themselves as connected to and responsible to proximal and distal others" (McWayne et al., 2016, pg.16). The measure itself is broad and inclusive of many factors that collectively cultivate overall grounding and competent individuality in children, developing in them the ability to have strong relational skills while setting the foundation for them to become a learner (McWayne et al., 2016). While parents are engaging in activities with children that are explicitly supporting their academic development (e.g., teaching the child letters), they are doing so in the context of encouraging the child's ability to develop positive, connected relations to others. In this regard, Fostering a Connected and Competent Self may not directly foster academic skills, but rather build skills such as being able to connect with others (e.g. teachers) and those who support the child's learning later academic outcomes. Moreover, these developments may not be occurring immediately. It may be that the benefits of practices of Fostering a Connected and Competent Self may manifest over time when children have had time to exercise their relational skills, possibly after children have entered the school setting.

Results also revealed no significant relations between Fostering a Connected and Competent Self and children's emotion regulation and attention. It is possible that we do not see mediational relationships in the current study as the mediational paths themselves may be more complicated.

Given the emphasis on relational skills, it may be that practices of Fostering a Connected and Competent Self are not directly fostering self-regulation competencies, but fostering the social skills that support self-regulation. Specifically, the current mediational model tested the relationships from supportive parenting to self-regulation, to academic outcomes, among preschool aged children. It is possible, however, that parenting helps build social skills, which shape self-regulatory competencies. These regulatory competencies would then support children's academic outcomes.

Research suggests that cognitive competencies, specifically the ability to self regulate, and social skills develop in tandem (Blair & Raver, 2015; Fantuzzo et al., 2004). While self-regulation is recognized primarily as a set of cognitive competencies (e.g., attention control), the development of those cognitive competencies and executive functions is, in part, informed and shaped by children's social-emotional skills (Blair & Raver, 2015). For example Steinberg, Elmen, and Mounts (1989) elaborated on work by Dornbusch et al. (1987) and found that the mechanism by which authoritative parenting related to grades was children's social skills. Prosocial maturity, the ability to exhibit prosocial behavior, inspired a sense of autonomy in children which influenced better performance in school. In addition, Work by Caughy and colleagues (2002) for example, found that culturally relevant parenting practices lead to children demonstrating fewer behavior problems. Their work suggests that the ability to behave in the classroom is an important social competency that must be achieved in order for children to be able to learn in a classroom setting. In this regard, children may have developed the domain-general regulatory competencies necessary for academic tasks, but may not be able to engage or perform these domain specific tasks until they have actually developed foundational social skills (e.g., cooperation). Given the structure of preschool learning environments, the exercise of many

academic skills may take place in social settings in early childhood (e.g., circle time) (Raver & Knitzer, 2002). Social interactions may serve as the context in which children engage in academic tasks, therefore social skills may play an important role in regulation and subsequent academic outcomes (Phillips & Shonkoff, 2000; Raver & Knitzer, 2002).

Social skills may also explain why results revealed no direct relation between Behavioral Guidance and Responsiveness and academic outcomes. Behavioral Guidance and Responsiveness is a subscale of the Black Parenting Strengths in Context Scale that reflects how parents respond to and prevent children's misbehaviors (McWayne et al., 2016). Specifically, the items of this subscale reflect the extent to which parents take away something that the child likes when he or she misbehaves, put a stop to children's misbehavior when it occurs, and prepare the child ahead of time to help him or her behave (McWayne et al., 2016). The current study focused on these practices and their relation to academic outcomes, but it is possible that these supportive practices could be fostering important social school readiness competencies that help children to function in classroom settings. Specifically, parents guidance related to appropriate behavior may help children develop skills to behave and keep themselves from misbehaving in classroom settings.

In addition, we do not see relations between Behavioral Guidance and Responsiveness and self-regulation. At first glance, the absence of an association here seems unusual because Behavioral Guidance and Responsiveness includes items that reflect the extent to which parents explicitly help children to regulate their behavior (e.g., by planning ahead). With parents' behavioral guidance, we would expect to see a concomitant self-regulatory competency and academic achievement in the child. While we do not see an association between these particular parenting practices and these particular regulatory skills, it is possible that Behavioral Guidance

and Responsiveness is contributing to other facets of self-regulation and executive functioning such as the ability to plan and problem solve (Webster-Stratton & Reid, 2004).

Another possible explanation for this outcome could be that this subscale is comprised of only three items. It may be that such interpersonal, supportive parenting practices are not the driving mechanism supporting children's regulatory competencies. Instead, it may be that the practices that parents engage that extend beyond this parent child-dyad contribute to the child's attention and emotion regulatory competencies. Black parents living in poverty in particular negotiate a sociopolitical and economic climate that presents many challenges to both parents' and children's wellbeing. As a result, parents must take into account many considerations about how to protect and support their children's development, given the contexts and environments in which they are raising them. They must negotiate myriad dynamic contexts while parenting. It is likely, therefore, that they engage additional practices, messages, and forms of parenting to respond to the demands of those contexts. It is possible then, that these other practices have a greater effect on the development of children's regulatory systems and outcomes than Fostering a Connected and Competent Self and Behavioral Guidance and Responsiveness individually contribute to self-regulation. For example, Work by McWayne et al. (2016), shows that one way that Black parents define positive parenting is by engaging in practices that foster a sense of Black pride, culture and heritage in their children. Research has identified links between fostering children's Black cultural pride with academic outcomes among African American children and youth (Caughy et al., 2002; Hughes & Chen, 1999). Studies show that Black low and high-income preschoolers of parents who reflected their African American heritage and culture in the home environment had greater problem-solving skills (e.g., cognitive competencies) and factual knowledge—two important facets of academic school readiness

(Caughy et al., 2002). In addition, in imparting knowledge about Black culture to children, many parents may engage various culturally relevant toys and activities. In this regard, the practices that help instill in children a sense of pride in one's culture may also serve as a platform to create stimulating learning environments. Such environments may provide opportunities for visual stimulation and motor activity, and support for neurocognitive and cognitive development underlying academic readiness skills like attention (Farah et al., 2008). Models such as the PIM and neurobiological framework suggest that such investments play a role in children's cognitive development. Black parents may also be providing such stimulating environments, but in ways that are not captured by traditional, mainstream conceptualizations of supportive parenting.

In addition, work by McWayne et al. (2016) shows that many low-income Black parents of preschoolers define positive parenting by practices that foster religious and spiritual values in their children. Studies have found that children whose parents attended services and had religious discussions in the home environment were found to be higher in social skills, self-control, and learning behaviors (Bartkowski, Xu, & Levin, 2008). In addition, studies religion may also provide children with a framework for dealing with conflict and dealing with emotions (Mahoney, 2010). Religious engagement, in this regard, may be another mechanism that is contributing to the development of important self-regulatory competencies, particularly emotion regulation. While supportive parenting is an important and consistent predictor of children's outcomes, these practices of supportive parenting are dynamic and likely co-occurring with other positive parenting practices which, in concert, could be shaping children's regulatory skills.

Finally, we may not see a relation between children's regulatory competencies and academic outcomes given that the current mediational model did not account for the role of working memory. Working memory is a system of short-term storage of information that is

considered a domain-general cognitive competency (Welsh et al., 2010). Working memory allows for one to accesses information stored in long-term memory, and to manipulate and manage that information. It is also critical to learning, problem-solving, processing new information, manipulating information, comprehension, computation (D'Esposito & Postle, 2015; Swanson, Jerman, & Zheng, 2008) and attentional skills (Welsh et al., 2010). It may also be an important aspect of the development of self-regulatory competencies, independent from self-regulation but helping to facilitate its development (Hughes & Ensor, 2007).

Developmental theoretical and empirical works link such domain-general cognitive competencies (e.g., working memory, self-regulation) to domain specific school outcomes (Blair, 2006; Blair & Raver, 2015; Welsh et al., 2010). For example, in a study with Black and Latino head start children, Welsh and colleagues (2010) found that domain general cognitive competencies of working memory and attention predicted children's growth in the areas of math and literacy, prior to kindergarten. In this regard, academic outcomes may not only depend on self regulatory competencies (Blair & Raver, 2015), but the cognitive competencies that support self-regulation.

The Moderating Role of Children's Self-Regulatory Competencies

The second aim of the study was to consider children's self-regulatory competencies and the ways they might interact with parenting practices to inform important academic readiness outcomes. Specifically, I asked the question: To what extent do children's self-regulatory competencies (i.e., attention and emotion regulation) moderate the relations between supportive parenting practices of Fostering a Connected and Competent Self and Behavioral Guidance and Responsiveness and math and literacy outcomes? I hypothesized that children's self- regulatory competencies and Fostering a Connected and Competent Self as well as self-regulatory

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competencies and Behavioral Guidance and Responsiveness would interact to predict academic outcomes.

Ecological theories present development as a transactional process between parent and child; this means that the effectiveness of parenting practices on children's outcomes depend, in part, on the child's individual characteristics. I therefore predicted that children's individual differences of attention and emotion regulation would moderate the interaction between supportive parenting practices and children's academic outcomes. This prediction was confirmed. Specifically, for children who were higher in emotion-regulation, there was a stronger, positive association between Behavioral Guidance and Responsiveness and children's literacy. The presence of an interaction between children's emotion regulation and Behavioral Guidance and Responsiveness in the data may reflect that the ability to regulate is central to both of these constructs. Behavioral Guidance and Responsiveness reflects ways parents help children regulate their behavior (McWayne et al., 2016). Emotion regulation taps into the ways children are able to regulate their negative emotions (Blair & Raver, 2015). The interaction may reflect that regulation is at the crux of these parenting practices and this child competency. Children may be modeling some of the regulatory skills that parents are demonstrating (Bandura, 2015). When they are able to do this more successfully, that is, when children have more effective strategies for regulating their negative emotions or frustration, we see a stronger relation between parenting and literacy.

Findings suggest when children are better able to modulate their negative emotions, parent's efforts to guide their behavior are most effective in supporting their children's academic development, specifically in literacy. In sum, these findings show that parents can guide children

in how to learn and how to self-regulate, but children must also be able to regulate themselves enough to benefit from parental guidance.

Findings also revealed that the interactions between Behavioral Guidance and Responsiveness and self-regulatory competencies only predicted children's literacy outcomes (as opposed to literacy and math outcomes). This finding may reflect the fact that learning to read is one of children's first academic skills. In that regard, when children are acquiring literacy skills they are also learning *how* to learn. Early literacy development requires many new and challenging concepts for children to contend with and master. Such concepts include understanding morphemes, that language is connected to letters, that letters have sounds and that these sounds are used to form words (Keifer & Lesaux, 2007). In the process of learning something new (e.g., developing literacy skills) children may experience negative emotions that they must manage to move forward. Behavioral Guidance and Responsiveness may be particularly important in the context of literacy in that, in many respects, these practices are teaching kids to learn. This subscale taps into the ways parents regulate children's behavior, but also how parents teach children to plan to regulate their own behavior. In this regard, literacy based activities provide the ideal opportunity for parents to guide children's behavior by helping them develop the skills necessary to learn.

Finally, the data showed that Behavioral Guidance and Responsiveness, as opposed to Fostering a Connected and Competent Self, interacted with children's self-regulation to inform academic outcomes in literacy. While Fostering a Connected and Competent Self includes practices that may support regulatory skills, these practices largely support and encourage relational skills. Behavioral Guidance and Responsiveness, on the other hand, reflects the extent to which parents guide children's behavior, but also help children to guide and regulate their own

behavior. In this regard, Behavioral Guidance and Responsiveness practices are empowering children in that they are teaching children self-regulation, which is necessary for all forms of learning. More importantly, these practices are teaching children how to regulate themselves, thus protecting them from being controlled by others. The findings suggest that the most important parenting practices for children's academic learning may not be those that foster nurturance and warmth or even those that directly involve teaching academic skills. The most important parenting practices to children's academic learning may be those that support children in regulating their own behavior so that they are positioned to learn.

Limitations

There were several limitations to the current study. The alpha reliability for the Behavioral Guidance and Responsiveness subscale of the Black Parenting Strengths in Context scale (McWayne et al., 2016) was relatively low. This relatively low reliability may be a function of the subscale having only three items. In addition, it is possible that there were no direct relations between Fostering a Connected and Competent Self and outcomes given the restricted variance in this variable. Participants in the study did not show much variance in the Fostering a Connected and Competent Self scores. On average, participants scored high. There was also a relatively low standard deviation. This high average and low standard deviation suggests that there may be little variance in practices of Fostering a Connected and Competent Self, and that most parents identity these practices as an important part of positive parenting.

Other psychometric limitations included the small sample size. Having a small sample of children prevented me from testing more robust models exploring indirect and interactional relations between parenting, self- regulation, and children's math and literacy outcomes. Sample

size was further reduced by the listwise deletion of cases implemented as the default missing

data procedure in PROCESS (Hayes, 2013). An alternative to testing moderation using

PROCESS would be to use SPSS to create interaction terms as to test the relation between those

interaction terms and outcome variables. This would allow for pairwise deletion, which would

use include that contain some missing data, as opposed to discarding those cases, as with listwise

deletion. Future work could also address issues of sample size by considering methods of

imputing data prior to running analyses. Imputing data may also by a viable option when data are

missing, for example, due to severe non-response. Although imputing data may lead to a larger

sample size and reduce standard errors, some research warns that imputation could bias the data

(Mittag, 2013) and was therefore not imputed in the current study. Structural Equation Modeling

(SEM) could serve as an alternative method for future analyses with a larger sample, and would

allow for more robust tests of mediation and moderation in a single analysis.

Although there were some significant direct relationships between variables and conditional

interactional relationships between parenting, regulation, and readiness outcomes, the effects

were very small and only accounted for a small portion of the variance in the sample. In addition,

literacy was left skewed and therefore was transformed using a square root transformation. While

this transformation resulted in a more normal distribution of the data, the transformed literacy

scores reflect a restricted range of scores.

In addition, the current data set did not include a measure of income. Parents in the study

were considered low-income by virtue of qualifying for free and reduced lunch. Some work has

shown, however, that using free and reduced lunch as an indicator of income may have several

limitations including declining rates of participation and low take-up rates that tend to vary in

such programs (Hauser, 1994). Further, while all parents in the study were participants in Head

Start, which is federal programming geared towards serving low-income families, families who are not low-income can also enroll their children in Head Start programs. These families may be qualitatively different from those who are lower-income. Research suggests that factors such as the depth and persistence of poverty may contribute to differences in outcomes (McLoyd, 1990). Future studies should include measures of income, as doing so would allow for a deeper understanding of the ways that variation in poverty levels could influence developmental processes.

Implications and Future Directions

The current study presented an approach to considering the ways children from low- income families may become academically ready for school. Specifically, it builds upon existing frames that present mechanisms by which living in poverty may pose parenting challenges that impact children's subsequent academic outcomes. I examined supportive parenting as a mechanism by which low-income parents may foster positive academic readiness by supporting children's self-regulatory competencies. In doing so, I fill a gap in the research relating to how children's regulatory competencies might mediate the relation between supportive parenting practices and academic readiness outcomes. I also added to existing frames (e.g., Blair and Raver's neurobiological model) by examining the extent to which children's self-regulatory competencies moderated the relation between supportive parenting and academic readiness outcomes.

The results of the present study revealed that children's self- regulatory competencies moderated the relation between supportive parenting and literacy outcomes. These findings extend the theories that undergird this work (e.g., the neurobiological framework, the FSM, and

the PIM) in that they suggest that children from low-income household may receive the supportive parenting necessary for positive academic readiness outcomes in the context of poverty. Specifically, findings present a mechanism by which such outcomes can occur (e.g., practices that guide children's behaviors coupled with children's self-regulatory competencies of attention and emotion). Moreover, results show that children's strengths (e.g., their self-regulatory competencies in attention and emotion regulation) dictate the strength of the relation between parenting and academic readiness outcomes—particularly in literacy.

In this regard, the findings of the current study highlight the importance of examining child-level competencies when considering ways parents in poverty can help children to become more academically prepared or school ready. In addition, results revealing that children's self-regulatory practices moderated the relation between behavioral guidance-related practices and academic outcomes rather than practices that reflected more traditional practices of warmth, emotional support and nurturance, extend existing theories and frameworks by highlighting the importance of practices that guide the child's behavior.

Existing theories (e.g., the FSM, the neurobiological model) highlight nurturance, warmth, and these more traditional parenting practices as key to children's positive outcomes. The results of the current study, however, show that practices that do not include these elements and instead emphasize the ways parents regulate children's behavior and teach children to regulate their own behavior, are also important for positive academic outcomes.

Future Directions in Research on Supportive Parenting, Self-Regulation, and Academic School Readiness

While the current study advances our understanding of the mechanisms related to positive academic readiness outcomes in the context of poverty, the findings also point to questions that

remain and warrant further study. The first aim of the study was to examine the mediational

relations between supportive parenting and children's regulatory and academic readiness

outcomes. In testing these mediational links, results showed that neither facet of supportive

parenting (e.g., Fostering a Connected and Competent Self nor Behavioral Guidance and

Responsiveness) directly related to self-regulatory competencies, and subsequent outcomes. This

raises the first question for researchers: *What parenting practices are contributing the*

development of low-income preschooler's self-regulatory competencies?

The findings that Fostering a Connected and Competent Self and Behavioral Guidance and

Responsiveness did not relate to children's self-regulatory competencies signals that there may

be other practices in which low-income parents engage to support their children's regulatory

competencies. Moreover, low-income parents identify a range of practices that may support their

children's development (McWayne et al., 2016). Understanding how parents support their

children may require examining practices across this range. Future research should implement

cluster analyses techniques that can group parents by profiles (or clusters) and would allow for a

person-centered examination of the contribution of combinations of effective practices predicting

children's outcomes. Profiles examining parenting practices may give a more nuanced and

realistic view of the ways parenting occurs. Future empirical studies that are able to identify the

combinations or clusters of positive parenting practices relating to positive regulatory outcomes

may support policy makers and educators in customizing interventions and programming aimed

at improving children's academic readiness outcomes through parenting.

The absence of mediational relations between supportive parenting, children's self-

regulation, and academic readiness outcomes also suggests that there may be mechanisms not

accounted for in the current mediational model. This raises the second question for researchers:

What are the developmental mechanisms underlying the relation between supportive parenting practices and children's academic readiness outcomes? Future research should build on the current study to explore the role of social skills and motivation in the developmental pathway from parenting to academic readiness outcomes. Researchers should explore the extent to which supportive parenting many be contributing children's social skills, then self- regulatory competencies and subsequent academic readiness outcomes. Social skills are developing with regulatory competencies (Blair & Raver, 2015; Mashburn & Pianta, 2006). Adding the construct of social skills is one way to elucidate on the paths by which parenting relates to academic readiness outcomes. Another more pragmatic next step however, may be the examination of the construct of motivation in the mediational path.

Study results showed that there were no direct relations between supportive parenting and academic readiness outcomes. Specifically, Behavioral Guidance and Responsiveness reflects the ways that parents help children regulate their behavior (e.g., children's misdeeds) and self-regulation reflects the ways that children regulate their attention and their emotions. Regulation is at the core of both of these constructs. According to the neurobiological framework (Blair & Raver, 2015), self-regulation should mediate academic outcomes, however, data revealed it did not. Behavioral Guidance and Responsiveness reflects not only the ways parents guide and help regulate children's behavior, but also the extent to which they do this by motivating the child to engage or not engage in certain behaviors. Specifically, the subscale reflects the extent to which parents take something that the child likes when the child misbehaves (McWayne et al., 2016), thus tapping in the child's motivation to not misbehave.

This finding signals that children's motivation may be at play in the path from parenting practice to children's academic readiness outcomes. Research shows that self-regulatory skills

and motivational processes are working together to inform children's developments (McDermott et al., 2002). Motivation may be what allows children to draw on certain regulatory competencies. Without motivation towards a certain outcome, children may not be compelled to self-regulate (Bandura, 2015).

In the current study, I used two subscales of the PLBS (e.g. Attention Persistence and Attitude Toward Learning) as measures of attention and emotion regulation respectively. The PLBS however contains a third subscale, Competence Motivation. Competence Motivation captures the ways children engage new activities and their motivational orientations in learning situations. Behaviors in this dimension include the extent to which a child is "reluctant to tackle a new activity" or "easily gives up on activities" (McDermott et al., 2002). This group of behaviors also reflects the child's interest in and willingness to participate in learning activities such as those that are novel or challenging for him or her.

McDermott and colleagues (2002) suggest that the competencies of attention, emotion regulation and motivation develop together and support each other. McDermott, Rikoon, and Fantuzzo (2014) for example, found that two categories of learning behaviors—Competence Motivation and Attentional Persistence, predicted children's proficiency in reading, vocabulary, language, mathematics and science. Because these competencies support each other, it is important that future developmental research considers motivation with attention and emotion regulation. Further, future work should examine the role of motivation using the PLBS Competence Motivation subscale (McDermott et al., 2002). Doing so would allow for a more holistic examination of mediational pathways, using the complete learning behaviors scale to examine children's regulatory competencies. In addition, such an examination would account for

not only the regulatory behaviors that could mediate the path between parenting and academic readiness outcomes, but the factors that influence how and if children will self-regulate.

In sum, research exploring motivational processes in the development of self-regulatory competencies can shed light on the pathways by which children develop important regulatory skills and academic readiness outcomes in the context of poverty. This future research may also inform programming and classroom practice by helping educators provide children with learning opportunities that offer the appropriate balance of challenge and reward necessary to optimize children's development of foundational skills.

Implications for Parenting, Practice, and Policy

The current study findings have implications for parents, teachers and policy makers seeking to support the academic readiness of children from low-income families.

Guiding Children's Behavior With Supportive Practices for Academic Success

Findings showed that practices related to guiding children's behaviors, specifically, predicted positive academic readiness outcomes when interacting with children's regulatory competencies. This finding suggests that parents living in poverty wanting to support their children's academic readiness may be more likely to do so if they are demonstrating parenting practices that guide their children's behavior. In doing so, parents may be modeling to children the regulatory skills that undergird all facets of learning. If parents are able to guide children's behavior across contexts, they may be equipping children with an arsenal of skills from which children can draw in order to independently support their own, regulated learning.

In addition, teachers may also engage in such practices to cultivate foundational skills and competencies for positive outcomes. Teachers have consistent interactions with the child in a formal learning context. Knowing the types of interactions between child and adult that may

contribute to positive outcomes may help policy makers to design classroom- based curricula and activities in which such interactions are possible and likely. Such classroom-based practices may support the development of children's positive outcomes across contexts, therefore increasing the likelihood of their academic success.

Children and Parents as Partners in Children's Academic Success

Findings of the current study revealed that supportive parenting practices did not directly predict children's academic readiness outcomes. Instead, the interaction between parenting and children's self-regulatory competencies predicted children's positive academic readiness outcomes. These findings suggested that parenting efforts to support children's academic readiness outcomes should make sure to consider the child and the dynamics they bring to the table. Specifically, interventionists seeking to improve parenting to support children's academic readiness outcomes should consider not just changing parenting behavior, but should support parenting that identifies and builds upon children's existing strengths in order to achieve the child's optimal academic outcomes. Knowing what skills, competencies, and individual qualities children are bringing to the parent-child dynamic can also help parents keep children in their zone for proximal development (Vygotsky, 1986).[2] That is, when parents know the strengths that their children draw upon in the context of learning, they will be better able to present children with a range of learning opportunities and tasks that children can accomplish.

Building Strong Regulatory Skills for Optimal Outcomes

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[2] Vygotsky coined the term "Zone of Proximal Development" to refer to the skills that children are able to learn with the help of a more knowledgable other, like and adult. It is a range of developmentally appropriate tasks and expectations for children to accomplish, with scaffolding, modeling, and other forms of support (Bronson, 2000,).

Results revealed that in some cases where there was not an overall effect of the children's self-regulation on the relation between parenting and academic readiness outcomes, there were effects of parenting on academic outcomes at different levels of the moderator-- the strength of the relation between parenting and children's outcomes was dependent upon the degree of children's regulatory competencies. Specifically, results revealed the relations between parenting and children's academic outcomes were strongest when children were better at regulating their emotions. These findings suggest that it is not just the mere presence of certain competencies that make a difference in how parenting informs children's readiness, but also children's *individual* differences in those competencies (e.g., being higher or lower) that dictate, in part, the effectiveness of parenting practice on academic outcomes. This may signal to some extent that parents are responding to and supporting the individual strengths of their children. More importantly, these findings suggest that to ensure that parenting practices are most effective, teachers and parents should teach self-regulation. Strengthening children's self-regulation will allow children to have the stronger competencies necessary to moderate the effect of parenting on academic readiness outcomes.

Teachers and policymakers should consider the ways that activities in the classroom can strengthen children's regulatory skills through classroom practice. One way that teachers may be able to teach regulatory skills is through activities that progressively increase in difficulty (Clements & Sarama, 2011). Activities that allow the teacher to provide scaffolding is another way that teachers may help children strengthen regulatory skills. Further, when teachers are able to gradually withdraw support, they allow children enough direction to know how to self-regulate, but enough freedom to exercise self-regulation. Teachers may also strengthen children self-regulation by helping children exercise metacognitive skills, theory of mind, ability to think

through a problem, identify their emotions, and identify the emotions of others. Providing such opportunities that align with children's daily lives will allow children to develop regulatory skills that meet the demands of their contexts and experiences. Parents may also strengthen regulatory skills by helping children learn how to communicate their emotions, helping children to plan and guide their own behavior, and modeling and scaffolding so that children can have examples of self-regulation.

Conclusions

Theoretical and empirical work on poverty shows that being low-income may pose many structural and social challenges to the development of children's self-regulation and academic readiness. The current study shows that children's individual characteristics moderate the relation between parenting and academic readiness outcomes. These findings are consistent with resilience theories which propose that children have strengths that should be examined when considering developmental processes unfolding in challenging contexts, such as those imposed by poverty. Yet, having strengths does not mean that children will engage those strengths. For this reason, parenting approaches are important. Parents who recognize children's strengths can foster and empower children to engage and build upon them. Further, findings showed that children, with the support of parents, can have positive academic readiness outcomes in the contexts of poverty.

Indeed, living in poverty poses many challenges. Many Black children from low-income families face racial, social, economic, systemic, educational other inequities. Further many children of low-income parents, despite their resilience, are overlooked and ascribed to academic failure even before they enter school. Yet with all of the circumstances low-income families

cannot control, parents can yet help children to harness their individual strengths and achieve,

even in the face of economic challenge, disparity, and inequity.

APPENDIX A:
Table A Demographic Data

Demographic Data

Table A

Demographic Variable	(*N*=666) Total % of Sample		*(N=151)* Total % Study Sample
Caregiver Gender			
Female	78%	77%	
Male	22%	23%	
Caregiver type			
Parent	86%	95%	
Grandparents or aunts/uncles	9%	3%	
Foster parents, godparents or "other	5%	2%	
Child Gender			
Female	51%	53%	
Male	49%	47%	
Education			
<High school	18%	19%	
High school/GED	26%	25%	
Some college/vocational training	38%	40%	
Bachelor's degree	12%	10%	
Post college/graduate degree	6%	6%	
Immigrant Status			
United States	58%	48%	
Other Countries	42%	52%	
Additional Childcare			
Yes	80%	87%	
No	20%	13%	
Mean # of Years in the United States (*SD*)	16.1 (9.4)	16.2% (8.7)	
Mean Age (*SD*)	35.15 (10.7)	34.29%(8.7)	

Table B. Descriptive Statistics and Intercorrelations of Study Variables

Table B

Summary of Means, Standard Deviations, Skew, and Correlations for Parenting, Regulation and Academic Readiness Variables

Variable	N	*M*	*SD*	1	2	3	4	5	*6*
1. FosterCon	**151**	**49.19**	9.35	-	. 52**	-.05	-.06	.09	.09
2. Behave	**151**	**48.12**	10.20		-	-.02	-.05	-.02	.09
3. Attention	**151**	**16.92**	1.40			-	.46**	.18**	.15
4. Emotion	**151**	**15.70**	1.77				-	.19**	.09
5. Math	**151**	**216.29**	54.32					-	.80**
6. Literacy	**151**	**211.85**	45.13						-

Note. FosterCon = Fostering a Connected and Competent Self; Behave = Behavioral Guidance and Responsiveness; Emotion = Emotion Regulation. **p* < .05, ***p* < .01, ****p* < .001, †*p* = .10

APPENDIX C:
Full Results for Mediational Analyses

Model 1a and 1b: Fostering a Connected and Competent Self → Attention and Emotion Regulation → Math

      "Fostering a Connected and Competent Self" did not predict "Attention", b = -.01, 95% CI [-.03, .01], $t(148)$= -.61, p =.542, or "Emotion Regulation" b = -.01, 95% CI [-.04, .02], $t(148)$= -.63, p =.528. "Attention" did not predict "Math" b = 4.52, 95% CI [-3.19, 12.23], $t(148)$= 1.16, p =.248, nor did "Emotion Regulation" b = 3.33, 95% CI [-2.35, 9.01], $t(148)$= 1.16, p =.249.

Model 2a and 2b: Fostering a Connected and Competent Self → Attention and Emotion Regulation → Literacy

      "Fostering a Connected and Competent Self" did not predict "Attention", b = -.01, 95% CI [-.03, .01], $t(149)$= -.61, p =.545 nor did it predict "Emotion Regulation" b = -.01, 95% CI [-.04, .02], $t(149)$= -.60, p =.552. "Attention" did not predict "Literacy" b = -.01, 95% CI [.01, .02], $t(149)$= 1.28, p =.202, nor did "Emotion Regulation" b = .00, 95% CI [-.01, .01], $t(149)$= .46, p =.649.

Model 3a and 3b: Behavioral Guidance and Responsiveness → Attention and Emotion Regulation → Math

"Behavioral Guidance and Responsiveness" did not predict "Attention", b = -.002, 95%

CI [.-02, .02], $t(148)$= -.20, p =.839 or "Emotion Regulation" b = -.0007, 95% CI [.-03, .03],

$t(148)$= -.05, p =.958. "Attention" did not predict "Math" b = 4.35, 95% CI [-3.41, 12.11],

$t(148)$= 1.11, p =.269, nor did "Emotion Regulation" predict "Math" b = 3.17, 95% CI [-2.54,

8.88], $t(148)$= 1.10, p =.275.

Model 4a and 4b: Behavioral Guidance and Responsiveness → Attention and Emotion

Regulation→ Literacy

Results showed that the relationship between "Behavioral Guidance and Responsiveness"

and "Literacy" was not mediated by "Attention" CI [-.0004, .00], nor was it mediated by

"Emotion Regulation" CI [-.0002, .00]. Specifically, "Behavioral Guidance and

Responsiveness" did not predict "Attention", b = -.002, 95% CI [-.02, .02], $t(149)$= -.20, p =.843

or "Emotion Regulation", b = -.0002, 95% CI [-.03, .03], $t(149)$= -.107, p =.986. "Attention" did

not predict "Literacy" b = .01, 95% CI [-.01, .02], $t(149)$= 1.286, p =.68, nor did "Emotion

Regulation" predict "Literacy" b = .00, 95% CI [-.01, .01], $t(149)$= .413, p =.681.

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