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The Relationship Between Preschool Children's School Readiness, Social-Emotional
Competence and Student-Teacher Relationships

A dissertation submitted in partial fulfillment of the requirements for the degree of
Doctor of Philosophy at Virginia Commonwealth University.

by

Badiyyah I. Waajid
M. Ed., Virginia State University, July 1993
BS, Virginia Commonwealth University, June 1971

Director: Jill E. Fox, Ph.D.
Associate Professor
School of Education

Virginia Commonwealth University
Richmond, Virginia
December, 2005

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ABSTRACT

THE RELATIONSHIP BETWEEN PRESCHOOL CHILDREN'S SCHOOL
READINESS, SOCIAL-EMOTIONAL COMPETENCE AND STUDENT-TEACHER
RELATIONSHIPS

By Badiyyah I. Waajid, Ph.D.

A dissertation submitted in partial fulfillment of the requirements for the degree of
Doctor of Philosophy at Virginia Commonwealth University.

Virginia Commonwealth University, 2005

Director: Jill E. Fox, Ph.D., School of Education

The purpose of this study was to explore the relations between preschool children's school readiness, young children's social emotional development, and teacher-student relationships. Of interest, was whether social-emotional competence and teacher-student relationships made unique contributions to young children school readiness. Participants were 58 three and four year old children (31 boys and 27 girls) who attended 3 inner-city preschool programs. Thirty-five percent of the sample was African American, with the remainder being Caucasian, Asian, or Hispanic. Social-emotional and teacher-student relationship measures collected during the year were associated with school readiness at year's end. Children's emotional competence was assessed using child interviews. Social competence and teacher-student relationships were measured using teacher surveys.

After controlling for age, bivariate correlation revealed that emotional competence and social competence were positively related to one another. Emotional competence and

close teacher-student relationships were related to school readiness. Regression analyses showed that emotional competence added to the prediction of school readiness after controlling for age. Children more ready for school, were more emotionally competent. Children having close relationships with preschool teachers were also more emotionally competent.

THE RELATIONSHIP BETWEEN PRESCHOOL CHILDREN'S
SCHOOL READINESS, SOCIAL-EMOTIONAL COMPETENCE,
AND STUDENT-TEACHER RELATIONSHIPS

Introduction

Statement of the Problem

The purpose of school is to promote academic skills and knowledge to take students from one level of learning to the next, but, if students drop out of school, success can be difficult to achieve. Five out of every 100 students enrolled in high school in October 1999 left school before October 2000 without having successfully completed their high school program. Despite efforts to reverse this trend, the percentage of students dropping out of school each year has stayed relatively unchanged since 1987 (National Center for Education Statistics, 2000).

Suspension or expulsion is another reason students miss school, either permanently or temporarily, and usually results from aggressive or inappropriate acts committed in the classroom. Limited research has been conducted with students leaving school for these reasons; however, a recent study by the National Center for Education Statistics (2000) analyzed aggression among middle and high school students and included open-ended interviews with those involved in violent and aggressive acts. Conversations with study participants explored the dynamics of the 250 aggressive incidents from the students' perspective. On a scale of least to most serious, the 250 acts included behaviors such as throwing something at another individual; pushing, grabbing, or shoving; slapping, kicking, hitting with the fist, or hitting with an object; threatening with a gun or knife;

with a gun or knife; and using a gun or knife. The majority of these incidents happened in the school classroom. This study found that these students felt *anger* in 62% of the 250 incidents and *fear* in approximately 14% of 230 incidents. The vast majority (84%) admitted their involvement but denied responsibility. Their actions were supported by a strong belief system that justified their actions based on their emotions, which served to neutralize any feelings of guilt.

Victims of classroom aggression acts are not the only ones negatively affected. Students and teachers who witness inappropriate behaviors also suffer. When students and teachers worry about being attacked, they may not be able to concentrate on teaching or learning, and academic performance declines. In March 1996, Congress recognized the negative impact of school violence on education reform and signed into law Goal 6 of the Goals 2000: Educate America Act. The supporting narrative states that by 2002, no child or youth should be fearful on the way to school, be afraid while there, or have to cope with pressures to make unhealthy choices (National Education Goals Report of 1994: Building a Nation of Learners). Passage of Goal 6 indicates that during each school day, there are students and teachers who must deal with the social and emotional impact of inappropriate student behaviors rather than focus on school related issues. Adoption of Goal 6 also indicates that students may need supports beyond those typically provided by teachers and schools, or beyond those usually considered part of a school's core curriculum. To help students achieve higher academic goals (Mayer & Salovey, 1997), schools may need to do more than focus on students' cognitive abilities. The literature provides evidence that "school-readiness needs to be re-defined and that

supports should include 1) helping children learn how to express and handle their emotions in a variety of situations in which they interact with peers and adults, and 2) recognizing that teachers have a role in providing these supports at the pre-kindergarten age level (Blair, 2002).

Rationale for Studying the Problem

Increased time away from home in school and decreased closeness within families and communities has contributed to the trend of aggression and youth violence (Goleman, 1995). In the 1990s highly publicized school shootings involving teenagers and pre-teens caught and held the concerned attention of the American public. Youth were both the victims and perpetrators of these incidents of school violence. In 1998 for example, the National Center for Education Studies released the results of an investigation of serious violent public school crimes involving 1,234 schools nationwide. According to the study, approximately 21% of high schools, 19% of middle schools, and 4% of elementary schools surveyed had experienced at least one violent crime per year. More serious school crimes included sexual battery, suicide, physical attacks, and fights with weapons (Cornell, Loper, Atkinson, & Sheras, 1999).

Moreover, there is evidence that even preschool children have not been exempt from aggressive acts or inappropriate peer behaviors. In a survey of nearly 400 children that 40% of preschoolers exhibit at least one antisocial behavior each day; 24% exhibit three or more per day; and 10% exhibit six or more antisocial behaviors each day; teachers report that such problems are on the rise (Graham, 2002).

As the number of young children attending preschool increases, there is a growing demand for early education programs (Morse, 1998). More than one-half of children in America spend the majority of their day in learning situations outside the home and away from families. In 1991, according to the National Education Goals Panel, 73% of three-to-five year olds from families earning over \$50,000 a year attended preschool compared to only 45% of children from families earning \$10,000 a year or less. By 1999, the participation rate for children from high-income families in center-based care was 70% compared to 57% for children from low-income families. Three-to-eleven year olds, spending an average of four hours per day in preschool or school in the 1980s, now spend an average of six hours per day according to a study by the University of Michigan Institute for Social Research (Children's Defense Fund, 2001). Children in quality preschool programs enjoy valuable and developmentally significant experiences which enhance abilities in all domains during the important early years and promote a successful transition from home to school (Lunenberg, 2000).

Although it was suspected that children from low-income families were high risk for school failure, Weikart (1996) demonstrated that high quality early education programs should include relevant experiences that meet young children's emotional, social, as well as cognitive needs. Furthermore, these experiences are linked to future academic success. Weikart made the initial case for preschool education when in 1962 he began a longitudinal study, the Perry Pre-School Project in Ypsilanti, Michigan, with 123 African American children from low-income families. Some of the children had participated in high quality early childhood programs, while others had no quality early

education experiences. The children's achievements were followed into adulthood, and the differences between preschool attendees in these programs and non-attendees through age nineteen were statistically significant. Researchers found consistent improvements in poor children's achievement throughout their school years. They also discovered that quality early educational programs addressing the social, emotional, and cognitive needs of children contribute to successful life patterns and the earlier children receive these services the better.

Weikart's Perry Preschool Project remains the most significant longitudinal study on the impact of early childhood education on low-income children's school readiness and adjustment. More recent research, however, indicates that children from low-income families are not the only children at risk for school failure. Stressful emotional and social experiences related to home or preschool can compound problems encountered later in formal schooling by *any* child. Children that come to kindergarten emotionally and socially unprepared to navigate the school are at-risk of encountering school problems regardless of their socio-economic status or environment (Hamre & Pianta, 2001).

The economic and social changes of the last 40 years have reduced family and community supports. Never before have young children been exposed to such a multiplicity of environmental settings (Children's Defense Fund, 2001). The number and diversity of these settings has increased in response to the growing demand for out-of-home care and education of young children (Bredekamp & Copple, 1997). For example, in a majority of families both parents are working outside the home and some are working more than one job. Neighborhoods of strangers have replaced close-knit

communities and extended families, once the providers of child care. Neighborhood schools have been replaced by classroom environments of students of diverse cultures, perspectives, and abilities unfamiliar to not only the children but also to their families.

These changes certainly impact young children, particularly between the ages of five and seven when they are making the transition to formal schooling. During this crucial time period in children's lives major changes in self-understanding and self-concept development unfold (Sameroff, 1983). To provide more positive continuity in children's lives, the connection between pre-elementary experiences and early elementary settings should be better recognized (Kagan, 1992).

For many educators and policy makers, the concept of school readiness has generally meant preparedness in basic skills related to academics. Children's abilities to relate to peers and adults in the school environment have more often than not been of secondary concern (Mayer & Salovey, 1997), although available research suggests that this view needs to be re-examined. For example, Ladd (1990) has determined that children who make new friends in kindergarten are more likely to achieve academically, and that children between the ages of three and eight need systematic intervention as they first form patterns of behavior and attitudes. Intervention at this stage prevents the later development of aggressive and anti-social behaviors and replaces them with pro-social skills that enhance young children's ability to initiate and maintain friendships (Lynch et al., 1999).

Statement of the Purpose

There is limited research on the specific emotional and social skills important for school readiness. The connections between children's social, emotional, and cognitive development have also not been thoroughly explored in relation to the importance of the teacher's role in enhancing these skills (Goleman, 1995). Separate streams of research exist where psychologists have focused on children's social and emotional development, and educators have focused on children's cognitive or academic development. There is increasing evidence, however, that emotional and social development are important in all areas of learning, and that a conceptual model for educating young children must be comprehensive in nature. A systems approach (Pianta, 1999) supports that such a model must consider the cognitive, social, and emotional skills needed for young children to be successful in school and, ultimately, in life.

Over 3,000 kindergarten teachers surveyed in the year 2000 (Rimm-Kaufman, Pianta, & Cox) indicated that in addition to deficiencies in cognitive areas of development, young children are coming to school without the necessary emotional and social skills. Thirty-six percent of the teachers surveyed, for example, reported that at least half of the children in their kindergarten class lacked the necessary academic skills. However, an even higher number, 46% of teachers, reported that children had difficulty following directions. Twenty percent reported that children in their classes had problems with social skills. These findings indicate that emotional and social issues are related to school readiness and must be addressed if kindergarten children are to be perceived by their teachers as being successful.

Researchers are becoming increasingly interested in this comprehensive, systematic approach to exploring aspects of learning. Goleman's (1995) research has shown that emotions have a potent hold on the thinking mind and that feelings and reason are constantly at war in individuals. Accordingly, we as humans have two minds: one that thinks and one that feels. Consequently, addressing only the cognitive mind through education is addressing only one part of the whole child. Early childhood educators speak in terms of this wholeness, accepting that domains of development—physical, social, emotional, and cognitive—are closely related (Sroufe, Cooper, & deHart, 1992). Early learning experiences are cumulative, and curricula presented during the first 9 years of life should help integrate all domains. For example, children's abilities to establish social relationships may impact language development (Bredekamp & Copple, 1997). After all, children must have knowledge about their own feelings and the feelings of others to be considered intelligent in social situations.

The importance of emotion and social competence has traditionally been devalued in the field of academics. Historically, Western culture has adopted a focus on learning that places a particularly high value on cognitive development. Renowned Swiss psychologist Jean Piaget set the stage for educators' understanding of the cognitive strategies that young children employ from the environment. In his seminal work, *The Origins of Intelligence in Children*, Piaget refers frequently to the importance of emotions, but he is primarily interested in how children's cognitive structures evolve through interactions with objects in the environment (Piaget, 1952; Greenspan, 1997).

An understanding of the importance of emotions became prevalent in the 1940s, 1950s, and 1960s with psychology pioneers Erik Erikson, Anna Freud, Rene Spitz, John Bowlby, and colleagues. Their works emphasize the relationship between early emotional experiences and later personality functioning. In the 1960s, 1970s, and 1980s, researchers such as Sally Provence, Selma Fraiberg, Louis Sandler, Berry Brazelton, and Mary Ainsworth focused on normal emotional development in newborns and young children. The importance of this impressive psychological research did not, however, find its way into educational and prevention policies due to a lack of sufficient empirical or theoretical linkages between emotional and cognitive development (Greenspan, 1997).

Researchers are currently providing neurobiological evidence (Blair, 2002) that we need to rethink traditional strategies for supporting young children's cognitive development. Assessment models currently being used to assess how children learn may need to be expanded to emphasize the importance of social and emotional development, now a seemingly hidden curriculum. For example, the Piagetian model of learning, with a primary focus on children's interactions with objects and materials, fails to recognize the importance of interactions between adults and children in the environment (Goleman, 1995; Salovey, 1997). Since the time that Piaget emerged as the dominant theorist in education, family and community roles for socializing children have changed. The actual amount of time that children spend with their families has been reduced as children spend more waking hours with peers and teachers in social settings that influence their learning.

Cognitive development is important for young children's school readiness and adjustment, but so is the teacher's role supporting their social-emotional development.

Here exists a gap in the literature. This research will evaluate a conceptual model that links social and emotional competence, quality of teacher-child relationships, and young children's school readiness. The model asserts that school readiness is multifaceted, including more than only conceptual knowledge and skills. There is an attempt to disentangle the complex web of relationships governing early learning and to explore the multiple internal and external relationships between domains. The model stresses the interdependence of all three aspects of child development (emotional, social, and cognitive) and the transactional relationship between the child and the environment.

Literature and Research Background

The theoretical framework for this study is derived from literature on contextualism and from educational evaluation theories supported by the contextualist view. This includes systems theory, social ecological theory, ecological psychology theory, and resilience theory (Miller, 1993). In addition, theories on emotional competence, social competence, teacher-child relationships, and school readiness will be reviewed and discussed.

Educational evaluation is grounded in knowledge about human nature and development. Unfortunately, the theoretical orientation of various educational evaluations often remains implicit (Ramey & Ramey, 1995), but it is a close examination of useful theories for planning and analyzing programs. The first educational evaluation theory, systems theory (Miller, 1987), originated from biology and has contributed to advances in studies of human development and family functioning. The theory acknowledges the interdependence among elements and their interactive influences on

development. Systems theorists hypothesize about dynamic environmental systems subject to change over time: the child at the center surrounded by spheres of influence—parents, peers, and teachers. They propose that each variable within a living system has a range of stability that is maintained in equilibrium by transactions between the environment and the system. Variables that force the system beyond its range of stability are stressful. The system, itself, must respond in one of four ways: (1) alter the system, itself, by learning new skills; (2) alter the environment; (3) withdraw to a more favorable environment; or (4) change what the individual system defines as stable or desirable (Ramey & Ramey, 1995).

Systems theory supports the transactional model approach to development that challenges the linear model frequently embraced in formal education (Sameroff, 1983; Bronfenbrenner, 1989). The transactional approach considers the interrelations among behavioral systems and the processes that characterize systems' breakdowns and self-rightening tendencies. The salient features of this approach include the multiple, dynamic, and reciprocal transactions among environment, caregiver, and children. For child psychologists and psychiatrists, the transactional approach proved very effective as an organizing framework for understanding mental disorders and thus became the cornerstone of developmental psychopathology (Rutter, 1996).

Educational evaluation has historically neglected the study of the change process. For example, when programs are deemed to be effective, policy makers have typically wanted to know how the benefits were realized and which particular aspects of the

program were most critical in achieving the desired outcomes. The process of change, itself, is rarely if ever addresses (Ramey & Ramey, 1995).

Social ecological theory (Sameroff, 1983) and ecological psychology theory (Bronfenbrenner, 1989) acknowledge the existence of environmental systems and conceptualize models related to the potential influences of factors on individual systems from different levels. Specifically, (1) individuals within the same environment may respond differently to that environment, and (2) different environments may create similar outcomes for different individuals (Bronfenbrenner, 1979, 1986, 1989; Cronbach, 1960). The environment in which children and families function has been termed the *environtype* (Sameroff, 1983)—the dynamic context containing the transactional relationships in which children live and develop (Bronfenbrenner, 1989).

Adding to ecological models resilience theory recognizes the value of identifying the strengths and positive aspects of children's development in relation to factors in their environment (e.g., families, teachers, schools, and communities) rather than studying negative aspects of development. An identification of children who succeed in life despite the odds and a systematic exploration of factors that contribute to this success are associated with resilience (Werner & Smith, 1982). The theory recognizes individual variations in response to risk environments and challenging life situations and may be viewed as a derivative of social ecological theory (Ramey & Ramey, 1995). The emerging field of prevention science promotes models of risk and protective factors and thus incorporates resilience theory.

Although researchers are becoming interested in various aspects of children's learning, little has been done to link the variables in a conceptual framework, especially one that has as its goal an explanation of early education development. The majority of the existing research focuses on *school adjustment* rather than *school readiness*. What limited research there is on readiness is narrowly focused and fails to consider a transactional model including the school's receptivity. Ladd (1990), however, has examined the relationship between young children's social skills, school readiness, and adjustment. Meisel (1999) has also theorized about models of school readiness. Both researchers indicate that there is a hidden curriculum in schools where emotional and social development are not overtly recognized or addressed, although emotion and social concerns surface daily in classrooms. Young children who are socially and emotionally more mature successfully navigate the school environment better than less-skilled children.

Denham (1986) and Garner (2001) have explored the impact of young children's emotional and social competence and how their knowledge of this hidden curriculum impacts friendship and peer relations. Until recently, however, researchers have not explored the relationship of emotional and social competence to school readiness. Ladd (1990) has explored social competence and school readiness, but has not explored emotional competence. Limited research has been conducted on teacher-student relationships, although children spend a remarkable amount of time with these *other* adult caregivers.

The teacher-child relationship is key to school success. Children depend on teachers' reactions to peers to determine how they, too, should respond to these same peers. In fact, students who are initially rejected by peers are no longer rejected if the teacher responds positively to these same students (Howes, Hamilton, & Matheson, 1994). Pianta (1991) has devised a scale used by teachers to assess the quality of their relationships with students.

Emotional competence has not been readily recognized in elementary and secondary schools, although this has always been accepted as a premise in the early childhood arena. Researchers are, however, providing increasing evidence that emotional competence manifests as does the cognitive stages they accompany (Goleman, 1995; Mayer & Salovey, 1997) that should be addressed as they accompany cognitive stages of development. This area of research needs more exploration. Researchers like Mayer and Salovey (1997) and Goleman (1995) are pioneers in this arena and have provided sufficient evidence to indicate that emotional development is an aspect of social development, and that both impact children's learning.

Research Questions

To determine how school readiness depends on connections between a child's social-emotional development and the student-teacher relationship, two important questions will be asked.

First, what is the relationship between children's school readiness and emotional competencies? What is the influence of age on this relationship?

Second, what is the relationship between school readiness and the quality of the teacher-child relationship? What is the influence of age on this relationship?

Methodology

This is a non-experimental, secondary analysis research design. It is a correlational study that investigates the relationship between aspects of preschool children's school readiness (motor-conceptual-language), social-emotional competence, and teacher-child relationships. Interviews and questionnaires were used for the data that are already collected. This study will examine data collected from fifty-eight children from preschools in a metropolitan area who participated in open-ended interviews about their emotional competencies as part of a previous study. Their teachers completed detailed questionnaires to provide information about each child's social competence and the quality of social competence when interacting with peers. The teachers also rated relationships between themselves and their students. These preschools traditionally administered the Developmental Indicators of Assessment Learning (DIAL) as a measure of cognitive learning for all children while not stressing social-emotional components. Scores from the DIAL (Mardell-Czudnowski & Goldenberg, 1986) will be used to assess the three key components of school readiness (motor, concepts, language). Bivariate correlations, scatter plots, and multiple regression constitute the comparative statistical analysis.

Summary

The explosion of pedagogical research in methodology over the last fifty years points to preparing young children at earlier and earlier ages to become not only

cognitively astute, but children of the future. Psychological and educational researchers are joining forces, combining research from these two streams to genuinely address the learning needs of children in the 21st century; building a better world full of opportunity for each and every child to forge forward and not be left behind. Traditional models of learning were developed and accepted when the roles of families and communities were much different. Now, children spend a majority of each weekday in schools and preschools with adults and peers who may have social and cultural norms different from their own. Social-emotional education is a relatively new role for teachers and requires a reconsideration of current school curricula whose lack of regard for social-emotional development needs to be addressed. While extending and building on previous research, this new study will explore how the connections between social/emotional competencies and the interrelationships between teachers and children impact the previous concept of school readiness, which limited focus to motor, concepts, and language development. This expanded definition of school readiness is pertinent, increasingly endorsed, and presents opportunities for policy makers to make a difference in the future of children and, thus, in building a better world.

Review of the Literature

Discussions about children's growth and development must be grounded in a theory of change (Pianta, 1999). Views of human development are closely tied to views related to the workings of the world and the universe. Three basic worldviews of relevance (Goleman, 1995) emerge from the literature: the mechanistic, the organismic, and the contextual (Overton, 1984; Reese, 1991; Miller, 1993).

The mechanistic view, mirrored by the birth of the Industrial Age, holds that the mind, like the world, operates like a machine in time and space. External forces are responsible for development as they act upon a passive, machine-like mind composed of interlocking parts. In terms of child development, events cause chain reactions that move a child's mind from one state to the next. This philosophy, a product of the Industrial Age, derives from the works of Newton (1642-1727), Locke (1632-1704), and Hume (1711-1776).

The organismic worldview is modeled on living systems, like plants and animals, rather than machines. The world is pictured as organized wholes that transition from one state of being to the next, producing these states out of itself in unceasing succession (Cassirer, 1951; Miller, 1993). Rather than considering external forces, the organismic view considers internal properties of individuals that propel the being in a constantly changing but not random direction. In terms of child development, children are viewed as constructing their own knowledge by actively engaging with the world through a series of stages. Leibniz (1646-1716) is typically associated with the history of this theory.

A third world view, contextualism, holds that behavior can only be understood in terms of its social-historical context, and that all behaviors have meaning. Philosophers William James and George Herbert Mead are associated with this philosophy. Rather than seeing individuals as machines or living systems, contextualists view children as tapestries extending from the distant past to the distant future and from the proximal to the distal; the threads weave forming the pattern of human life (Pepper, 1934). Negating the Aristotelian demand for either/or, contextualists stress that we are the products of *both* organic processes and socio-historical contexts. Everything is the curriculum. Contextualists believe in interactive polarities, beginning with the child itself as the most proximal pole, the seat of learning, interacting with ever-ascending external distal poles. We must not think of distal as being a point — but a vast depth of external influences.

The almost forgotten Russian psychologist Lev Vygotsky (1896-1934) has been resurrected as the foremost theorist of educational contextualism. While his pioneering investigation of children's learning fell into oblivion during the Stalin years, Vygotsky is internationally acclaimed today, and his point of view requires consideration. Until his works were re-translated in the 1970s, Piaget remained the main contributor to children's cognitive development. Vygotsky's research infers that children's development is best understood by looking at the process of change in the context of children's surroundings. Children do not develop because of the external or internal forces alone, but because of an interaction between these forces as the child responds to the environment.

General systems theory extends the contextualist worldview. Stemming from biology, systems theory views human development as anatomical systems influencing

and interacting with one another. Especially as applied to developmental psychology, systems theory has contributed to advances in the study of human development and primary group functioning (i.e., home and school).

Social ecologists use aspects of systems theory as a theoretical framework for discussing change in young children's growth and development. In social ecology, the environment is conceptualized as the context in which children grow and learn. Any discussion about children's learning must consider the environmental influences; the relations between individuals and events. The outcomes of these interactions are manifested as "observed behaviors". For example, Vygotsky would say that a child interacting with teachers who scaffold the learning process would manifest new learned behavior patterns. The theory looks at influential factors in the environment as systems, emphasizing the interdependent nature of elements, and their interactive influence on children's functioning and development. It also provides documentation about the types of processes or mechanisms in the environment that contribute to change (Miller, 1987) within systems. The theory provides a framework for understanding children as biological systems interacting with other biological systems within the environment. Growth and development take place within the context of the children's environment (Vygotsky, 1978) and are influenced by interactions with other systems (peers, teachers) in that environment (Ford & Ford, 1987).

Sameroff (1983), a developmental psychologist with a primary interest in factors that contribute to mental health and psychopathology, uses a social ecological model of development to examine the transactional relations between environmental systems. For

example, he considers relations between children's characteristics (nature) and parent or caregiver behaviors and beliefs (nurture), along with their ethnic, socioeconomic, and neighborhood backgrounds. Sameroff (1983) also uses resiliency theory to examine these transactional relations, determining if there are risks or protective factors influencing the child's development. His major question is whether individual or environmental factors have major consequences for developmental outcomes, or whether accumulated risks control development.

Sameroff (1983) has conceptualized the environment as an *environtype*. Simply stated, the basic genetic-biological and behavioral system is the developing child at the center with three surrounding environmental levels. Level one, the proximal, contains the biological systems closest to the child, those dyadic relationships with the most impact—in the early years parents and siblings, and later teachers and peers. Level two, the middle, represents the child's interactions with small groups, for example in the classroom and on the playground. Level three, the distal, represents systems farthest away, those social institutions; the school system, for example, indirectly affecting the child. In the Sameroffian *environtype*, biological systems constantly interact with one another across and within levels of the model (Pianta, 1999). Each system is a context for development (Sameroff, 1983). For contextualists, perhaps the smallest unit of study would be children in an environmental context involved in a specific activity (Miller, 1993). After all, children's minds are social in nature, and they behave in certain ways because they have needs and goals that involve a specific environment.

The individual child and the social context are integrated in a dynamic process. In accordance with Vygotsky's (1978) social-cultural context theory of human development, children grow by the light of the intellectual life of those adults and peers around them. The only good learning is that which is *in advance* of development, meaning there is a relationship between the actual and potential levels of children's learning. Vygotsky would say, a "zone of proximal development" (ZPD) defines those functions that have not yet matured, but will. The actual developmental level characterizes mental development retrospectively, while the zone of proximal development characterizes mental development prospectively. Development can only be understood by looking at the process of change. Successful educational instruction, therefore, advances a child's learning by accelerating the quality of social interaction what Vygotsky calls "scaffolding" (Vygotsky, 1978; Palinnccsar & Brown, 1984, 1988). In the classroom, this translates into a more competent individual collaborating with a less accomplished learner who is able to leap to a level higher than otherwise attainable alone because of the interaction (Miller, 1993).

Bronfenbrenner (1979) further refines the concept of "context," describing the relationships and interactions of children within levels of the environment in detail. Developmental experiences are organized like a planetary model with the child being a system within subsystems within larger systems (Shonkoff & Meisels, 2000); like those Russian dolls, a set of nested structures, each set within the next (Bronfenbrenner, 1979).

According to this theoretical model, issues related to children's development must always be examined within the following context: 1) levels within the child's

environment, and 2) systems on various environmental levels. For example, if there is conflict in children's lives, what first must be examined are the interactions between children and other systems (parents, other children, and adults) within their immediate environment (home, school). In addition, it may become necessary to look across levels (proximal and distal) at interactions between systems (adults, other children) on these various levels (i.e. home, school, community coordination and collaboration). These are linked social systems, implying that intervention can take place within and between systems, and that intervention on one level may spill over into the next. Bronfenbrenner (1979) depicts "context" as being four levels beyond the individual system:

1) microsystem, 2) mesosystem, 3) exosystem, and 4) macrosystem.

Microsystems are the immediate settings in which children develop. These systems evolve and develop like the individual child, from forces within and without the systems. Examples of microsystems are the child's home, school, and peer groups. Bronfenbrenner describes mesosystems as relationships between microsystems, and they represent the way children actually experience reality in everyday life. For example, the quality of interactions between individuals at home and school influence the way children understand their place in the world.

Exosystems influence children's development, but the child has no direct role. An example may be interactions between the parents' work place environment and the school environment. The employer, for example, may institute policies that affect the parents' ability to participate at the child's school. Some employers may be supportive of

parent absences to handle school-related issues while others may be hostile. Both risk and opportunity flow from the exosystem.

Macrosystems represent the world as it currently exists, but also its potential for change. The social, economic, and cultural aspects of the world greatly affect the child and family and their ability to cope successfully. For example, children living in the United States of America exist in a heterogeneous society. The situation for some of these children is that they are living in families that are members of a subculture (e.g., African American, Mexican American, Native American, Asian, physically or mentally disabled) within the dominant culture. The social, emotional, and cognitive development of those children in relationship with teachers who represent the dominant culture may be better understood within the broader concept of macrosystems.

Within the overall dominant culture there exist minority communities with pervasively diverse lifestyles and environmental contexts for children. The process of child rearing is different among different ethnic groups, social classes, two-parent versus single-parent families, rural versus urban communities, and so on. Culture incorporates historical influences, and aspects of culture influence how children function (Miller, 1993). For example, culture may determine how children express emotions, how they interact with others, and how they acquire and process information.

Bronfenbrenner's (1989) concept of the exosystem and macrosystem is a way to examine the influence of culture on the child-in-activity within the environmental context. Children from minority or subcultures may be negatively impacted by the difference in expected norms at home and school. There may, for example, be different

emotional scripts used at home to cope with conflict in social situations. The Danish school system is based on the whole-child approach and recognizes the importance of all aspects of child development in the educational process. Attitudes about testing, classroom management, and children's socialization differ from that of this nation. Moreover, Danish students generally out score students from the United States in international mathematics and science competitions (Morrill, 2003).

After having attended a kindergarten with no academic activities, Danish students begin formal schooling at age seven. From first through the ninth grade, the same students, evenly divided between girls and boys, remain together as classmates with the same class teacher year after year. Class rosters follow residential patterns. In other words, children who live and play together in the same neighborhood are grouped together in the same class. Typically, classes consist of a mixture of children from a variety of backgrounds (working class, merchant class, and professional class). No attempt is made to group children according to cognitive ability.

As a result of this arrangement, children can rely on interacting throughout the day with a supportive peer group without being worried about being excluded or being a social outcast. The stress of making new friends year after year is non-existent. In addition, tests, quizzes, grades, and report cards are practically unknown in the first through the sixth grade. Emphasis is placed on cooperation and social unity rather than on competition. A high degree of group work characterizes the Danish classroom. Learning results from cooperative projects where students are encouraged to support and help one another. The Danish maxim is, "everyone learns together."

Formerly, Denmark was a homogeneous society with one single ethnic group, one language, and one religion where each individual's social framework aligned with the dominant culture. The problems of a multicultural society are recent history, and educators the world over will profit by how the Danes adapt their successful school system to these new challenges. Similarly, the United States in the last twenty years has undergone a cultural revolution. Caucasian culture, dominant since colonial times, will lose its privileged place of prominence in the coming decade. For example, the student population of one elementary school in Henrico County, Virginia, Crestview Elementary, represents 29 different languages. In Northern Virginia, it is not unusual for the teacher and all the students to speak English as a second language.

This cultural diversity has monumental implications for educational curriculum. One's culture is a component of emotional competence and intelligence. Only by understanding the student's cultural framework can an educator read that child's emotional/intellectual text in a given situation (Mayer & Salovey, 1997). Educational models must derive from a theoretical approach that recognizes the importance of cultural context.

As a contextual study, this research will recognize the school as a microsystem containing a multiplicity of co-acting components within children's environment that, when acknowledged, has the potential of manifesting unlimited capabilities. As a direct result of interactions with peers and adults in the environment, the quality of a microsystem depends on its ability to sustain and enhance development and to provide a

context that is 1) emotionally validated, and 2) developmentally challenging (Bronfenbrenner, 1989).

Emotional Competence

At the center of the microsystem is the whole child with four interrelated sub-parts, components, or domains: physical, emotional, social, and cognitive (Bronfenbrenner, 1989; NAEYC, 1997). Early childhood educators stress that relational thinking is needed to understand children's development, emphasizing that because domains of children's development are so closely allied, growth in one domain (physical, social, emotional, or cognitive) can limit or facilitate development in others. During the first nine years of life, children grow in relatively stable ways through predictable sequences, although their manifestations and the meanings attached to them vary from culture to culture (Piaget, 1952; Dyson & Genish, 1993; Case & Okamoto, 1996; NAEYC, 1990). For example, typically children sit before they stand, walk before they run, and hop before they skip (Mardell-Czudnowski & Goldenberg, 1986).

The recent brain research of neuroscientists (Blair, 2002) envisions the brain as the child's personal and internal environment (Johnson, 1997). Any interaction with objects or individuals in the external environment depends on the structure and function of the brain and must be considered in the development of all domains and not just the cognitive. As development occurs in the various domains, there is ensuing intelligence in each, resulting in a type of multiple intelligence in the child-system. For example, there is intrapersonal intelligence related to the emotional domain and interpersonal intelligence related to the social domain (Gardner, 1983). Educational models for

enhancing children's learning have traditionally adopted a linear concept, preferring to define intelligence as cognition, measurable through standard aptitude tests, but growing evidence indicates that intelligence exists in all of the domains, and that knowledge or competence in each domain can be measured (Mayer & Salovey, 1997).

The literature evidences the existence of emotional intelligence, of no less importance than cognitive intelligence. Emotional intelligence can be taught, measured, and connected to other intelligences and knowledge (Saarni, 1988; Gardner, 1983; Avenill & Nunley, 1992; Greenspan, 1997; Mayer & Geher, 1996). Mayer and Salovey (1997) created a conceptual framework for measuring emotional abilities and knowledge.

This model, the Abilities Measurement Framework, presents the acquisition of emotional knowledge as a continuum ranging from basic skills to more advance skills. The child initially learns to recognize and identify emotions before learning the more advanced skills of regulating their own emotions, understanding the emotions of others, and efficiently managing social interactions (Goleman, 1995). The continuum is described as four levels or branches, arranged from the emerging acquisition of basic psychological processes related to emotional knowledge to higher more psychologically integrated processes related to social competence (Mayer & Salovey, 1997).

The child, first, learns to perceive, appraise, and express emotions. Next, there is the emotional facilitation of thinking. Then, the individual is able to understand and analyze emotions, employing emotional knowledge. Finally, the reflective regulation of emotions promotes emotional and intellectual growth. This model coincides with

Goleman's (1995) five stages of emotional development, where recognition and identification of basic emotions precede competence in handling the emotions of oneself and those of others.

Following is a brief overview of the four levels of the Abilities Measurement Framework to be followed by a more detailed discussion:

Level One: Perception, Appraisal, and Expression of Emotions

Level one of emotional competence is concerned with acquiring and perfecting the ability to identify emotions in one's self and others. On this basic level, the goal is for the child to acquire competence in identifying and distinguishing between emotional facial expressions. The ability to recognize and label emotional expressions is crucial (Mayer & Salovey, 1997). Self-awareness and recognizing a feeling as it is happening is the beginning of developing emotional competence (Goleman, 1995), and facial expressions are the best source of information for conveying feelings (Ekman, 1999).

A sad person, for example, is rarely a smiling person.

Level Two: Emotional Facilitation of Thinking

Emotions are related to thinking, and this second level of emotional knowledge development describes emotional events that assist intellectual processing (Mayer & Salovey, 1997). At this level, it can be determined if children have learned to handle emotions appropriately (Goleman, 1995) by determining if they have the ability to consider different perspectives in various situations (Mayer & Salovey, 1997). An individual may be asked, for example, to think how another person would feel in a given

situation. When asked, “How does the girl in the story feel?” the thinking process permits children to take another person’s perspective.

Level Three: Understanding and Analyzing Emotions

Individuals begin to reason that emotions and situations are linked. Prior knowledge acquired on levels one and two forms the basis for children being able to perceive relationships between the various emotions, that emotions are linked to situations and to relationships. The learning of complexities and contradictions at this level require children’s attunement to subtle signals indicating what others want, feel, or need in a given situation (Goleman, 1995). Sadness, for example, may be linked to loss, and fear may be related to a perceived threat. An example of this multiple perspective can also be seen in a mother’s love for her child at the same time she displays anger (Mayer & Salovey, 1997). For example, a child may ask, “Why did you scold me when I ran into the street if you love me?” In this situation, the juxtaposition of love and anger may seem contradictory to a child but to a parent it is obviously more involved.

Level Four: Reflective Regulation of Emotions

When the growing child begins to internalize the division between feeling and acting he achieves the highest stage of emotional development and understands that emotions can be separated from actions. Reasoning comes into play, for example, when we teach children strategies to think before acting in an emotionally charged situation (Mayer & Salovey, 1997). Educators are now able to teach emotionally mature children effective skills to handle strong feelings and dissipate the anger of explosive situations

(Goleman, 1995). The four levels of emotional development will be discussed in detail in the following sections.

Perception, Appraisal, and Expression of Emotions.

Facial expressions are universal. People around the world use them to communicate feelings of happiness, sadness, anger, and other emotions (Ekman, 1999). By knowing the meaning of these expressions, one may have some indication of another person's feelings. Most of the research on universal facial expressions has focused on a method used for over 100 years, where observers are shown pictures of facial expressions and asked to judge and label emotions depicted (Ekman, 1999; Dalgleish & Powers, 1999).

Ekman (1976, 1999) compiled a data set of previous studies by different scientists in 21 different countries from around the world at different times. In all of the studies the participants were presented with photographs intended to show the emotions of *happy, angry, afraid, sad, disgusted, and surprised*. There was extraordinary agreement in the responses from these studies. Across cultures, the majority of participants in each of the 21 countries agreed on the pictures that showed the emotions of *happiness, sadness, and disgust*. Participants were instructed to choose words from an emotional descriptive word list rather than to use their own words to describe the emotions observed in the photographs. A majority of responses in 20 of 21 countries agreed on the *surprise* expression; 19 of the 21 agreed on *fear*, and for 18 of the 21 countries, there was agreement on *anger*. None of the studies produced any evidence against universality.

For Europeans and Africans alike, an angry face is angry face and not a sad one. There is universal agreement on the signification of expressions formed by facial muscles.

A series of studies conducted between 1971 and 1994 further supported universality. To determine if results would differ from Ekman's study where participants were required to use a pre-selected word list, Izard (1971) allowed participants from America, Britain, Greece, and France to choose their own words to label the emotions depicted in photographs. Boucher & Carlson (1980) used the same strategy of permitting participants to choose their own words while studying Americans and an aboriginal group, the Temuan from Malaysia. Rosenberg and Ekman's study (1994) with different groups from the United States compared responses from one group of participants using their own words to describe emotions to a different group choosing emotional descriptions from a word list. The researchers found agreement between the group responses.

Findings on universality, however, were challenged by a 1993 study when photographs used by Ekman & Friesen (1976) were shown to Greek, Japanese, and English-speaking Canadians. Participants were permitted to use their own words to label the emotions observed. For 17 of the 18 opportunities (three cultures and six emotions), the most frequent words used by participants were those used universally in previous studies. Curiously, there was one disagreement out of the 18, however, when participants from Japan labeled the fear photograph as surprise.

Similar research has been conducted with pre-school age children and their ability to identify and label emotions from pictures. Rather than the photographs of actors

displaying emotions used with adult subjects, the most prevalent method when working with children employs phototypical facial drawings (Iannotti, 1985). Research on young children's emotion knowledge suggests that even preschoolers can infer four basic emotions (happy, sad, angry, and afraid) from expressions or situations (Denham & Couchoud, 1990). The hardest of these facial expressions for children to identify is *fear* (Wagner, McDonald & Manstead, 1986).

Emotional Facilitation of Thinking.

Discrete Emotions Theory (Izard, 1971) asserts that the ability to understand both expressions and situations varies in the same order as the emergence of the corresponding discrete emotional expressions from greatest to least ability. Discrete emotions emerge in the following order: happy, sad, angry, and afraid. Building on Izard's work, Denham and Couchoud (1990) found a link between children's ability to identify facial expressions and their ability to understand the emotional perspective of others in specific situations, what they call "perspective taking." Children less able to identify facial expressions are also more likely to provide incorrect responses when asked by researchers how they would respond to hypothetical emotional situations.

Denham and Couchoud (1990) conducted a study with 53 preschoolers at a university laboratory preschool in a suburb of a major metropolitan area. There were 27 boys and 26 girls, ages 33 to 56 months, the average being 44.88 months. In this study, mothers of the participants were first presented with a questionnaire containing 30 situations. They were asked to identify which of four emotions they thought their child would feel in each situation. The children were then presented with situation vignettes

(a narrative and a picture) familiar to preschoolers and shown four puppets with felt faces affixed with the four emotions of happy, sad, angry, and afraid. Children received 1 point for a response that depicted the emotion actually shown in the situation, and 0 points for any other response. The expressions on the detachable faces had been validated with a sample of 41 adults, where *happy*, *sad*, and *angry* faces were correctly identified by 85 to 95% of the adults. The *fearful* face was correctly identified by only 65% of the adults in the validations study (Wagner, McDonald, & Manstead, 1986). In this study children were given an opportunity to demonstrate the ability to identify the facial expressions of the four puppets either verbally or non-verbally by pointing, prior to responding verbally to the situation vignettes. Of the 53 participants, 41 participants scored either seven or eight of the total possible eight points on this measure. There were two opportunities to identify each of the four emotions.

The children were better able to identify the correct response when asked to choose between a positive and negative emotion. For example, “would you feel happy (positive feeling) or sad (negative feeling) if you have to stay home when everyone else goes out to get ice cream”? It was more difficult for the preschoolers to choose between two negative responses. For example, “Would you feel sad (negative feeling) or afraid (negative feeling) if your pet died”? Older children provided more accurate assessments than younger children.

Stein and Jewett (1986) support these findings and this lack of skill on the part of children to choose adequately between two negative responses. According to the researchers, this lack of ability is based on dimensions differentiating the causes of

happiness, fear, anger, and sadness. The positive emotional state of happiness, for example, focuses on fulfilling a desire. All negative emotional states, however, focus on what is not desired. For this reason, *fear* is one of the last negative emotions to be identified accurately by young children (Michalson & Lewis, 1985).

Other researchers claim that this lack of ability to choose between two negative responses may actually begin to develop in infancy when babies perceive the gestures and changes in the emotional displays of others' faces, voices, and postures. Adults emit and imitate happy expressions most often and fear less often (Malastasta & Havilland, 1982), possibly explaining the ease with which preschool children identify and interpret happiness but have difficulty identifying fear as an emotion. Emotions adults talk about more frequently may also readily become part of children's growing lexicon, as comprehension precedes production (Michalson & Lewis, 1985). Preschool age children have the ability to identify other people's emotions even when their own emotions differ (Denham 1986; Gnepp & Gould, 1985). Children then develop the ability to assign meaning to the facial stimuli of others; for example, "happy" faces are observed when peers get something they like or desire while "sad" faces are seen when someone is hurt or is prevented from getting his or her own way. With this, the collection of emotional scripts available to young children gradually begin to enlarge with children becoming more sophisticated about emotions they observe (Bullock & Russell, 1986). Emotional script development depends on differentiation of facial expressions observed.

Another study by Denham and Couchoud (1990) supports Level Two of Mayer and Salovey's (1997) Abilities Measurement Framework involving children's situation

knowledge or perspective taking abilities. With this study, Denham & Couchod (1990) extended previous research (Michalson & Lewis, 1985; Denham & Couchoud, 1990) by examining the effect of age on interpreting emotions in specific emotional situations. This study investigated four classrooms, with 45 children ages two, three, and four years old in two child care centers. One center was in a predominantly rural area and the other was in a suburban metropolitan area. The 20 girls and 25 boys in the study were heterogeneous as to socioeconomic status (SES).

Children were initially asked to examine four faces made of felt on which expressions of happy, sad, angry, and afraid were drawn (Izard, 1971), and then asked to name the expression. For example, “What is this face feeling”? Next, the child was asked to point to each expression, “Where is the angry face”? Then, children’s ability to interpret emotions in situations or to take another’s perspective was measured when puppets with neutral expressions enacted vignettes and children were asked, “How did the girl feel?” The thinking process needed to respond required the child to put herself in another child’s place, taking another person’s perspective.

Understanding and Analyzing Emotions: Employing Emotional Knowledge.

At this level, higher level thinking skills (e.g., analysis) are required. In addition to the necessary cognitive accompaniment, children now are able to use appropriate discourse skills in order to negotiate conflict and misunderstandings (Dunn, 1988). At this stage, emotion and social skills are difficult to disentangle, as children become more

aware of recognizing and handling their own emotions while interacting with others in social situations.

Garner and Estep (2001) examined the relationship between aspects of emotional competence and preschoolers' social skills. In a study with preschoolers and their mothers, the researchers examined children's knowledge of emotions, their situation knowledge, and children's explanation of causes and consequences of emotions in situations with peers. Results revealed that contextual clues were often used by children to infer the cause of an emotional display and for deciding how to respond in situations (Garner & Estep, 2001). This study focused on 82 preschoolers (44 boys and 38 girls) from upper middle-income families. Participants were from three preschools and were predominantly Caucasian (90%), with 6% Asian American, and 4% Mexican American. Eighty percent of the fathers and 77% of the mothers were college educated.

The researchers used a broad set of variables that reflected both emotional knowledge and emotional management skills to assess emotional competence. Also, social skills comprised both positive and negative aspects of emotions. The findings were consistent with the researchers' predictions that emotional competence is related to young children's social competence. The association, however, is largely dependent on the type of emotional competence and the specific social skill under consideration. These findings support previous research that children's ability to verbalize their own feelings and to identify what others are feeling are important for positive interactions (Youngblade & Dunn, 1995). At this level as children begin to develop emotional

discourses to negotiate conflict, it is evident that cognitive abilities to think and analyze become highly important for social success.

Reflective Regulation of Emotions to Promote Emotional and Intellectual Growth.

At this stage, children further develop their problem solving skills to appraise various situations, observing their own emotions and the emotions of others. This cognitive appraisal is confounded, however, when the child encounters a real or perceived emotional threat and must use higher level thinking skills to solve the problem. The threat triggers a need to think or act in order to manage or cope with the emotional encounter (Lazarus, 1991). This level differs from the previous one as children develop new strategies to create contingency plans and alternative behaviors when responding to difficult situations.

Coping strategies can be observed and indicate internal cognitive events as well as overt actions or behaviors (Schwarzer & Schwarzer, 1996). Stress and coping research studies the process wherein an individual identifies contingent choices, as changing circumstances require changing responses. One can determine whether a person always applies and reapplies the same set of strategies, or whether the individual explores a broad range of tactics that are better adapted to challenging encounters: stability versus change.

Stability refers to a repetitive pattern where individuals can be characterized by preferred ways of coping. These individuals continue to apply the same coping strategies over time, whether or not these tactics result in successful outcomes. The difficulty with

stability as a coping strategy, however, is that people usually go through stages when faced with an emotionally challenging situation. A coping strategy that worked for the individual in the first stage may not work in stage two and may require a different approach in stage three (Schwarzer & Schwarzer, 1996).

For example, if an unfamiliar person approaches one's personal prized possession (stage one of a situation) a specific response is required. Another strategy is in order if the unfamiliar person touches the possession (stage two). If the unfamiliar person runs away with the possession, an altogether different strategy is needed (stage three). Additionally, practitioners of this strategy show a tendency to generalize across situations and to embrace a limited set of strategies to be re-applied, inappropriately, in different circumstances. For example, an individual will use the same coping method when rejected by a peer as when a possession is lost.

A different theoretical viewpoint discriminates between problem-focused and emotion-focused coping strategies (Lazarus & Folkman, 1984). The problem-focused approach is externally oriented, and action is directed towards the offending person, circumstance, or environment. Practitioners of this strategy are usually unsuccessful in solving their problems, but they habitually apply these measures often with detrimental side effects.

The *emotion-focused approach*, in contrast, includes cognitive coping strategies that attempt not to change people, places, or things on the outside, but rather attempt to assign new meaning. This method seeks to change the self rather than manipulate outside objects. This internal restructuring requires considerable effort on the part of individuals

attempting to cope. However, such a practitioner is often rewarded with longer-lasting, more positive results.

Yet, another conceptualization of coping strategies is assimilative versus accommodative coping. Assimilative coping alters the environment while accommodative coping alters oneself (Brandtstadter, 1992). This concept is also referred to as mastery versus meaning (Taylor, 1989) or primary control versus secondary control (Rothbaum, Weisz & Snyder, 1982). All the researchers stress the importance of chronological sequencing. For example, individuals first try to alter the demands presented by the environment. Finding themselves unsuccessful, practitioners then turn inward and reinterpret their plight, finding subjective meaning in the experience (Schwazer & Schwarzer, 1996). This coping pattern is more process-oriented than the others, and is not unlike Piaget's cognitive theory. According to the theory, children are constantly taking in new information from their surroundings. Their initial reaction, according to Piaget, is to transform new incoming data to fit into existing ways of thinking. When this attempt to assimilate information proves unsuccessful as a strategy, children, accommodate the information by adapting existing thinking to the new experience. Assimilation and accommodation mutually influence one another and children's understanding of new information (Piaget, 1952).

In contrast to these so-called dispositional coping styles observed in children (McCrae, 1984), other research with adults focuses on a situation-specific approach which argues that the nature of the stressor is primary in determining the emotional coping strategy. According to the stress appraisal scale of R. S. Lazarus (1966),

McCrae conducted a research study with 255 adults, asking each to name a recent life event. These events were later classified by researchers as being either a “challenge” (75 events), a “threat” (114 events), or a “loss” (66 events). In a second study, researchers asked 151 individuals to recall challenges, threats, or losses within the past six months. With the second study, participants were being required to elicit the cognitive appraisal themselves by assigning their own life event into one of the three available categories. Both of McCrae’s studies found that responses were situation-specific, i.e. the nature of the stressor and the explicit cognitive appraisal are inextricably linked. More simply, situations determine the response. These findings add to Lazarus’ (1991) stress theory-- cognitive appraisal should be recognized as a critical antecedent of coping. The specifics of this link are not however well understood with adults and have not been explored with children (Schwarzer & Schwarzer, 1996).

Social Competence

Young children with enhanced social competence skills are able to use emotional knowledge acquired to negotiate their way through interpersonal exchanges. They practice regulating their emotional experiences by engaging in verbally assertive strategies designed to accomplish their goals in social exchanges while refraining from escalating negative situations or damaging future relationships (Mayer & Salovey, 1997). Subtle, unspoken codes exist within dyadic relationships and small groups that regulate the behaviors of individuals with respect to the goals of the group (Pianta, 1999).

The question of which outcomes should be used to define young children’s social competence is controversial (Hubbard & Coie, 2003). One theoretical position defines

social competence as the acquisition of specific essential skills: problem solving, perspective taking, and person perception (Sarason, 1981). However, by describing social competence in terms of adult-based standards rather than in terms of child-centered perspectives, this approach does not acknowledge the developmental changes that children experience (Hubbard & Coie, 1994).

A more suitable approach for children may be to define social competence in terms of social outcomes, including having friends, being popular or liked by others, and engaging in effective social interactions with peers (Anderson & Messick, 1974; Hubbard and Coie, 2003). Indeed, researchers (Bukowski & Newcomb, 1987; Coie, Dodge & Coppotelli, 1982) have found a relatively high correlation between being well-liked by peers and being perceived by peers as a leader. These two characteristics reinforce one another, as it is difficult to direct others if one is not liked or respected. Regarding young children, however, there is limited research on preschool leadership skills. More is known about young children's peer social status.

Although the definitions of social competence in young children vary, most include the ability to initiate and maintain satisfying reciprocal relationships with peers and the significant adults in their lives (Termine, 1997). To be socially competent is to be able to engage a peer and maintain a mutually satisfying encounter. Four domains of social interaction have received the most attention in the literature: peer group entry, play, pretend play, and conflict resolution (Termine, 1997). A close examination of domains follow:

Social competence: peer group entry. A child's emotional expression, either positive or negative, communicates powerfully with peers (Bretherton, Fritz, Zahn-Waxler, & Ridgaway, 1986) and determines the ease or difficulty of joining peer groups. At school, young children find it easier and more pleasant to interact with more emotionally positive children. They rate happy peers as more popular (Sroufe, Schork, Motti, Lawroski, & La Freniere, 1984), and angry children as not likable (Rubin & Clark, 1982).

Looking for predictors of young children's likeability, Denham and others studied 65 preschoolers, ages three to five years, enrolled in four classrooms of a university laboratory school in the suburbs of a major metropolitan area (Denham, McKinley, Couchoud, & Holt, 1990). Thirty-five boys (average age of 45.26 months) and thirty girls (average age of 43.13 months) participated in the study. Three measures related to young children's likeability were measured: emotion expression knowledge, emotion situation knowledge, and social competence knowledge.

Researchers measured children's ability to recognize emotion expressions by asking the subjects to label four faces on puppets (happy, sad, angry, and afraid). When initially presented with each of the four puppets, interviewers asked, "What is this face feeling?" Next, the children were asked to re-identify these emotions by pointing to the correct puppet when interviewers asked, "Where is the sad face?" This task measures both verbal production and nonverbal comprehension.

Second, interviewers measured children's emotion situation knowledge, using cloth puppets with neutral facial expressions to enact 20 vignettes. In some vignettes the

puppets were presented as feeling the way most people would feel. For example, the puppets felt fear during a negative situation. In other vignettes, the puppets were presented as having feelings opposite from those the subjects' mothers reported they would have. This was designed to be a more advanced measure of situation knowledge. For example, if a subject's mother had reported that the child liked coming to preschool, the puppet would feel unhappy in this same situation. Verbal responses were not required, in order to prevent researchers from confusing children's situation knowledge with children's ability to verbally express themselves. For example, children with limited verbal abilities may be unable to express answers in words although they fully understand concepts. Hence, children's ability to demonstrate comprehension was more important to researchers than the ability to be verbally expressive, in this situation.

Last, classroom teachers were asked to rate the children's social behaviors, ranging from pro-social to aggressive, by selecting cards that best described the particular child from a set of 72 cards with behavioral descriptions. Using a friendliness scale, teachers were asked to rate each child in the following areas: understanding of other children's perspectives, sympathetic, helpful, not insulting or bullying, nurturing, and likely to share (altruistic). Specifically, this scale measures children's pro-social responses to others' emotional needs.

Research findings indicated that gender and age predicted children's likability. Teachers rated girls as being more pro-social than boys. Both emotion expression identification and emotion situation knowledge were significantly related to age ($p < .05$ and $.01$), and age accounted for a significant portion of the variance ($p < .01$). The older

the children were, the greater their knowledge of each of the two predictors. Emotional situation knowledge is a social cognitive ability and, as with other cognitive abilities, is expected to increase with age. Understanding of anger and fear situations were related to peer likeability ($p < .05$). Knowing the difference between happy and sad is normal for preschool children. Those who could not yet distinguish, as evidenced by confused or anomalous answers during the emotion expression and situation tasks, are at direct risk of being disliked, researchers found (Denham, McKinley, Couchoud & Holt, 1990).

Social competence, including likeability or popularity, is related to optimal levels of emotional self-regulation. Optimal regulation is thought to be associated with positive, adaptive behavior, although the strength of this relation is predicted to vary according to the intensity with which emotions, particularly negative emotions, are experienced (Eisenberg & Fabes, 1992). In contrast, those individuals with intense levels of negative emotionality may be overwhelmed and as a result behave more impulsively, negatively, and less constructively than do less emotionally aroused individuals (Fabes et al., 1999). Consequently, self-regulation and emotional reactivity are viewed as interrelated and jointly contribute to children's social functioning and social competence (Cummings & Cummings, 1988; Fox, 1989; Weinberger & Schwartz, 1990).

Emotionality, regulation, and social functioning are indicators of preschool children's social competence. The evidence suggests that differences in preschoolers' social competence and acceptance by peers remain stable well into the elementary school years and adolescence. Even when faced with new social situations and different peers, children assume the same status they held in past groups. This stasis compounds when

children remain with the same social peer group. By middle childhood, for example, it is difficult for a child to break free from a bad reputation even if new social skills have been acquired (Coie & Kupersmidt, 1983; Perry et al., 1990). The research implies the longer children with limited social competence skills are denied developmental assistance, the more problematic for them to negotiate social situations later in life. To conclude, intervention should begin as early as possible to help children learn appropriate social skills. As a corollary, educators need to teach the peers of these children how to tolerate better their social incompetence (Termine, 1997).

Social competence and play. During the preschool and early elementary years, play is an opportunity for children to enhance their social competence skills with peers. In play situations, children may be selective and persistent until they master the behaviors necessary for peer acceptance. Play provides opportunities to learn and develop skills while enjoying the process. Play also imposes a minimum of risk and penalties as children make mistakes while learning the accepted rules to interacting socially. Exploration and play are the trial and error process for finding out what the rules of social interaction are and then experimenting with what to do about errors. This dual experience of pleasure and learning appears to motivate children to willingly extend the trial and error process. Learning the rules and then experimenting with suspending and breaking them, create new thought patterns and solutions (Rogers & Sawyers, 1992).

There are six characteristics of play that set it aside from other activities or pursuits:

- 1) intrinsic motivation, 2) attention to means rather than to the end, 3) non-literal behavior, 4) freedom from external rules, 5) exploratory base, and 6) active engagement

(Almy, Monighan, Scales, & Van Horn, 1984; Anselmo & Franz, 1995). Intrinsic motivation is the first characteristic of play. The child must be self-motivated to participate. Extrinsic rewards, such as pleasing adults or receiving stickers, cannot be the motivation for play.

In play, the means are more important than the end; the process is more important to the child than the outcome. Goals are less important during play, and may change during the play process. For example, children may begin with playing the role of teachers in a school, change to being parents, and then return to the original teacher roles.

Make-believe or play behavior is non-literal, and children may pretend to be whatever characters they desire. They can choose from real life, television, movies, or stories, and be anyone and anything else that captures their imagination.

Play is child-directed and children are free from external rules. The rules come from those involved in the play and often change as the play process evolves. For example, when playing house, the initial rules may be that the mother has to stay home with the baby. The rules may change, however, and it becomes permissible for the mother to work outside the home.

In play, children can explore with their senses, as well. They may touch, smell, taste, and look at objects in the play. For example, children may use several colorful plastic necklaces in the play space to simulate spaghetti needed for a pretend meal.

A sixth and final characteristic of play is that children are actively engaged. Children are intensely involved during play. They are passionately engaged in the

activity and may resist distractions or interruptions. For example, teachers have typically devised strategies for warning children ahead of time that play periods are ending. In addition to verbal warnings, teachers may use pleasant sounding chimes or xylophones. Others may flick the lights.

In a longitudinal study researchers observed 4-to-6 year old preschoolers who later attended kindergarten to explore the connection between normal children's emotionality or regulation and their social functioning in kindergarten (Eisenberg, Fabes, Bernzweig et al., 1993; Eisenberg, Fabes, Nyman et al., 1994; Eisenberg, Fabes, Minore et al., 1994; Eisenberg, Fabes & Losoya, 1997). In this study, peers rated how much they liked to play with each child. In addition, participants indicated with puppets what they would do in conflict situations during play. For example, "What would you do if another child knocked over the block tower that you are building?" Also, mothers and teachers reported their perceptions of intensities of negative emotion, coping styles, and abilities to shift and focus attention (attention control) during interactions (Eisenberg, Fabes, Bernzweig et al., 1993; Eisenberg, Fabes Nyman et al., 1994). The researchers predicted those preschool children scoring high in intensity of negative emotions would score low in positive social functioning. These same children were expected to be relatively unpopular with their peers and to exhibit inappropriate reactions both in real life anger situations and when enacting the puppet vignettes.

In general, Eisenberg and her colleagues' predictions were supported both in intensity and in frequency. Low frequency of negative emotions, high frequency of constructive coping, and high frequency of attention control were associated with high

social competence skills and high acceptance by peers. Boys and girls reported by preschool teachers as being high in negative emotional intensity and low in constructive coping and attention regulation were also rated by teachers as being low in both peer acceptance and social skills. To the contrary, those rated low in intense negative emotions and high in constructive coping were rated by teachers as high in peer acceptance and social skills. Teachers' ratings were confirmed by research observations. For boys, these aspects of social functioning also were related to their acceptance. Boys viewed by the preschool teacher as low in frequency of negative emotion, high in constructive coping, and high in attention control were rated as socially appropriate by researchers who observed children at school. The same boys were liked by peers, as indicated by peer ratings. Teachers' reports of negative emotionality and regulations were good predictors of children's, especially boys', social functioning.

Real-life anger reactions by pre-school boys and girls, when observed in play, were also related to individual differences in emotionality and regulation. Children who reacted with nonabusive verbal actions when angered were reported by teachers as low in non-constructive coping and emotional intensity. These children, for example would say: "Stop that," "I want to play," or "Go away." Aggressive reactions when angered were associated with teacher reports of non-constructive coping and high emotional intensity. Researchers associated escaping or leaving the anger situation with low constructive or non-constructive coping, as well as low emotional intensity. Children who chose to escape the anger situation typically exhibited few coping reactions of any type at school. Specifically, girls who escaped scored low in expressions of intense negative emotions.

Finally, researchers compared reports from both teachers and observers to children's verbal descriptions of what they would do in a conflict situation and in their enactments with the puppets. Children rated high in negative emotionality by teachers scored low in enacted friendliness with peers and acted more aggressively with the puppets. This was particularly true when considering the intensity of children's negative emotions rather than the frequency of negative emotions (Eisenberg et al., 1992). Generally, tendencies to regulate one's own attention and to engage in constructive modes of coping were predictive primarily for boys, whereas negative emotionality and non-constructive coping were predictive of social outcomes for both boys and girls (Eisenberg, Fabes & Lasaya, 1997).

In a two-year follow-up, these same preschoolers were in elementary school with their elementary teachers reporting. The findings were that individual differences in emotionality and regulation predicted the social functioning of the 6-to-8 year olds just as it did at the preschool level. Preschool teachers' reports of children's emotionality and regulation were predictive of elementary school teachers' reports. In this study, relationships across reporters, across measures, and sometimes across settings were established.

Social Competence and Pretend Play. For children, play is its own reward, and as children grow and develop, play changes accordingly. Many researchers and theorists have attempted to classify these developmental changes, but the work of three individuals laid the foundation for what is known about children's play. Mildred Parten (1932)

concentrated on children's play as it primarily relates to social development while Piaget particularly pretend play.

Parten (1932) identified "types" of play: solitary play, parallel play, associative play, and cooperative play. Later theorists agreed that children move from one type of play to the other dependent upon their developmental maturity influenced by both cognitive and environmental factors (Anselmo & Franz, 1995). With solitary play, children interact only with an object. In parallel play, children may be near one another but remain separate from one another. In associative play, children are in small groups, but there is limited sharing and interacting. Cooperative play is more advanced, being essentially social in nature as children begin to share ideas and role-play. Piaget (1952) focused on play as it relates to cognitive development. Vygotsky and contextualists focused on learning that takes place as children interact socially in play,

Pretend play is make-believe, a behavior that is other-than-reality based (Fein, 1981). Pretense may be observed on two levels: solitary symbolic play and collective symbolism (Piaget, 1952). Symbolic play may be observed in children as young as 12 to 15 months of age and is represented by children's imitation of a learned experience. An example of this first performance of play would be when a young child pretends to feed a parent in the same way the parent typically feeds him, offering imaginary food on a real spoon. Collective symbolism typically begins towards the end of year three when the child may pretend to portray family life, and by age four the child can create an entire cast of imaginary characters to populate his play.

Vygotsky (1978) theorized that pretend play serves as a vital context for children to develop self-regulation in social situations with peers. His socio-cultural theory addresses young children's private speech during pretend play. Private speech develops as young children turn social speech towards the self to guide and control their own behavior. With age and task mastery, private speech then diminishes in audibility, turns inward, and transforms to silent inner speech or verbal thought as it takes on a self-regulating function. Private speech has no particular listener and is often used by children in public contexts during play. Naturalistic research reveals that private speech occurs universally among both preschoolers and primary school age children and accounts for 20 to 60 percent of children's utterances in classrooms as they go about their day (Krafft & Berk, 1998).

Krafft and colleagues examined the importance of social pretense in spontaneous play by observing private speech in children ages 3-to-6 years. Researchers had examined the development of private speech among elementary-age children, yet surprisingly few studies had addressed private speech for this younger age. The findings were consistent with Vygotsky's theory that private speech is a critical phase in the transition from external social regulation to internal self-regulation. Children use this unique function to communicate first with the self for guiding their own thought processes and actions (Vygotsky, 1978; Krafft & Berk, 1998). Pretend play serves as a vital context for the development of self-regulation— the ability for personal control in the social context.

Researchers found that incidences of private speech were much higher during open-ended activities, especially self-determined fantasy play rather than during close-ended tasks with predetermined goals. In line with previous research, the more direct involvement or external regulation teachers displayed, the lower the rate of children's private speech. Engagement with peers, in the form of associative play, predicted greater self-directed language. Krafft & Berk's (1998) research derived from the natural setting of school and indicated the need to foster young children's verbal self-regulation during early childhood. These findings contradicted an earlier study in a laboratory setting that examined young children's private speech during open-ended tasks for an extended period of time.

Social competence: problem solving and conflict. Socially competent children are able to use expression knowledge and emotion situation knowledge, perspective-taking skills, and language to solve problems and to prevent or address conflict-related issues (Garner & Estep, 2001; Dunn et al., 1991; Youngblade & Dunn, 1995). This conclusion recalls our earlier discussion of the Abilities Measurement Framework, Level Three, where Mayer & Salovey (1997) presented evidence that social competence correlates with higher levels of emotional intelligence. Conflict resolution is important for children, and their ability to verbalize feelings about themselves and others is important for positive outcomes (Youngblade & Dunn, 1995; Dunn et. al., 1991).

Shields (2001) examined the abilities of low-income preschool children to take another person's perspective and to identify situations that might provoke various emotional responses. Forty-nine children from a New England Head Start program (22

boys and 27 girls ranging from 3 years 5 months to age 5) participated in the study. Caucasians accounted for the majority (70%) of the participants. Others were African American (6%), Latino (14%), and 10% bi-racial (African Americans and Caucasian). Considering previous research by Denham (1986), Shields measured children's ability to integrate expressive and contextual clues to make appropriate inferences about others' emotional experience.

To measure emotional response in typical situations, Shields' team used puppets to enact eight vignettes. When enacting the vignette, the interviewer shunned give-away facial and verbal expressions but simply asked children to guess how the character felt. If the child was unable to respond expressively, they could choose a prototypical feeling face used in a previous recognition task. In addition to interviewing the children, researchers asked teachers at the end of the school year to assess their pupils' ability to integrate expressive and situation knowledge in making appropriate inferences about others' perspective or emotional experiences. Generally, teachers observed that children who made a smooth adjustment to preschool were better able to attune to emotions in this social setting.

School Readiness

There is a growing understanding of the importance of social-emotional school readiness. Two papers commissioned by The National Institute of Mental Health's Child Mental Health Foundations and Agencies Network (Huffman et. al, 2000; Cavanaugh et al., 2000) examined the current state of research regarding social-emotional risks and protective factors that predict early school problems or success. Huffman and Cavanaugh

indicated that there are major gaps between the research on social-emotional school readiness and the implementation of government programs. The researchers warned that it is important to close these gaps if children are to be adequately prepared for school. Socially and emotionally healthy children, according to the researchers' findings, have many though not all of the following characteristics needed for success: confidence, friendliness, good peer relationships, persistence for challenging tasks, good language development, listening and communication skills, and the ability to pay attention.

Other researchers have entered the discussion on whether social competence in early childhood predicts adjustment in kindergarten and the early elementary years. Two distinct models for examining the connections between children's peer relationships and later problems are categorized as being either incidental or causal (Parker & Asher, 1987). The incidental model asserts that success or failure in peer relations is an end in itself, independent of later adjustment. The causal model, however, claims that peer interactions typically play multiple, indispensable roles in the social, cognitive, and moral development of children. Moreover, poorly accepted children are deprived of important sources of support when they are excluded from normal patterns of peer interactions. Thus, according to this model, children's social competence skills impact school readiness. Pertinent research supports this hypothesis.

Ladd and colleagues have found that children who feel comfortable in the school environment and, as a result, become involved in classroom activities with peers are more likely to profit from their educational experiences (Ladd, 1990). Peer relations in the classroom are a major concern to children as they enter kindergarten and progress

through higher grades (Ladd, 1990; Rakieten, 1961). The quality of peer relations in elementary school predicts truancy, classroom avoidance, classroom disruption, and academic failure during adolescence (Parker & Asher, 1987). Middle school students view their friends as a source of support, and elementary students who are rejected by classmates feel lonely in class (Asher, Hymel, & Renshaw, 1984; Asher & Wheeler, 1985).

As young children transition from preschool to kindergarten, they must negotiate an unfamiliar environment without their parents. During this transitional period, close ties with classmates may serve as a secure base from which to explore and to cope (Ladd & Price, 1987; Schwarz, 1972). Children adapt to kindergarten better when they have a friend, develop a larger network of friends, or become accepted by their classmates. Maladjustment is prevalent among children who remain friendless, have fewer friends, or are rejected by their classmates (Ladd, 1990; Ladd & Coleman, 1997; Ladd, Kochenderfer & Coleman, 1996).

Ladd (1990) examined the potential role that children's classroom peer relations played in their initial school readiness and later kindergarten adjustment during the first two months of kindergarten and the remainder of the school year. Measures of 125 children's classroom peer relations were obtained on three occasions during the kindergarten year--at school entrance, after two months in kindergarten and at the end of the kindergarten school year. The sample consisted of 53 children (28 males and 25 females) who participated in a prior investigation of the transition to elementary school

(Ladd & Price, 1987) and 72 of their classmates (38 males and 34 females) who completed kindergarten during the same year.

Participants in the study were predominantly Caucasian and middle class with a mean age of 64.2 months. Before the school year began, parents of participants provided information that characterized the type of relationship their children had with each prospective kindergarten classmate. Specifically, parents were asked to rate the friendships as being one of the following: close friends, friends, acquaintances, or unfamiliar. Two months after school began, interviewers showed children photographs of classmates and asked them to name each peer. The children were then asked to name up to three preferred classmates (“someone you like to play with at school”) and three disliked classmates (“someone you don’t like to play with at school”). The concept of liking nominations was derived from earlier research (Asher, Singleton, Tinsley & Hymel, 1979). As a verification device, or social reality check, teachers circled from the roster the names of the participants’ best friends from their observation. Researchers then used the nominations from these different sources to discover any dissonance as a measure of children’s actual peer status.

To measure early school adjustment in kindergarten, teachers completed a preschool behavior questionnaire and a preschool social competence scale. Teachers also used a daily log to record children’s absences and the number of times they requested visits to the school nurse during the first two months of the kindergarten school year. The Metropolitan Readiness Test (MRT: Harcourt Brace & Jovanovich), administered two months after school began, measured school readiness.

The following four composite school adjustment measures were created for this study: school perception, school avoidance, school anxiety, and school performance. Findings indicated that each of these measures affected children's classroom participation. Having close friends in the new classroom was a predictor of favorable school perceptions by the second month of kindergarten, and those children who made more friends than their peers performed better over the course of the year. Researchers suggested that by establishing new bases for support, children were able to integrate themselves into the academic setting in a way that fostered learning and achievement. In kindergarten classrooms, for example, children are often expected to perform academic tasks in dyads and small groups and are encouraged to work cooperatively with classmates. Children's learning and competence is enhanced when they are permitted to undertake new tasks in the company of a familiar person, as this creates a more familiar and supportive learning environment (Bronfenbrenner, 1979). Researchers inferred that children with a wide network of friends in the classroom found companions with similar academic skills and interests and had a wider choice of peers to turn to for help-seeking and other forms of collaboration (Ladd, 1990). This research supports the idea that social competence in terms of making and maintaining friendships is beneficial to school readiness and adjustment.

Asserting that early school readiness and adjustment are determined by more than cognitive abilities, researchers have developed and evaluated a conceptual model that supports the notion that children's transition to school needs to move beyond the current focus on general intelligence (Dodge et al., 1990). The current cognitive/linguistic focus

in education is insufficient to address the issue of school readiness and adjustment.

Moreover, children with multiple deficits have the most difficulty making the transition to school (Belsky & MacKinnon, 1994). Children lacking skills such as communication, problem-solving, coping, and caring are at risk for future displays of aggression and other peer-related problems. In addition, little research has actually addressed the influences of these multiple factors on school readiness or adjustment (Ladd, Birch & Buhs, 1999).

This new model certainly does not minimize the importance of cognitive/linguistic maturity but asserts that there are other entry factors that contribute to school readiness: preschool experiences, ethnicity, culture, social-emotional competence, and family background (especially parent education and socio-economic status). The model also specifies multivariate pathways wherein the above-mentioned entry factors influence children's participation in classroom activities that involve interpersonal relationships with peers and teachers. This association between children's school entry factors is thought to be mediated by classroom participation which is then influenced by children's own social competence (Ladd, Birch, Buhs, 1999). Although entry factors may exert direct effects on early school adjustments, their primary mode of influence is indirect or mediated through child and environmental factors that are operative in the school setting, including children's classroom behavioral styles, relationships, and participation (Alexander & Entwisle, 1988; Connell, Spencer, & Aber, 1994; Connell & Wellborn, 1991; Ladd, 1989).

Teacher-Student Relationship

Children not only do better in kindergarten when they maintain friendships and peer relations, but also when they form close, rather than conflicted, ties with teachers (Birch & Ladd, 1998, 1997, 1996). Indeed, one longitudinal study (Ladd, Birch, & Buhs, 1999) with 200 kindergarten students (mean age 5.58 years) found that as children enter school, stressful aspects of peer/ teacher relationships adversely impact classroom participation and achievement.

Kindergarten classes are comprised of teachers and students, and there is a shared understanding that transfers between the adults and children as they interact. This sharing enhances children's abilities to express their thoughts and contributes to the most important bond of trust. However, the relationship between teachers and students is not unidirectional as is often thought. The teacher is the adult in the classroom, but children's behaviors affect the teacher's behavior and vice versa. This transactional model stresses that as active partners in the student-teacher relationship, children contribute heavily to the construction of their own knowledge and skills. Thus, education becomes collaboration.

Investigators have noted children's tendency to move "towards" (prosocial) or "against" (antisocial) others (Caspi, Elder & Bem, 1987). Prosocial styles have been linked to positive social and scholastic outcomes during kindergarten. In contrast, antisocial styles of relating have been associated with school maladjustment, including loneliness, peer rejection, teacher-child conflict, and conduct problems (Ladd & Burgess, 1999; Birch & Ladd, 1998; Ladd & Price, 1987). The relationships that children form

with peers and teachers result in various social supports or social stresses that either facilitate or interfere with classroom adaptation (Birch & Ladd, 1996; Ladd, Kohcenderfer, & Coleman, 1997). Children who learn the value of establishing a warm, harmonious connection with their teachers early in the relationship are more likely to adjust successfully and to be more well-regulated and less angry (Shields, 2001).

Asserting that sociability is multidimensional, some researchers place a greater emphasis on children's relationships with teachers than on children's relationships with peers. This research stream maintains that adult-oriented social competence on the part of children better facilitates their adjustment to elementary school. Harper & Huie (1987) found that conditions fostering early development of a preference for involvement with peers, as opposed to adults, may reflect a social orientation that interferes with later academic success in grade school. This longitudinal study conducted in the United States included 211 participants (105 boys and 106 girls) ranging in age from two to five years. A majority of the 211 participants was from Caucasian (139 children) middle class homes. The remainder was from Caucasian lower-class homes (48 children) or Mexican migrant (24 children) farm workers' camps. All participants spoke English.

For an eight month period, the children's preschool classroom interactions were observed and coded by researchers as either initiating contact with peers or initiating contact with adults. In a follow-up study, day-to-day preschool preference (peer versus adult social interaction) was correlated with later academic achievement. The school districts recorded standardized achievement scores differently. Because it yielded the largest data set, researchers opted to use third-grade achievement scores as the outcome

variable, resulting in a sample of 23 boys and 27 girls from the original preschool population. These third grade scores were collected for the following seven tasks: vocabulary, reading comprehension, spelling, mathematical computation, mathematical concepts, applied mathematics, and language skills. Researchers found a positive correlation between preschoolers' involvement in adult contact (i.e. adult-directed activities such as art and books) and grade-school achievement in academic subjects. Furthermore, researchers determined that children choose to interact with peers at the expense of interest in adult-supervised activities, supporting earlier research (Belsky & Steinberg, 1978) that early peer orientation may interfere with later school success.

Some theorists have borrowed key constructs from literature on parent-child attachment to identify desired qualities of the teacher-child relationship. The dyadic relationship is then described in terms of being secure, avoidant, or resistant/ambivalent (Howes, Hamilton, & Mathason, 1998). A different approach examines this dyadic relationship in terms of proximity-seeking or relatedness (Lynch & Cicchetti, 1992), using student reports to look at relationship patterns varying in emotional quality: optimal, average, confused, deprived, and disengaged.

Still other researchers have defined the quality of student-teacher relationships based on teacher reports. Pianta and Steinberg (1992) have indexed teacher perceptions on the Student-Teacher Relationship Scale (STRS). The scale terms based on attachment theory and student-teacher interactions, examines the dimensions of warmth, security, anger/dependence, and anxiety/dependence. These are equated to three distinct factors: closeness, dependency, and conflict/anger (Pianta, Steinberg & Rollins, 1995).

Birch & Ladd (1997) used the STRS to examine the impact of student-teacher relationships on children's early school adjustment. This was a longitudinal study with 206 full-day kindergarten children and their teachers ($n=6$) from eight public elementary schools in three mid-western communities that ranged from rural to moderately urban. The sample of 98 girls (47.6%) and 108 boys (52.4%) with an average age of 5.58 years included Caucasians (73.3%), African-Americans (20.4%), Hispanics (1.9%), and other ethnicity (4.4%). Teachers used the STRS to rate 35 statements in terms of their relationship with each participant in the study. In addition, teachers rated the following abilities of individual children: 1) school readiness (letter recognition, ability to discriminate among visual symbols), and language and listening skills; 2) school liking or avoidance; and 3) school adjustment.

Interviewers asked the children to respond to 27 questions on the Loneliness and Social Dissatisfaction Questionnaire (e.g., "Do you have kids to play with at school?"). Birch and Ladd found that teacher-child "closeness" accounted for a significant portion of the variance in the visual and language skills. Teacher-ratings of dependency were related to children's reports of loneliness. Those rated as more dependent by teachers self-reported as being more lonely. Teachers reported that girls like school more than boys and reported more school avoidance for boys than girls. Children characterized by higher conflict or dependency were seen as less cooperative. These findings suggest that the student-teacher relationship is a critical component of the school adjustment equation.

Another study (Pianta & Steinberg, 1992) of more than 400 kindergarten children and their 26 teachers determined that five dimensions accounted for teachers' perceptions

of their relationship with students: conflict/anger, warmth/closeness, open communication, dependency, and troubled feelings. The first three dimensions were directly related to promotion to first grade. Children who were retained in kindergarten had higher scores on the conflict/anger, dependency, and troubled feelings dimensions than children not retained. These differences remained even after controlling for children's classroom behavior (i.e. inappropriate behavior with peers or noncompliance (Pianta & Steinberg, 1992).

In another study, researchers used kindergarten screening test scores at school entry to identify a group of children who were highly likely to be either retained or referred for special education, as predicted by screening data. Teacher ratings on the STRS for children from this high-risk group who were ultimately retained or referred were compared with those from this same high risk group who were promoted. Teachers rated the promoted group as lacking conflict and having a high degree of open communication. Researchers concluded that the STRS measured the buffering effect of the relationship between the child and the teacher (Pianta et al., 1995).

Pianta analyzed patterns of kindergarten teachers' perceptions of relationships with their students and identified six clusters: *dependent, positively involved, dysfunctional, functional/average, angry/dependent, and uninvolved*. Pianta discovered that dysfunctional and angry/dependent relationships had the most problems in first grade. A tendency to be uncommunicative about personal information and not relying on teachers for information or help characterized uninvolved relationships with a limited emotional link between the child and teacher.

Positively involved children showed behaviors that were typical in secure relationships. They shared personal information, appeared comfortable with dependency but were not too dependent; and showed positive affect when responding to or interacting with teachers. In kindergarten, these children had the fewest behavior problems and the highest levels of competent behaviors in both the social and instructional areas. In first grade, teachers viewed this group as the most competent of the clusters.

The opposite was true for the *dysfunctional* teacher-student relationships, a group viewed by teachers as needing intervention. Dysfunctional relationships were characterized as emotionally negative, conflicting, angry, and disconnected. Teachers in dysfunctional relationships felt unable to reach these children and thought about them outside of work and the school environment. First grade teachers rated these children the least competent.

These many research findings indicate that a path exists towards school successes or school problems in both social and academic arenas. Where there are student-teacher problems, some form of intervention needs to change the relationship's trajectory (Pianta, 1994). Children perform at higher levels in some settings than in others, depending on both the student and the teachers' experience not to mention the characteristics of the tasks presented. Other reasons for success or failure relate to the type and degree of social supports available to children and to the motivation of teachers and students to solve problems in the educational environment (Miller, 1987). Children eventually internalize the model of problem solving that was first supported socially in play for later use in school situations involving peer interactions. Both social interaction, and the

language involved in play are internalized (Miller, 1993) as children grow into the intellectual lives of peers and adults around them. This initial learning awakens a variety of internal developmental processes that are available to interact with people in the environment and in cooperation with peers (Vygotsky, 1978).

Contextualists view the teacher's task as building a bridge between children's present abilities and future skills. Vygotsky's (1978) calls the gap between the two, the zone of proximal development. The ZPD is the differential between the actual and the potential level of ability. The actual developmental level characterizes achievement retrospectively, while the zone of proximal development characterizes development prospectively (Vygotsky, 1978). Learning occurs when the teacher "scaffolds" the student so that s/he reaches a level higher than could be attained in solitude. The Vygotskian model conceives the child not as static being frozen in a particular stage of development, but as a partner with the teacher in a dynamic process of learning. The process is more important than the outcome regardless of whether, for example, the answer the child gives is correct or incorrect. Education occurs as a by-product of student-teacher interaction (Palincsar & Brown, 1984, 1988), quite different from instruction whose etymological roots describe the pounding in of facts and figures and their passive reception by victims of this method of learning.

The instructor is the warden of the classroom rigidly regulating the students and the classroom. The Vygotskian teacher, on the other hand, shifts from teacher regulation to child initiation by structuring a developmentally challenging learning environment (Moll, 1990). The adult adjusts the level of guidance to the child's response, with the child

collaborating with the adult to construct actively new knowledge and skills. The child is a partner in the process of moving through the zone of proximal development according to individual temperament and personality attributes.

In this context, Bronfenbrenner (1989) describes how the child's nature affects the social context in four ways:

1. Children's personal attributes encourage or discourage reactions from other people that facilitate or damage development. There are biological and psychological characteristics of the child that influence and are influenced by others (Bandura, 1977).
2. Individual children differ in their tendency to approach or avoid certain aspects of the environment. These temperamental differences are sometimes referred to as extroversion, introversion, or shyness. Some children seek loud, multi-person contexts while others prefer quiet, two-person contexts (Miller, 1993).
3. There are also differences in children's tendencies to create, engage, and persist in complex activities, or seek constant change (Bronfenbrenner, 1989).
4. Age makes a difference in how children approach activities or adapt to new activities.

Vygotsky would say that the only good learning is that which is in advance of children's development. Thinking, remembering, and attending are not activities of only one individual because they are first carried out between individuals in the zone of proximal development with the teacher as bridge builder (Vygotsky, 1978).

One research-based curriculum and teaching approach designed to scaffold social and emotional skills in preschool children three to six years of age is the AI's Pals: Kids

Making Healthy Choices Program. With resiliency theory as a base, Al's Pals introduces young children to social-emotional concepts and skills. Developmentally appropriate strategies are used to provide real-life situations in the form of 46 interactive lessons to teach children to: express themselves; make and keep friends; accept differences in people and situations; solve problems peacefully; cope with difficulties; gain self-control; use kinds words; and make safe and healthy life choices. Puppetry, original music, role play, and interactive scripts in the form of lessons are the tools.

Three puppets are used to teach the social-emotional concepts. Al, the main puppet, serves as a role model who expresses clear norms that use of violence and unhealthy decisions are not acceptable for children. Al and two puppet pals, Ty and Keisha, are brought alive for the children through the curriculum's puppet script that prompts interactive lessons. The three puppets engage the children in discussion and activities, providing the opportunity for practice in getting along with others by using kind words, stopping and thinking, sharing, trading, and taking turns. For example in one script, the puppet Ty reflects with the puppet pal Keisha about a recent situation in which he wanted a puppy belonging to a peer. He wanted the puppy so badly that he initially thought to grab it from the owner. Before doing so, however, he remembered the "calm-down steps" he had learned at school. By employing the "calm down" strategy of taking deep breaths and saying "calm down" several times to himself, Ty revealed to Keisha that he was able to regulate his behavior in a socially appropriate way. He was able to use the strategy taught in school to regain his composure and prevent himself from making an unwise choice.

In addition to puppet scripts, the curriculum uses 12 original songs to capture and reinforce pro-social concepts and to serve as effective teaching tools. When teachers begin a new Al's Pals lesson, they send a parent letter home explaining the concept under discussion and providing suggested at-home activities to reinforce social-emotional learning.

In each class, an individual-sized space is reserved for children's use, typically a corner outfitted with comfortable pillows, throws, and Al art. Children are encouraged to go on their own to this space, Al's Place, when they feel stressed or feel the need to separate from the group. Teachers monitor the use of Al's Place to ensure that the space is used appropriately. Temporary separation from individuals and situations is one of Al's Pals coping strategies for children dealing with strong emotions. Self-separation helps children regulate behaviors and prevent inappropriate interactions and inevitable punishment that destroys the relationship of trust with the teacher.

The Als' Pals intervention was developed at Virginia Commonwealth University in 1993. Staff at VCU's Virginia Institute for the Developmental Disabilities (now The Partnership for People with Disabilities) conducted a series of interviews in the VCU area as part of the Resilient Child Making Healthy Choices Project. The interviews led to dialogues with key community members and revealed that children as young as three, four, and five years old were repeatedly being observed displaying aggression and difficulty relating to others in positive ways during play. In addition, teachers and administrators expressed discomfort and lack of knowledge and skills about how to respond to the situations observed. Teachers repeatedly shared feelings of helplessness

and hopelessness as they searched for strategies to help them guide children in developing positive attitudes and behaviors (Lynch et al., 1999).

Using resiliency theory and research as a base, Al's Pals developers began to use a team approach to help solve these problems. The team of experts assembled included specialists from pertinent fields: early childhood, child development, social sciences, substance prevention, and mental health. The team began to work closely with preschool teachers and administrators in the state of Virginia, implementing Al's Pals curriculum as an intervention to teach needed social-emotional skills. The program later expanded to Michigan and Missouri, during which time evaluation data collected began to show that the piloted curriculum was making a difference in young children's behaviors.

Preschool teachers piloting the program provided anecdotal and empirical data on Al's Pals effectiveness. Using the Merrill Preschool and Kindergarten Behavior Scale, teachers rated children's behaviors in five separate studies over a three year period in the three states and demonstrated that children who participated in Al's Pals made significant gains in social skills. Children who did not participate in the program did not make these gains, with some children actually displaying more aggressive and antisocial behaviors over time. These antisocial behaviors included teasing or making fun of others, hitting, kicking, pushing, calling people names, bullying, and destroying things that belong to others. This evidence supports the following conclusions for the preschool setting: (1) there is a connection between social and emotional skills and competence; (2) young children can be taught social-emotional skills; (3) exposure to the Al's Pals intervention enhances social-emotional competence; and (4) teachers are crucial to this learning

process. However, yet to be researched are how AI's Pals influence cognitive competence, school readiness, and student-teacher relationships.

Evidence that AI's Pals made a difference in preschool children's social-emotional competence led to the development of booster lessons for use in early elementary grades. Booster lessons appealed to elementary age children and were designed to help children retain the skills initially learned in preschool. In order for elementary students to grasp core subjects like English, math, science, and history, social-emotional skills are prerequisite to participation in classroom discussions.

Although AI's Pals has been designed to appeal to young children, the program must be implemented by trained teachers. A two-day intensive training provides preschool and elementary teachers with strategies for guiding children to accept gradual responsibility for their own behaviors. Teachers are provided with skills to do the following: to use the methodological lessons and activities to teach social-emotional skills; to interact with children throughout the day in ways that help them choose self-control; to help children solve their own problems and handle disappointments; to establish caring classroom environments that foster positive social-emotional growth; to establish classrooms that exhibit cooperation, respect, and responsibility so children feel valued and cared for; and to communicate effectively with parents to support young children's social-emotional development.

School administrators attending AI's Pals training are encouraged to provide opportunities for parents to participate in the "Here, Now, and Down the Road," the parent component of AI's Pal's training. These coordinated efforts between classroom,

school, and home are intended to promote children's independence, social skills building, and flexible thinking ability (Lynch et al., 1999). Importantly, Al's Pals workshops stress that teachers should be learners too, versatile and open to change. A child's disruptive behavioral incident is not just an event to be dealt with as quickly as possible so the lesson can continue, but an opportunity for social-emotional growth for both the adult and the child involved.

Research-based conclusions indicate that teaching is a complex intellectual activity played out in equally complex social settings. No other intervention can make the difference that a knowledgeable, skillful teacher makes in the learning process. For example, skilled and caring teachers understand how particular learners think and reason, where they have problems, how they learn best, and what motivates them (Darling-Hammond, 1999). When teachers designate themselves as learners as well as teachers, they set the stage for fluid relationships between themselves and students. Teachers and students, then, partner in the endeavor called education (Cochran-Smith, 1999).

Summary

Most researchers in colleges of education would support the notion that it is important to base intervention and practice on relevant theory. However, many practitioners in the classroom are unable to describe a conceptual basis for accomplishing this task. This "science-practice duality" is pervasive (Zins, Travis & Frepon, 1997). Teachers in the classroom are frequently seen by researchers as being more reactive than reflective and more routine than conscious (Brubacher, Case, & Reagan, 1994). Researchers criticize practitioners for not making use of empirical findings in their field

of interest. On the other hand, practitioners complain that cloistered researchers do not understand the daily demands of practice and are typically not able to demonstrate relevance in meaningful ways. This tension between research and practice has been observed in virtually every discipline and is so common that separate disciplines have evolved in some realms of study, such as with educational psychology and education (Beutler, Williams, Wakefield & Entwisle, 1995).

To link empirical findings and educational classroom practice, then, requires strategies that decrease this tension. Such strategies require reflecting on how research findings can better advance educational practice and how practice can inform research. Bridging this gap is challenging, but success is more likely when researchers and practitioners combine efforts and resources. According to Zinn and others (1997), this can only be done when interventions are based on the following three factors.

First, planned interventions must be based on knowledge of factors that both contribute to and inhibit desired outcomes. Finding out what works, as well as what does not work, is necessary. This requires an extensive review of the literature. Second, relying on the literature and knowledge base, a potentially promising approach is identified. Third, the potential approach must consider the context of the child's environment, from microsystem to macrosystem (Bronfenbrenner, 1989). Approaches should target both the individual and the population at large. They should also include families to help ensure cultural relevance. The entire educational system and community should be involved in planning and implementation. In addition, any approach must be in

place for multiple years and integrated as part of the overall curriculum. In essence, an effective intervention strategy must be inclusive and integrative in nature.

A review of the current literature revealed that interventions for young children with components of emotional, social, and cognitive competencies combined with student-teacher relations are not readily available. Although the creators of Al's Pals claim to improve young children's social-emotional skills, no objective third-party research has been presented to explore whether this program benefits cognitive development or impacts positively the student-teacher relationship. This current study seeks to disentangle the complex connections between these four variables affecting school readiness. How are social-emotional and motor-concept-language school readiness competencies connected? What is the contribution of the student-teacher relationship?

Definitions

Cognitive: domain of development related to language development, analyzing, problem-solving and memory.

Coping: regulation in stressful contexts; changing cognitive and behavioral efforts to manage specific external or internal demands that are appraised as taxing or exceeding the resources of the individual.

Emotion expression knowledge: identification of emotions by pointing to line drawings of faces depicting basic emotional expressions.

Emotion situation knowledge: identification of emotions by pointing to line drawings of faces that have the same emotion as the child in a story/vignette read to the child.

Emotional competence: the demonstration of self-efficacy in emotion-eliciting social interactions. This competence is based on having access to one's own feeling and range of emotions; the capacity to effect discriminate among these emotions and eventually to label them; and to draw upon them as a means of understanding and guiding one's behavior in situations.

Environment: all of the surrounding conditions and influences that affect the development of a child.

Friendship: the establishment of a particular dyadic relationship between two children, a relationship characterized by strong mutual liking, a mutually expressed preference for one another, and a sense of shared history.

Peer acceptance: the extent to which a child is liked or disliked by peers and accepted or included into activities.

Relationship: the connection between individuals, groups, or others.

School adjustment: the ability to fit or adapt to the school environment, including accommodating oneself or making necessary changes to settle into the academic and social conditions of school.

School readiness: a comprehensive construct, including children's knowledge across all the domains (physical, motor-concept-language, and social-emotional); considerations of home and school environment; adult and peer relationships; and interactions with materials.

Social competence: the ability to be effective in social interactions; realizing constructive social goals such as having friends, maintaining interactions, and being liked by others.

This competence relates to interpersonal intelligence and builds on a core capacity to notice distinctions among others; in particular, contrasts in their moods, temperaments, motivations, and intentions.

Self-efficacy: *the capacity and skills to achieve a desired outcome.*

Emotion-related vocabulary used in the present study (e.g., emotion expression knowledge, emotion situation knowledge, emotional competence) was based primarily on language used in previous research on social-emotional competence (Shields, et al., 2001; Garner et al., 1994; Denham, et al., 1990).

Methodology

Design

The research design for this correlational study represented a non-experimental secondary analysis of pre-collected data already in existence. The primary objective was to investigate the relationship between children's school readiness and emotional competence, social competence, and the quality of the teacher-student relationship. To measure relationships among these variables, two statistical procedures were used: bivariate correlation and multiple regression analysis. Scatterplots provided graphic representation of the relationships between the variables.

Sample

Participants for this study included 58 preschool children sampled in an earlier investigation of 74 young children's social and emotional development (Garner, unpublished). The children, aged 3 and 4 years, were enrolled in three inner city preschool sites in Richmond, Virginia. Sites were selected for compliance to the following criteria: participation in a consortium of inner city child care centers that enrolled both private-pay and Head Start children, willingness to participate in the study, and willingness to have researchers come to the centers. Optimally, the total number of subjects would have included the original 74 children from the Garner (2001) study, but some relocated before the data-collection phase could be completed. Thus, 58 children with complete data sets constituted the final total number of students participating in this study.

Measures

Five measures were used to assess the relationship between the dependent variable, school readiness, and the independent variables: children's emotional competence, social competence, and the teacher-student relationship. For the specific purposes of this study, *school readiness* was defined as the summed score from measures of three traditional core indicators: motor, conceptual, and language (M-C-L). Emotional competence was measured in two aspects: expression and situation. Data sources were pre-existing and emerging. The Garner study provided three measures: emotional expression knowledge, emotional situation knowledge, and social competence. Concurrent with this study, teacher-student relationship data became available (Denham, McKinley, Couchoud & Holt, 1990) from in-house educational workshops at the three sites. To complete the list of component measures, screening scores for M-C-L development also became available at the end of the data-collection phase.

Emotional expression knowledge. Expressive labeling and receptive comprehension measures of children's expression knowledge were obtained by researchers ($n = 58$; $\alpha = .81$). Participating children were presented a set of six facial displays originated by Iannotti (1985): *happy*, *sad*, *angry*, *surprised*, *afraid*, and *neutral* prototypic facial line drawings. Many researchers have employed Iannotti's prototypes with children (Denham, 1986; Garner, Jones, & Miner, 1994). Each child was required to perform two tasks. First, the child was shown the drawings, one at a time, and asked *to verbally label* for each of the six depicted emotions: "How does he or she feel?" Second, after completing this task, the child was asked *to point* to the face that matched the

affective label used by the interviewer: "Show me the face that is happy." The interviewer labeled the emotion for any facial drawing the child could not label; for example, "This is the happy face." Administering this measure took approximately 10 to 15 minutes per participating child. A score of 0, 1, or 2 was awarded for each response (Denham, 1986; Garner et al., 1994).

For the first task, two points were received if the child correctly identified the emotion. For example, the child appropriately responded "happy" or "sad" to the question. Acceptable expressive synonyms were "mad" for *angry*, "scared" or "frightened" for *afraid*. One point was received for a behavioral description (e.g., the happy face was "laughing") or for a global descriptive, a response that was almost correct. For example, the child responded "good" or "bad" to the question. For responding with an incorrect feeling-response within the same domain or valence as the target emotions, the child received 1 point. For example, the child identified a *sad* expression as *mad*. Zero points were awarded for incorrect responses (Denham, 1986; Denham, McKinley, Couchoud, & Holt, 1990; Garner et al., 1994).

In the second task, children received 2 points for pointing to the correct picture. For example, "Show me the happy face" or "Show me the sad face." One point was received for indicating a picture of the same valence as the targeted emotion, and 0 points for selecting an incorrect picture (Iannotti, 1985). In previous research, all spontaneous recognitions, whether during naming or pointing tasks, were included for error analysis. Cronbach's alphas were .73 for both the naming and pointing measures (Denham & Couchoud, 1990).

Emotional situation knowledge. After completing the emotional knowledge assessment, the researchers presented participants with two vignettes for each of five target emotions (*happy, sad, angry, afraid, surprised*) to measure emotional situation knowledge ($n = 58$; $\alpha = .65$). This time, the *neutral* emotion was excluded. The interviewer read to the child ten emotion-eliciting vignettes described in previous research (Denham, 2001; Garner et al., 1994; Michalson & Lewis, 1985; Ribordy, Camras, Stefani, & Spaccarelli, 1988). The short vignettes involved situations familiar to preschool children, and none depicted circumstances in which a child might be expected to disguise or conceal emotions. Vignettes were read one at a time, as the child sat across from the interviewer and faced the array of drawings.

After hearing the story, the child was asked to identify the feelings of a central character that was the same gender as the child. For example, “How did the girl feel when she found that her tower of blocks had been knocked over?” Next, the child was asked to guess how the protagonist in the vignette would feel in the situation described. For example, “Did she mean to knock over your blocks, or was it an accident?” If the child was unable to respond expressively, s/he was shown the array of faces and asked to point to the face that indicated the appropriate emotion for the story character. To avoid confounding emotional situation knowledge with expressive fluency or verbal labeling, children unable to respond orally were permitted to point to the feeling face that correctly corresponded to the vignette. Administering the test required interviewers to be careful not to provide facial or verbal clues when reading aloud the emotion-eliciting vignettes.

In accordance with previous research (Denham, 1986; Garner et al., 1994), responses were scored on a scale of 0, 1, or 2, as with the expressive knowledge assessment. Two points were awarded for each correct response. Two points were also awarded if the child responded verbally or pointed to the correct facial prototype. One point was given if the response was almost correct: identifying the positive or negative dimension. No points were awarded for a totally incorrect response. Children's responses were standardized within each target emotion, then summarized across emotions to compute a situation knowledge composite. Thus, here each child receives one score as they do for each of the independent variables. In summary, for both emotional knowledge measures, the Cronbach's alpha assessing the internal consistency of the composite of this measure was .66. .

Social Competence. ($n = 74$; $\alpha = .91$), investigators employed the Pre-School Socio-Affective Profile to measure the affective quality of children's relationships with peers and teachers (LaFreniere & Dumas, 1996). The PSP has three subscales with 10 items each: angry/aggression, anxiety, and social competence. Teachers evaluated each child, using a 6-point Likert scale (1 = never; 6 = always) for each item of the subscales. Teachers were asked, for example, if the child "comforts or assists another child in difficulty," or if the child is "disrespectful of the teacher." For the purposes of the current study, however, only scores from the social competence area of the PSP were considered for comparative analysis with the other variables.

For the PSP (now renamed the Social Competence and Behavior Evaluation [SCBE]) previous research has demonstrated that test-retest reliability rates high

(LaFreniere & Dumas, 1996). Alpha statistics showed that each of the eight scales had a high degree of internal consistency ranging from .80 to .89. Research has demonstrated construct validity as all three scales are correlated with their corresponding scales from the original measure and with the Revised Behavior Problem Checklist (LaFreniere & Dumas, 1996). Cronbach's alpha was used to evaluate the reliability of the measure for this sample.

Teacher-Student Relationships. Researchers have used the Student-Teacher Relationship Scale by Pianta (1988) to assess teacher perceptions about their relationships with children in their classroom (Birch & Ladd, 1997). The STRS is a 30-item self-reporting instrument used to measure three key dimensions of teacher-student relationships: *closeness* between the child and teacher, the child's *dependency* on the teacher, and *conflict* between the child and teacher. The 11 items on the closeness subscale describe warm and harmonious interactions: e.g., "I share an affectionate, warm relationship with this child." The 4-item dependency subscale measures the degree to which students appear to be excessively dependent or clingy on teachers: e.g., "This child is overly dependent on me." The 12-item conflict subscale assesses the degree to which teacher-student interactions are negative and antagonistic: e.g., "This child and I always seem to be struggling with each other." Each item is rated on a 5-point Likert scale. Teacher-student relationships are embedded in a system of relationships with a history and a developmental trajectory. As such, teacher-student relationships cannot be easily reduced to the interactions one might observe in the classroom, and no single assessment device adequately describes this relationship. In addition, available measures of teacher-

student relationships are less well developed than instruments measuring parent-child relationships. The STRS is currently the only standardized validated instrument available for assessing teachers' perceptions of teacher-student relationships (Pianta, 1999).

Previous research indicates that the STRS correlates in predictable ways with concurrent measures of behavior problems and competencies in elementary classrooms (Pianta, 1988; Pianta, 1999; Pianta et. al., 1995), peer relations (Birch & Ladd, 1997), and the behavior of children and teachers as they relate to one another. Alpha statistics have shown that the *closeness* scale ($n = 11$; $\alpha = .86$) and the *conflict* scale ($n = 12$; $\alpha = .87$) had a high degree of internal consistency. In contrast, the *dependency* scale ($n = 4$; $\alpha = .73$) was less consistent.

School Readiness. To evaluate the traditional three core indicators of children's school readiness (motor, conceptual, and language), this study employed the Developmental Indicators for the Assessment of Learning [DIAL] Mardell-Czudnowski & Goldenberg, 1998). Previous researchers have used the DIAL to assess young children's cognitive abilities in preparation for kindergarten (Beer & Beer, 1992; Vacc & Vacc, 1983). The DIAL is an early childhood assessment instrument for children ages 3.0 to 6.11 years. The full DIAL assessment or an abbreviated version of the full DIAL, the Speed DIAL, may be used to assess children's abilities in three major areas: motor skills, concept-knowledge skills, and language-communication skills.

In the current study, the Speed DIAL was used because the screening can be administered in 20 to 30 minutes. Further, the Speed DIAL has been shown to provide a reliable and valid assessment instrument (Strawser & Sileo, 1998-1999). The Speed

DIAL has four tasks that are related to concept-knowledge skills and four that are related to language-communication skills. Four tasks assess conceptual knowledge: 1) body parts identification, 2) color identification, 3) concepts identification (e.g., *big* vs. *little*, *short* vs. *long*), and 4) letters and sounds recognition. Four tasks assess young children's language skills, their ability to: 1) articulate selected words; 2) use nouns, such as *car* or *airplane*; 3) use verbs, such as *drive* or *fly*; and 4) solve coping problems. For example, children were asked: "What would you do if you went into a room and it was dark inside?" Two tasks assess gross and fine motor skills. For the subscales raw scores were converted to scaled scores based on age. Scaled scores were then summed across the individual subtests for one Speed DIAL total score (Mardell-Czudnowski & Goldenberg, 1998).

The Speed DIAL instrument is designed to avoid confounding children's concept knowledge with expressive labeling. The child can score at least 1 point for correctly pointing to an image, demonstrating receptive comprehension. For example, the tester says, "Show me the car." An additional point is awarded if the child can respond expressively, using a noun. For example, "This is an airplane." Two additional points are awarded if the child uses a verb when asked, "What does an airplane do"? The child responds, "Fly." The selected tasks to be performed reflect school concept knowledge and language skills expected of children in a regular kindergarten classroom environment (Vacc & Vacc, 1983).

Cronbach's alpha for this sample has demonstrated good internal consistency for the Speed DIAL measure. The concept skills subscale score is .84, while the language skills subtest is slightly lower, at .77.

In order to avoid the analytical error of mistaking the DIAL as a predictor of school readiness, pre-existent assessment scores from the beginning of the data-collection phase were not selected for analysis. Rather, the DIAL scores taken at the end of the data-collection phase best served the specific purposes of this study that is correlational and not predictive.

Currently, on the market there are three other popular preschool assessment instruments: the Battelle Developmental Inventory Screening Test ([BDIST] Newborg, Stock, Wnek, Guidubaldi, & Svinicki, 1984); the Brigance Preschool Screen (Brigance, 1985); and the Peabody Picture Vocabulary Test, Third Edition (PPVT-III; Dunn & Dunn, 1997). Validity studies support the use of the DIAL for preschool screening because of correlations with other assessment instruments currently used in early childhood educational programs (Stawser & Sileo, 1998-1999).

Not only did the DIAL meet validity requirements, but also its use in the preschool classroom is on the rise nationwide. The Wichita, Kansas School District used the DIAL to screen 4000 kindergarten children during the 1999-2000 school year. The DIAL gained notoriety in research when Walter Gilliam of Yale University conducted the Middletown, Connecticut school readiness evaluation studies (*School Readiness: Research and Benchmarks*, 2004). At the top of the continent, the Bering Strait School

District in Alaska requires that all preschool students age three through five be administered the DIAL before admission to kindergarten (Castaneda, 2003).

Recently, pediatricians chose the DIAL as their assessment instrument to measure school readiness in the three core domains for children presenting at an urban clinic (Valdez, Dreyer, Estrada, et al., 2004). Dr. Karen Palesek, assistant editor for *Carolina Journal Online*, has argued that numerical test scores like the DIAL are the only guides educators have to look for risk factors. Also, she claimed that the Education Commission of the States on its Pre-Kindergarten information site fails its mission by not advocating school readiness tests (Palasek, 2005). To assess children's progress towards school readiness, the DIAL is one of three instruments recommended by the US Department of Education for Early Childhood Educator Professional Development (2005). Thus, not only for the purposes of this study, but for many other educational endeavors, the DIAL has served as a reliable, valid measure of school readiness in three core areas: motor, conceptual, and language.

Procedures

The data were pre-existing. This researcher accessed the records of the 74 participants in the Garner study on social-emotional competence for the purpose of linking social-emotional scores with teacher-child and school readiness scores of the same participants. To maintain confidentiality and to avoid bias, a data set of social-emotional scores were supplied to this researcher from the Garner study with child identification codes. At the same time, the 3 preschools received a listing of the 74 participants' names with the corresponding identification codes. Subsequently, with

individual names of children undisclosed, the 3 preschool directors supplied teacher-child relationship and one total DIAL score for the 74 participants in the Garner study. This researcher then linked data sets from Garner and the preschools resulting in only 58 children with complete data sets for comparison. Once data verification was completed by the researcher, center directors were asked to destroy the linking codes to prevent individual subject identification.

Three procedures were used to collect data for this study: structured child interviews, teacher questionnaires, and individual child-readiness cognitive assessments. The data collection phase began in September 2001 and ended in September 2002 (see Table 2). Specifically, social-emotional measures were administered between September 2001 and June 2002. Teacher-student relationships were measured in March 2002. The Dial was administered in September of 2002.

Research studies involving children as subjects require review and approval. The Virginia Commonwealth University Institutional Review Board (IRB) is charged with reviewing all research protocols involving human subjects to ensure compliance with federal, state, and local regulations. All materials and activities, related to this study and the Garner study, were reviewed and approved by the IRB Office of Research Subjects Protection and Office of Education and Compliance Oversight before data were gathered and analyzed.

Table 1

Listing of Dependent and Independent Variables

Independent Variables

1. Emotion competence
 - Emotion situation knowledge
 - Emotion expression knowledge
2. Social Competence
3. Teacher-Child Relationships
 - Closeness
 - Conflicting
 - Dependent

Dependent Variable

1. School Readiness
-

Table 2

Timeframe for Data Collection

	Emotional Competence Measure	Social Competence Measure	Teacher-Child Relationship Measure	School Readiness Measure
2001				
September	X	X		
October	X	X		
November	X	X		
December	X	X		
2002				
January	X	X		
February	X	X		
March	X	X	X	
April	X	X		
May	X	X		
June	X	X		
July				
August				
September				X

Emotional and social competence measures. Structured child interviews and teacher questionnaires were used to examine emotional expressive knowledge, emotional situation knowledge, and social competence for participants. The director at each of the three preschool sites was contacted at the onset of the study. The study was described in detail to the director and the preschool staff. Specifically, the staff was told that participating in the study would require teachers to complete a questionnaire describing the social development of each participating child. In addition, the director gave permission for the children to be individually interviewed during instructional learning times. Once the director agreed to have the center participate, the parents at each of the

sites received information sheets and consent forms from preschool staff describing the study. Parents expressing an interest in having their child participate were asked to sign the consent form. Social competence measures were then given to the preschool director to distribute to each child's teacher to be completed and returned.

Structured child interviews were used to collect data from children about their emotional knowledge. Specifically, emotional expressive knowledge and emotional situation knowledge were assessed. Each child was escorted to a quiet area at the preschool site by a person familiar with the child, and was seated across the table from a trained interviewer who explained to the child that they would be looking at pictures and answering questions. Interviewers were ethnically diverse, and every attempt was made to match the race and gender of interviewers to that of the child. After it was determined that the child was comfortable, the interviewer began with the first of two tasks designed to assess emotional knowledge. The interview session lasted approximately 20 to 25 minutes. When tasks were completed, the child was thanked for participating in the activities and returned to the preschool classroom.

As children were returned to classrooms, teachers were given a questionnaire, eliciting their perceptions about the child's social competence in the preschool environment. The questionnaire contained statements that required teachers to rate characteristics of children on a continuum from "always" displaying a particular trait to "never" displaying that trait.

Teacher-student relationship measures. A second questionnaire completed by teachers as part of routine teacher staff development was used to obtain data about the

relationship between participants and teachers. Questionnaires were distributed to teachers at staff meetings at the three different preschool sites in the month of March 2002. Directors instructed teachers to complete one questionnaire for each student in their classroom, which took approximately 15 minutes each. This questionnaire contained statements that required teachers to rate characteristics of their relationship with all children in their classrooms on a continuum from “always” displaying a particular trait to “never” displaying that trait.

School readiness measure. To assess school readiness in terms of the three core indicators (motor, conceptual, and language), the DIAL was routinely administered at the three Richmond preschool sites in September and October of each year. Either childcare center administrators or Virginia Commonwealth University graduate students in Occupational Therapy conducted the DIAL. To employ the DIAL correctly, graduate students were trained in an assessment class required as part of the OT curriculum while administrators received training as part of their professional development in consortium-member workshops.

Each child was escorted to a quiet area at the preschool site by a person familiar with the child, and was seated across the table from a trained individual who explained to the child that they would be looking at pictures and answering questions. After it was determined that the child was comfortable, the first of ten tasks designed to assess concept knowledge, ability to verbally communicate, and problem solving abilities was introduced. The screening session lasted approximately 20 to 25 minutes. When tasks

were completed, the child was thanked for participating in activities and returned to the preschool classroom.

Data Analysis

Data analysis was used to answer the basic two research questions and their corollaries: First, what is the relationship between children's socio-emotional development and school readiness? What is the influence of age on this relationship? Second, what is the relationship between the quality of the teacher-student relationship and school readiness? What is the influence of age on this relationship? In this non-predictive, correlative study, summed scores from the Speed DIAL functioned as the dependent variable. Other measures were used to score social, emotional, and teacher-student domains—the three independent variables. To make comparisons, statistical analyses employed bivariate correlations and hierarchical multiple regression techniques. Scatterplots were presented as a pictorial of the paired relationships, revealing outliers or extreme cases.

Age of participants was entered into the regression equation as a fifth variable to remove its influence on any of the relationships, and to reveal, for example, whether the relationships between variables are different or the same for 3-year olds as for 4-year olds. The influence of gender was not considered, as the sample size ($n = 58$) did not permit the introduction of a sixth variable into the equation.

The coefficient of determination for measuring relationships between variables was Pearson Product-Moment Correlation, symbolized as r . Significance was determined

at 0.01 and 0.05 levels. The reliability analysis, Cronbach's alpha, scored the internal consistency of each measure used in the study to reveal errors.

Regarding expectations, based on the literature, the researcher hypothesized that school readiness would be positively associated with socio-emotional competence and teacher-student closeness. Additionally, school readiness would be negatively associated with teacher-student conflict and dependency. It was expected that age would mitigate negative associations but accentuate positive associations.

Limitations

Sample. The small sample size is a limitation and requires that caution be used in generalizing the results of this study to other populations. Ideally this study would have included the 74 preschool sampled in the earlier investigation (Garner, unpublished). Only 58 of the 74 children, however, had complete data needed for this study. The smaller sample size limited generalization of findings related to influence of emotions, and prevented the exploration of the effect of gender on relationships between the study's variables.

Measures. Summed scores from the Speed DIAL functioned as the dependent variable. The data were originally collected and stored by the preschool sites as a single score; an aggregate of motor, concept and language sub-scores. There would have been more benefit to breaking out the motor, conceptual, and language indicators for use in analysis. Sub scores, however, were not available. This sub-score procedure has been used in other investigations involving the Speed DIAL (Mardell-Czudnowski & Goldenberg, 1998).

Time. The extended data collection period for emotion and social measures, September to June of a school year, may be a limitation. Young children may be more socially adept and familiar with peers in June than in September of a school year; they may be sensitive to either warm or cold weather — all may impact findings related to social-emotional variables.

Experimenter Effect. Teachers completed two of the five measures being used. The validity of teacher estimates might have been susceptible to threat, as teachers had certain knowledge or feelings about children in their classrooms that may have biased their estimates or opinions. In addition, different individuals collected various data, possibly resulting in differential treatment of subjects.

Delimitations

A sample of convenience is limiting in nature, imposing conditions beyond researchers' control. For this reason, this researcher did not intentionally impose additional limitations.

Conceptual Model

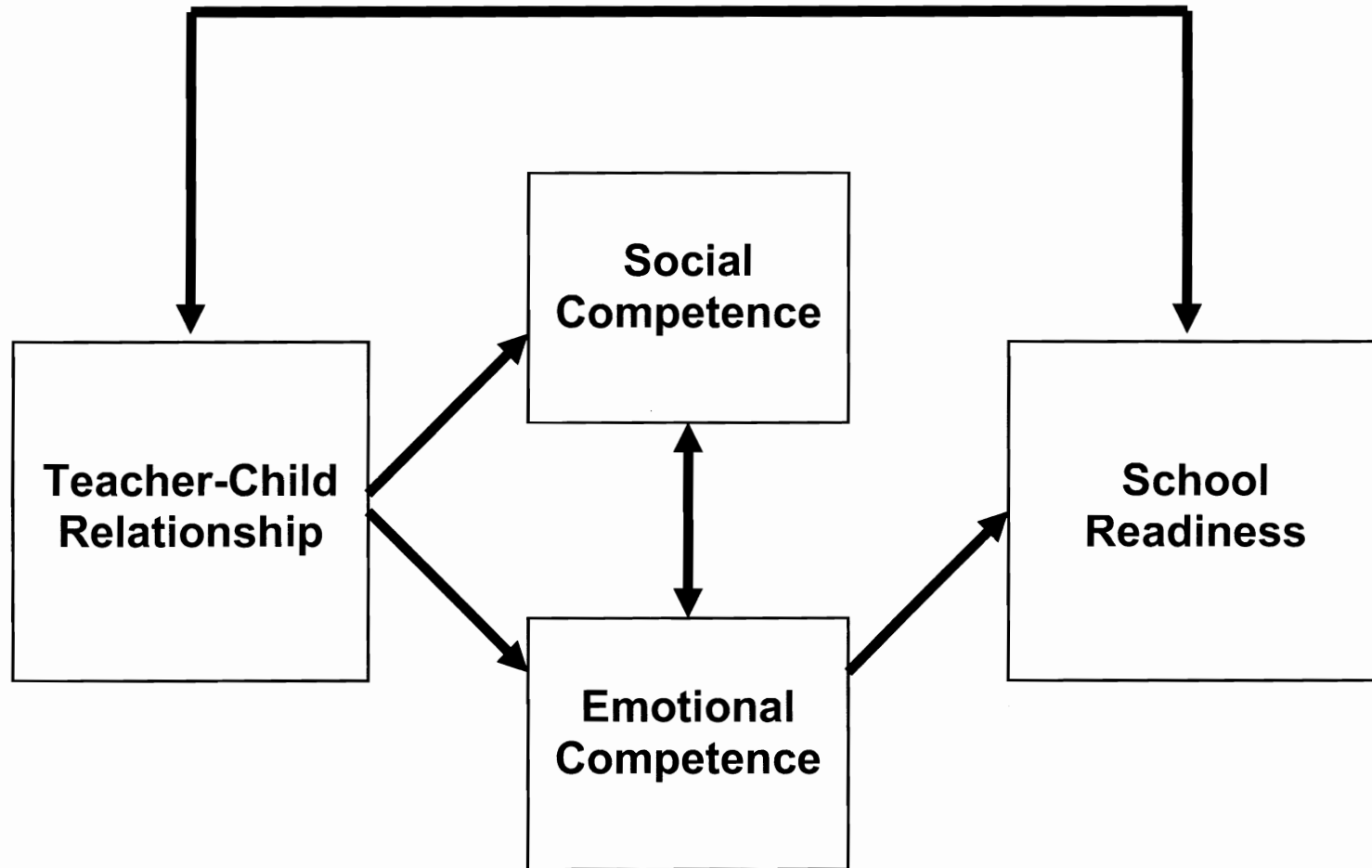


Figure 1: Conceptual Model of the Relationship between Preschool Children's School Readiness, Socio-emotional Competence, and Student-Teacher Relationships.

Findings

The research design and data collection procedures were discussed in Chapter Three. Chapter Four will describe statistical findings related to the focus of this study.

Statistical Procedures

Quantitative data analysis answered this study's two research questions: First, what is the relationship between children's socio-emotional development and school readiness, and what is the influence of age? Second, what is the relationship between the quality of the teacher-student relationship and school readiness, and what is the influence of age? In this relationship study, school readiness as summed scores from the DIAL functioned as the dependent variable. Other measures were used to score social, emotional, and teacher-student domains—the three independent variables. Dependent and independent variables are presented in Chapter Three as Table 1. The timeline for data collection is reported in Table 2.

Statistical analyses employed the following procedures:

Description of Sample. Descriptive statistics were used to describe the sample.

Gender, age and ethnicity of participants are included in Table 3. The final sample for this study included 21 three-year-olds (36%) and 37 four-year-old (64%) children. The majority, 31 (53%) were boys and 27 (47%) were girls, representing the following ethnicities in descending order of prevalence: African American, Caucasian, biracial, Hispanic, and Asian.

Table 3

Demographics of Participants (N = 58)

Characteristics	<i>N</i>	%
Age at time of data collection		
3 yrs.	21	36.21
4 yrs.	37	63.79
Gender		
Boys	31	53.45
Girls	27	46.55
Ethnicity		
Black	35	60.34
White	14	24.14
Hispanic	3	5.17
Asian	1	1.72
Biracial	5	8.62

Bivariate Correlations. Relationships between the variables were explored. One scatterplot, showing the relationship between school readiness (dependent variable) and emotional knowledge (independent variables) is presented as Figure 2. Correlations

between the variables are presented in Table 4 with Pearson product-moment correlations numerically summarizing observed bivariate relationships.

Scatterplots were first visually inspected to evaluate linearity, detecting outliers for values that appeared far from others in the data set. Scatterplots revealed some curvilinear distribution; however, the distributions were not extreme.

Subsequently, normality was then assessed using skewness and kurtosis coefficients. Evaluated at an alpha level of .01, significance tests for both (Tabachnick & Fidell, 1996) demonstrated normality of data distribution, although standard deviations of social competence and school readiness are high.

For the sake of brevity, researchers rarely publish scatterplots since each bivariate correlation has its own (McMillan & Schumacher, 2001). For this reason, only one scatterplot has been included (See Figure 2) to show the relationship between school readiness and emotional situation knowledge. In addition, bivariate analysis is included as a correlational matrix in Table 4 to describe relationships between school readiness and each independent variable.

Table 4 shows the relationship between school readiness and each of the independent variables. Mean values for each child measure are presented, also. The mean score for *expression knowledge* is comparable to scores reported in other research (Garner & Estep, 2001) and indicates that these children in this study are fairly competent at understanding facial expressions. In terms of *situation knowledge*, the mean value was fairly low in comparison to previously reported research (Denham & Couchoud, 1990;

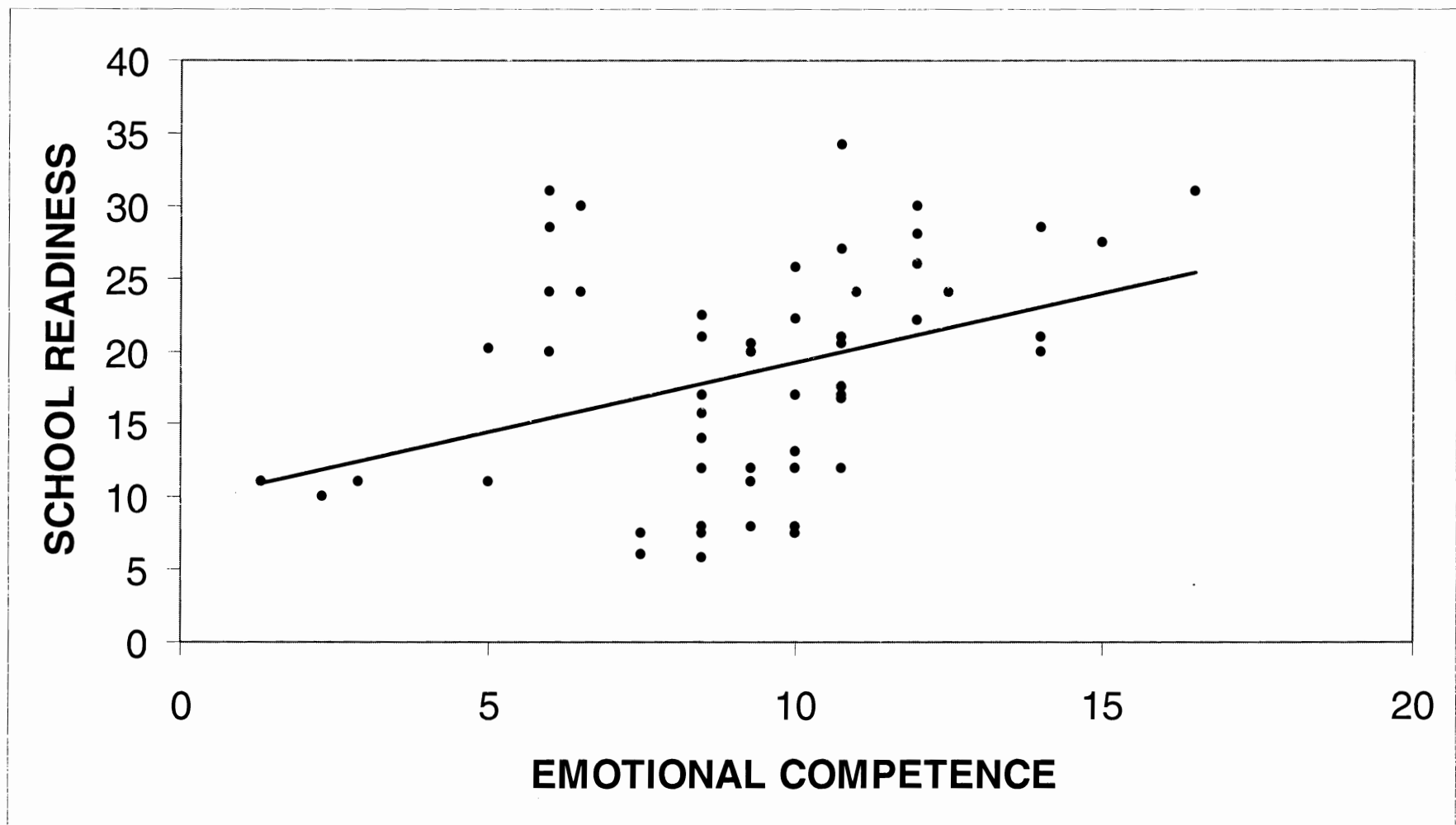


Figure 2: Scatterplot for Bivariate Correlation between Emotional Competence and School Readiness

Garner & Estep, 2001). Finally, means for children indicate moderate levels of social competence.

Regression Analyses. Hierarchical multiple regression analyses (Huck, 2004; McMillan & Schumacher, 2001) were computed to determine whether the independent variables would predict variance in the dependent variable when entered into the equation; specifically, whether social-emotional knowledge and teacher-student relationships (close, conflicting, and/or dependent relationships) would predict a unique amount of the variance in children's kindergarten school readiness. See Table 5.

Given that the sample included only 58 children, only 6 predictors could reliably be considered. Emotional expression knowledge and emotional situation knowledge were highly correlated and represented the same construct of emotional competence. Therefore, a decision was made to delete emotional expression knowledge from the regression analysis to maintain statistical power.

The hierarchical regression analysis evaluated the contribution of emotion situation knowledge, social competence, and three aspects (closeness, conflict, dependency) of the teacher-student relationship variable to the prediction of school readiness. The three independent variables were entered into the regression equation in stages. Age was included as a proximal control variable on the first step of the regression equation; emotion situation knowledge was entered on the second step; and social competence was included on the third step. The three aspects of the teacher-student relationship variable were entered on steps four, five and six, respectively. Specifically,

teacher-student conflict was entered on step four, teacher-student closeness was entered on step five, and teacher-student dependency was entered on step six. The combined variance explained by each step and the unique variance explained by each predictor was investigated.

Data Analysis

To understand the influence of age, bivariate analysis examined whether age was related to the dependent variable (school readiness) and each of the independent variables (social-emotional competence and the quality of teacher-student relations). After determining the influence of age on variables, relationships between variables were examined. Each of the two research questions were then addressed: 1. What is the relationship between socio-emotional development and school readiness? and 2. What is the relationship between student-teacher relationships and school readiness?

Bivariate Correlations – Age as Covariate

Age was included as a control variable to provide some assurance that any significant findings would not be confounded by age of the children.

Age and School Readiness. It seemed likely that age may be associated with greater proficiency on school readiness assessments. Hence bivariate correlations were computed to examine the relation between age and school readiness. The findings, reported in Table 5, revealed that age was moderately significantly related to the school

readiness of children in this sample ($r = .40, p < .05$). With age, children were proficient on the DIAL, the school readiness assessment.

Age and Social-Emotional Competence. Children acquire a number of competencies during the early years, and for this reason it seemed likely that age would be related to both domains of emotional competence (emotional expression and emotional situation knowledge) and social competence. Analysis failed to indicate, however that age was related to social competence ($r = .10, ns$), emotional expression knowledge ($r = .14, ns$). Age was significantly related, however, to emotional situation knowledge ($r = .26, ns$).

Age and Quality of Teacher-Student Relationships. As in previous research in this area (Shields et. al., 2001), age was not related to the quality of teacher-student closeness ($r = .02, ns$), teacher-student conflict ($r = -.21, ns$), or teacher-student dependency ($r = -.03, ns$). The negative association between age and two qualities of teacher-student relationship (conflict and dependency) were also supported by previous research.

Bivariate Correlations – Relationships Between Variables

Having established that age was related to school readiness and emotional situation knowledge but not to emotional expression, social competence or teacher-student relationships, the next set of analyses were intended to examine the relationship between variables.

Correlations between Social-Emotional Competence and School Readiness Variables.

Emotional expression and emotional situation were added together to get emotional competence. *Once* controlling for age, the correlations between emotional expression and emotional situation knowledge were investigated. The findings revealed a statistically significant relationship between emotional expression knowledge and

Table 4

Intercorrelations for School Readiness and Seven other Measures of Association

Variables	1	2	3	4	5	6	7	8
1. Age (in years)								
2. School readiness	0.40**							
3. Emotional expression knowledge	0.14	0.26*						
4. Emotional situation knowledge	0.26*	0.43**	0.57**					
5. Teacher-child conflict	-0.21	-0.18	0.00	-0.03				
6. Teacher-child closeness	0.02	0.31*	0.40**	0.45**	-0.06			
7. Teacher-child dependency	-0.03	0.07	0.13	-0.08	0.52**	0.17		
8. Social competence	0.1	0.25	0.26*	0.37**	-0.28*	0.56**	-0.34	
M	3.63	19.88	13.14	9.4	2.03	3.59	2.15	36.58
SD	0.48	7.18	3.81	2.96	0.81	0.51	0.69	9.88
Range	3-4	2-34	2-22	1-16	1-4	2-5	1-4	16-55

*p<.05, **p<.01, ***p<.001

emotional situation knowledge ($r = .57, p < .01$). Then, the relationship between emotional competence and social competence was investigated. Social competence was positively associated with both aspects of emotional competence; emotional situation knowledge ($r = .37, p < .01$) and emotional expression knowledge ($r = .26, p < .05$).

Next, the researcher examined the relationship between emotional competence and school readiness, and between social competence and school readiness. The analysis indicated that emotional competence was correlated with school readiness, but social competence was not significantly related to school readiness although there was small difference between the r for social competence ($r = .25, ns$) and emotional expression ($r = .26$). It may be that the low mean values for social competence measures of children in this study, presented in Table 5, contribute to these results.

The findings suggest that children who can understand and express their own feelings are better able to understand the feelings of others and are more ready for school. Moreover, as young students negotiate the school day, successful interactions are apparently less dependent on the acquisition and maintenance of friendships than on the increasing ability to understand and interpret verbal and non-verbal cues related to the feelings of others.

Correlations among Variables Assessing Quality of Teacher-Student

Relationships and School Readiness. Next correlations, between the three separate qualities of teacher-student relationships (teacher-student closeness, teacher-student conflict and teacher-student dependency) were examined to determine if they were

correlated with one another. Two of the three qualities of the teacher-student relationship (teacher student conflict, and teacher-student dependency) were statistically significantly related to each other. The third aspect, teacher-student closeness was not correlated with those two aspects (teacher-student conflict, or teacher-student dependency).

Then, the relationship between teacher-student relationships (teacher-student closeness, teacher-student conflict and teacher-student dependency) and school readiness was examined. The analysis indicated that a significant relationship existed between the third aspect of teacher-student relationships (teacher-student closeness) and school readiness ($r=.31, p<.05$). Generally, children having close relationships with teachers scored higher on the school readiness measures.

Correlations among Variables Assessing Quality of Teacher-Student Relationships and Social-Emotional Variables. Although research questions did not focus on the relationship between the quality of teacher-student relationships and social-emotional competence, the findings revealed a significant positive association between *close* teacher-student relationships and both aspects of emotional competence: *close* teacher-student relationships and emotion expression knowledge ($r=.40, p<.01$) and *close* teacher-student relationships and emotion situation knowledge ($r=.45, p<.01$). There was also a positive association between *close* teacher-student relationships and social competence ($r=.56, p<.01$). Children's social competence was strongly negatively related to *conflicting* teacher-student relationships ($r=-.28, p<.05$), and less negatively related to relationships ($r=-.34, p<.01$) wherein children were *dependent* on teachers.

Multiple Regression Analyses

The next set of analyses is intended to answer the two research questions. First, the regression equation was used to evaluate the contribution of social-emotional competence to the dependent variable, school readiness. Next the contribution of teacher-student relationships was evaluated. Having already evaluated the influence of age on variables, regression analyses answered the two research questions: 1) What is the relationship between social-emotional competence and school readiness ? and 2) What is the relationship between teacher-student relationship and school readiness ?

Table 5

Standard Coefficients and Standard Errors for Predictors of School Readiness

Step and Variable	β^a	SE β	R	ΔR^2
Step 1:				
Age	.40	1.81	.40	.16**
Step 2:				
Emotion competence	.35	.29	.52	.11**
Step 3:				
Social Competence	.10	.09	.53	.01
Step 4:				
Teacher-child conflict	-.09	1.09	.54	.02
Step 5:				
Teacher-child closeness	.19	2.07	.56	.02
Step 6:				
Teacher-child dependency	.23	1.65	.58	.03

^a Standardized regression coefficients.* $p < .05$. ** $p < .01$. *** $p < .001$.

Research Question 1: What is the relationship between social-emotional competence and school readiness ? What is the influence of age?

Regression Analyses Examining the Contribution of Social-Emotional Competence to School Readiness. A hierarchical regression analysis was performed in which the school readiness score served as the dependent variable. On the first step, age as the control variable, accounted for 16% of the variance of the school readiness score; $F(1,56)=10.74$; $R^2 = .16$, $p < .01$). Emotion competence entered on the second step of the analyses, accounted for an additional percent of the variance, R^2 change = .11, $F(2,55)=10.37$; $R^2 = .27$, $p < .01$). The contribution of age to school readiness was found to be significant ($\beta = .40$, $p < .01$), as was the contribution of emotional competence ($\beta = .35$, $p < .01$). Beta weights and R^2 change were tested (two-tailed t -test) and indicated that age and emotional competence were significantly helpful in explaining school readiness.

Social competence was entered on the third step of the equation, but the contribution did not add to the variance in school readiness ($\beta = .10$, $p = ns$). In response to research question one, emotional competence is a predictor of school readiness, and age influences this relationship. To the contrary, social competence is not a predictor of school readiness. The bivariate correlation supports this finding, as both emotional competence and age were positively correlated with school readiness. Social competence and school readiness were not correlated.

Research Question 2: What is the relationship between teacher-student relationship and school readiness ? What is the influence of age ?

Regression Analysis Examining the Contribution of Quality of Teacher-Student Relationships. Three sub-scale (conflict, closeness, dependency) scores from the single teacher-student relationship measure were entered on the fourth, fifth, and sixth steps of the regression equation, respectively. Specifically, teacher- student *conflict* was entered on step four; teacher-student *closeness* was entered on step five; and teacher-student *dependency* was entered on step six of the regression equation. Again, age was the control variable, having been entered on step one of the equation.

The inclusion of teacher-student conflict on the fourth level of the equation ($\beta = -.09, p = ns$) and teacher-student closeness on the fifth level ($\beta = .19, p = ns$) represented small variance in school readiness. Specifically on the fourth step of the analyses, teacher-student conflict, R^2 change = .02, $F(3,54) = 10.37$; $R^2 = .54, p < .01$). On the fifth step, teacher-student closeness, R^2 change = .02, $F(5,52) = 4.72$; $R^2 = .02, p < .01$). Teacher-student dependency, entered on the sixth level accounted for a negligible variance, R^2 change = .03, $F(6,51) = 4.36, p < .01$). Beta weights and R^2 changes were tested (two-tailed t -test) and indicated that although there was change in school readiness when the three aspects of teacher-student relationships were entered into the equation on steps four, five and six, the changes were not significantly different and therefore were not helpful in explaining variability in school readiness (independent variable); that teacher-student conflict, teacher-student closeness and teacher-student

dependency did not contribute significantly above and beyond the independent variables (age, emotional competence) that were first entered into the equation.

When interpreting the contribution of teacher-student relationships, this researcher is cautious because in multiple regression analysis variables are influenced by other variables in the equation (Huck, 2004). Although this contribution was not significantly different from zero, there was a change in R^2 in steps four, five, and six. These findings are supported by the bivariate analysis wherein teacher-student closeness was statistically significantly correlated with school readiness. Teacher-student conflict and dependency, however, were not significantly correlated with school readiness. This may be explained by the fact that researcher examined aspects of teacher-student closeness separately, resulting in three separate variances that were extremely small; specifically, teacher-student conflict (R^2 change = .02); teacher-student closeness (R^2 change = .02); and teacher-student dependency (R^2 change = .03). In examining the contribution of the teacher-student relationship as a concept in entirety, the findings are different, in that the combined variance is .07: (teacher-student conflict (R^2 change = .02) + teacher-student closeness (R^2 change = .02 + teacher-student dependency (R^2 change = .03) = the combined R^2 change of .07. The Student-Teacher-Relationship Scale (Pianta, 1999), a single measure with three subscales (conflict, closeness, and dependency), is intended to be evaluated as a single measure.

The response to research question two, then, may be stated as follows: When considered separately, individual aspects of teacher-student relationships do not appear to contribute to the prediction of school readiness. When viewed in its entirety, however,

the results may be different. This finding, that quality of teacher-student relationships contributes to children's school readiness is supported by literature (Ladd, 1999) and indicate that children who have not developed close relationships with teachers are at risk of failure as they transition from preschool to early elementary grades. The relationship of school readiness and teacher-student relationships is not influenced by age.

Regression Analyses – Variation of Original Regression Analyses

This researcher wanted to examine possible variation in the dependent variable when the order of entry for explanatory variables was changed. For this reason, a variation to the original equation, a second regression equation, was generated to further examine the two research questions.

Research Question1: What is the relationship between social –emotional development and school readiness ?

In relation to this question, the researcher was particularly interested in whether a variation in the order of entry for two of the explanatory variables would change the original findings (Table 5). Would a change in the order of entry for the social-emotional variables further explain or predict school readiness (dependent variable)? From the literature, it is generally accepted in existing research that children's emotional development precedes social development. For this reason, emotional competence was entered (step two) before social development (step three) in the original multiple regression equation used in this study (Table 5). In the original regression equation, after age was entered as the control variable in step one, emotional competence (step two)

preceded entry of social competence (step three). In this second regression analyses, age was again entered in step one, but the order of entry for the social-emotional variables was reversed; social competence was now entered on step two and emotional competence followed, on step two. There was no change with the teacher-student variables. Teacher student conflict, teacher-student closeness, and teacher student dependency were again entered as steps four, five, and six, respectively.

The findings revealed that when the order of entry was reversed for social-emotional competence, the findings were essentially unchanged. There was no significant difference in the dependent variable (school readiness) explained by the order of entry of social-emotional variables. Emotional competence still emerged as a significant predictor of school readiness; social competence was, again, not a significant predictor. In this second hierarchical regression analysis, age, again entered on the first step, accounted for 16% of the variance in the school readiness score; $F(1,56) = 10.74$; $R^2 = .16$, $p < .01$). Social competence, entered this time on the second step, accounted for a negligible additional of 4 percent of the variance, $R^2 \text{ change} = .04$, $F(2,55) = 7.08$; $R^2 = .20$, ns). The contribution of age to school readiness was again found to be significant ($\beta = .40$, $p < .01$). The contribution of social competence ($\beta = .21$, $p = \text{ns}$) was, however again, not significant. Beta weights and $R^2 \text{ change}$ were tested (two-tailed t -test) and indicated that age was significantly helpful in explaining school readiness, but not social competence.

Emotional competence was then entered on the third step of the equation and accounted for an additional 8 percent of the variance in school readiness. $R^2 \text{ change} =$

.08, $F(3,54) = 7.11$; $R^2 = .28$, $p < .001$). There was an interesting finding, however, in that when the order of entry was reversed *in steps four, five, and six*: and emotional competence was entered on the third step rather than the second step it became less of a predictor of school readiness. Specifically when entered on the second step in the first regression analysis emotional competence accounted for 11 percent of the variance ($\beta = .35$, $p < .001$), in school readiness. When entered on the third step, emotional competence accounted for only 8 percent of the variance ($\beta = .31$, $p < .001$). There was a similar change in social competence. When entered on the second step, social competence accounted for 4 percent of the variance ($\beta = .21$, ns), in school readiness compared to only 1 percent when entered on step 3 ($\beta = .10$, ns). As this variation resulted in no significant findings, we present only the results of the first set of analyses (Table 5) in this chapter.

Research Question 2: What is the relationship between teacher-student relationship and school readiness?

In the original regression equation (Table 5), the contributions of teacher-student conflict (step four), teacher-student closeness (step five), and teacher-student dependency were negligible. In response to a possible question of whether the three aspects of teacher-student relationships may further explain school readiness if combined into one total score, the researcher examined the use of this instrument in previous investigations. Based on the author's use of this scale, and other researchers' investigations (Pianta, 1999, Garner, 2001), there exists no evidence for the validity of a combined construct.

The three sub-scales of the teacher-student-relationship (Pianta, 1999) instrument examine the qualities of teacher-student relationships; specifically whether relationships are close, conflicting, or dependent. The patterns of results are different for each. For example, in a relationship where there is an element of closeness the interactions are viewed as being positive. To the contrary, conflict in relationships is viewed as negative. To attempt to combine the three different aspects of this scale would be an attempt to combine positive and negative aspects into a single useful construct.

For the sake of research, a variation to the original regression analysis was considered. First, was a change in the order of entry for social-emotional variables. The findings are essentially unchanged. Next, combining the three aspects of the teacher-student relationship variable into one total score was considered. This, however, was not a viable option as there is no support or evidence of validity for combining the teacher-student-relationship variables (teacher-student conflict, teacher-student closeness, and teacher-student dependency) into one construct. The order of entry for variables in the original equation is supported by previous research (Table 5). As this second regression analyses did not result in statistically significant changes to the original findings, only results from the original regression analysis (Table 5) are included in this study.

Summary

Generally, the results of this study indicated that school readiness, the dependent variable, was influenced by age and emotional competence. There were positive associations between school readiness and emotional competence but not between school readiness and social competence. Emotional competence was a significant predictor of

school readiness. In examining the association between school readiness and the quality of the teacher-student relationship (closeness, conflict, and dependency), it was determined that school readiness was significantly correlated with *close* teacher-student relationships. Although correlated with school readiness, teacher-student relationship was not predictive of school readiness.

The practical value of significant findings or the effect size of relationships was observed. After controlling for age the change in the R square was small, suggesting only limited practical significance. The study, however, had a small sample yet still provided statistically significance results.

Discussion

Decades ago, getting ready for school meant something entirely different than what it means to early childhood educators today—getting up early, having a bowl of cereal, putting on your yellow raincoat if you needed it, not forgetting your lunchbox. Then when you arrived at kindergarten, the teacher asked whether you knew your full name, your address, and maybe your phone number. The importance of *school readiness* as an educational precept has grown tremendously, and today the preschool teacher's toolbox might contain many instruments which seek to measure or assess school readiness. As is evident in the professional literature, the term once nebulous is beginning to coalesce into domains of core indicators. This research has attempted to contribute to a more concrete definition of this foundational concept in early childhood education.

While extending and building on previous research, this study explored how connections between social/emotional development and the relationship between teachers and children impact school readiness. For the initial purposes of this study, recall that we defined school readiness in the traditional sense of three core indicators measured by the DIAL instrument: motor skills, language skills, and concept skills.

The first question to be answered in this study was: what is the relationship between children's socio-emotional development and school readiness, and what is the influence of age on this relationship? After controlling for age, the results of this study generally indicate positive associations between emotional competence and social competence, and between children's emotional competence and school readiness the next year. Interestingly, although emotional competence and social competence were

positively correlated, there was not a significantly statistical relationship between social competence and school readiness. The findings suggest that children who can understand and express their own feelings and the feelings of others are also able to understand and interpret verbal and non-verbal cues related to the feelings of others in their environment. Emotional competence at this level (Mayer & Salovey, 1997) indicates that children are able to take the perspective of another. This perspective-taking ability may be more crucial for preschool children's kindergarten readiness than being able to maintain friendships in the kindergarten classroom. This finding is consistent with developmental models referenced in the literature that emphasize the sociocultural context of social development (Sameroff, 1991; Vygotsky, 1962) and with previous research which found that emotion understanding makes a unique contribution toward preschool children's classroom adjustment (Shields, et.al., 2001). Preschoolers are more likely to perform well at school if they are able to attune to the emotions of others in their social environment. Thus, an early understanding of emotions in social context may be an important precursor to social competence for young children as they adjust to the demands of the academic environment of which social competence plays an important role.

When the preschool children in this study were assessed in 2002, social-emotional development had not yet been included as an integral part of school readiness. The Speed DIAL screening instrument focused on only three domains: motor skills, language skill, and concept skills. To complement this limited view of school readiness, the researcher

added measures for social/emotional development and for the quality of the teacher-student relationship.

The importance of social and emotional development as additional core indicators of school readiness has only recently been emphasized (Campbell et al., 2000). Raver in the *Social Policy Report* (2002), a publication of the Society for Research in Child Development, presented persuasive evidence from rigorous research that policy makers in early education should have an objective of the highest priority: broaden early educational mandates for school readiness to include emotional development and target young children's emotional competency before school entry. A reciprocal interaction exists between higher order thinking and the emotional centers of the brain. Blair (2000) recommends that early education programs include curricula which directly address social and emotional competence.

Most recently (February 2005), the *National School Readiness Indicators Initiative: Making Progress for Young Children* published its findings. *Getting Ready* bases its recommendations on the premise that the first five years of life are critical for lifelong development as early learning influences brain development by establishing the neural connections which integrate all phases of development. This three-year, 17 state initiative had as its main objective to create a multidimensional definition of school readiness developed from a core set of common indicators. Based upon a wealth of research, the consensus is that preschool readiness can be measured and addressed across five distinct but interrelated domains: 1) motor development, 2) social and emotional

development (now second on the list), 3) approaches to learning (the ability to follow directions), 4) language development, and 5) cognition and general knowledge.

This researcher strongly agrees that these indicators are “core,” that while remaining separate, they also reinforce and interact one with the other to create a dynamic understanding of school readiness that includes not only the child, but the teachers at preschool, the parents at home, and the community at large. Thus, the addition of social and emotional competencies to the list of school readiness core indicators which this current study strongly recommends echoes the findings of the Initiative.

There is one additional core indicator of school readiness that is still neglected, though its importance should be recognized as a distinct but indispensable aspect of a child’s successful preparation for school. The quality of the teacher-student relationship is the medium in which school readiness in all its aspects grows and is nurtured. The Initiative’s report runs to 79 pages, but devotes just one paragraph to “Early Education Teacher Credentials” as one of many “emerging” indicators. They cite research that shows that preschool teachers need at least a bachelor’s degree in early childhood education to produce positive outcomes for their students’ learning and development (*America Shortchanges Its Preschoolers: Few States Require Teacher Training*, 2003; *America’s Children: Key National Indicators of Well-Being*, 2004; *Pathways Mapping Initiative: School Readiness Pathway*, 2004). The Initiative, however, does not address the quality of the teacher-student relationship as a key contributor to school readiness.

This study identified three aspects of the teacher-student connection: closeness, conflict, and dependency.

The second objective of this study was to answer the question, What is the relationship between the quality of the teacher-student relationship and school readiness, and what is the influence of age on this relationship? The results of this study indicated a positive association between school readiness and teacher-student closeness. Additionally, there was a negative relationship between school readiness and teacher-student conflict while teacher-student conflict was positively related to teacher-student dependency.

In hindsight, perhaps the most original finding of this study was the close association of the teacher-student relationship with social and emotional domains. Although the initial conceptual model displayed social competency and emotional competency impacted by vectors from the teacher-child relationship, a third research focus that was not directly asked could have been the question: What is the relationship between the teacher-student relationship and socio-emotional development? Data analysis revealed that social and emotional competencies were positively associated with teacher-child closeness. Furthermore, socio-emotional competencies were negatively associated with teacher-student conflict and teacher-student-dependency.

Current research emphasizes the five core indicators of school readiness, but, sadly, the quality of the teacher-student relationship is yet to be addressed. This *closeness* between teacher and student is crucial to growth in the other domains of school readiness. In this regard, another factor that would enhance teacher-child closeness is the

teacher/student ratio (*Parsing the Achievement Gap*, 2003). Obviously, smaller classes with low student-to-teacher ratios would provide early childhood educators the opportunity to establish, close quality relationships based on each child's uniqueness in many domains: culture, temperament, personality, social/emotional development, cognitive abilities, and physical abilities/disabilities.

Implications of the importance of teacher-student relationship include teacher training. Results from this study suggest that Schools of Education across the nation should include in their curriculum for student teachers courses specifically designed to provide strategies for social and emotional competencies. Serious developmental delays require early intervention. One of the most effective training tools for young children's early emotional and social development is AI's Pals. AI's Pals research supports the conclusions of this study. As published in the *Journal of Primary Prevention* (2004), preschool students demonstrate impressive measurable gains in socio-emotional competency after participating in AI's Pals. Such an early childhood curriculum not only benefits the young students, but the teachers also profit, learning how to work in partnership with their students.

Although it was not the province of this research to address directly, another important component of school readiness is the home, which researchers have long recognized. Sutherland and Oswald (2005) note that transactional processes that begin with negative parent-child relationships in the home become internalized, and then the child brings these behavioral disturbances to the teacher-student relationship and to relationships with peers. Researchers have long recognized that student behavior and

teacher behavior are reciprocally influential (Skinner and Belmont, 1993). Skinner and Belmont describe these effects as “magnificatory.” Positive student behavior elicits positive teacher behavior which further elicits more student engagement, the cycle magnifies. The corollary is equally important: the relative absence of student engagement elicits negative teacher behavior, which further elicits student disengagement in a downward spiral of “noncloseness.”

Another example illustrates how teacher-student behaviors reciprocally reinforce negative outcomes (Sutherland and Oswald, 2005). A teacher reprimands a child during class, and the child responds with noncompliance or disruption. Subsequently, the teacher avoids interaction with this child either by giving less attention or by punishment. Consequently, the child begins to fail in school tasks as the teacher-student relationship deteriorates away from closeness to conflict and/or dependency. A negative learning cycle perpetuates itself.

Similarly, positive parent-child relationships nurtured in the home create transactional processes that translate positively to the preschool classroom and help to create that teacher-student closeness so essential to academic success in all its domains. Thus, any comprehensive program would have to recognize the importance of the home in contributing to school readiness. Programs such as *Al's Pals* which have strong training components for parents as well as for teachers could serve as the connecting link between the preschool and the home, creating dual epicenters that mutually reinforce training in emotional and social competencies.

This has important implications for training early childhood educators. As this study has shown *teacher closeness* is the quality that drives positive associations with domains of school readiness. Knowing how to build a quality relationship based on closeness and trust with a child is not an inborn trait, but a skill that can be taught in early childhood educational programs. Within developmental psychology the early childhood educator in training would do well to investigate the dimensions of child temperament. One researcher (Reed-Victor,) has explored how individual child differences influence early education and found that temperament and personality dimensions (along with teacher experience) significantly figure in the equation of school adjustment. Thus, given the importance of teacher-student closeness that this study demonstrates, one strong recommendation is for effective teacher training for positive outcomes

The goal of this research was not to just to investigate relationships between core indicators for the data's sake, but to inform and influence policy decisions to improve this new multifaceted definition of school readiness, to make the theoretical practical by implementing positive change where it will do the most good—in the preschool classroom. This makes for good dollars and sense.

Enhancing school readiness provides economic returns that exceed costs. Using data from 1,539 preschool children in the Chicago Longitudinal Study, researchers found that every one dollar invested in the Chicago Child-Parent Centers returned \$7.14 (in 1998 dollars) back to society at large (Reynolds, Temple, & Ou, 2003). The CPC program (Sullivan, 1971) is a center-based early education program that stresses early intervention and competence outcomes for disadvantaged children. The economic

benefits were derived 20 years down the road from significantly lower rates for negative outcomes for center-participants in areas such as lower rates of grade retention and special education placement, lower rates of juvenile court petitions by age 18, and lower rates of child welfare services.

Educators have long recognized the three standard indicators of school readiness: motor skills, conceptual skills, and language skills. In agreement with other researchers, this study has demonstrated the necessity of adding an additional core indicator, social-emotional competency. Children's cognitive development is best served when early childhood educators facilitate the acquisition of social and emotional skills. This study has demonstrated the teacher makes the difference in the early education setting. In this connection, renowned educator Linda Darling-Hammond has just co-edited a new book—*Preparing Teachers for A Changing World: What Teachers Should Learn and Be Able to Do*. At the core of pedagogical concepts for training new educators, regardless of the age level, must be a commitment to respect the diversity of the individual learner. Teachers not only must know the *what* of education, but also the *how*. In addition to strong knowledge of content, educators must understand how students learn and develop (2005).

Findings about relationships between the dependent and independent variables must be interpreted cautiously, as there may be other factors that influence the results. For example, family characteristics, values and beliefs are the dominant influence on young children's development but were not considered in this study. Families have values that when reflected by their children in the preschool setting may contribute to

relationships with peers and adults. The impact of culture and family social-economic status was also not explored. Parents from different cultures and social economic status differ from one another, and the impact of these differences may be observed at the family and school levels (Turnbull & Turnbull, 2006; Lareau, 1987). One key difference is related to parents' perceived control over their children's education and within the family-school partnership. This family difference paired with various child-temperaments could possibly influence children's growth and development. Participant maturation must also be considered as a factor that may influence children's development, and subsequently, the findings of this study. The one-year data collection period of one year represents a large percentage of young children's lives and must be considered as these findings are interpreted.

The Conceptual Model (Figure 1) illustrates that the relationship between preschool children's school readiness, socio-emotional competence, and student-teacher relationship is best understood as a multiplicity of co-acting components. The data implies the existence of a unity connecting the variables under consideration. They can be measured as distinct, but this teasing out is artificial, and readiness remains a holistic concept. The five core indicators are complementary, supplementary, and interdependent and form a web of relationships. For final consideration, recall that the motivation for undertaking the rigors of this study is not unlike that of Governor Warner when the future of our children is at stake. There is "No Time to Waste" (*Indicators of School Readiness*, 2004).

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Appendix A

Subject # _____ Random Order _____ Date _____

Interviewer _____

AFFECTIVE LABELING

Place the faces for the puppets before the child in random order. Say, HERE ARE SOME FACES OF A LITTLE GIRL/BOY.

Expressive: Ask of each picture "HOW DOES S/HE FEEL HERE?" Record the child's response in the space provided.

Receptive: After asking of all four emotions, say, "SHOW ME WHERE S/HE FEELS HAPPY/SAD/MAD/SCARED." With each child, randomize the order in which you ask these emotions. Record the child's response in the space provided.

Explain putting correct faces on the puppet; give example of all four, such as, "SEE, NOW S/HE FEELS HAPPY."

EXPRESSIVE

RECEPTIVE

Stimulus/
emotion asked

Child's response
(verbal)

Stimulus/
emotion asked

Child's response
(face pointed to)

HAPPY		HAPPY	
SAD		SAD	
ANGRY		ANGRY	
AFRAID		AFRAID	
SURPRISED		SURPRISED	
NEUTRAL		NEUTRAL	

Appendix B

PSP**PRESCHOOL SOCIO-AFFECTIVE PROFILE**

Peter J. LaFreniere, Ph.D.

Jean E. Dumas, Ph.D.

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CHILD'S NAME**(OR IDENTIFICATION CODE)****BIRTH DATE****GENDER****ETHNICITY****TEACHER'S NAME****PRESCHOOL****DATE PSP WAS COMPLETED**

Here is a list of behaviors that you may observe when the child is in your care. Please circle the number that reflects the frequency of the behavior that you observe for the child according to the following continuum: The behavior occurs NEVER (1), SOMETIMES (2 or 3), OFTEN (4 or 5), or ALWAYS (6). For those exceptional cases that are impossible to evaluate, please check CANNOT EVALUATE.

	Never	Sometimes	Often	Always	Cannot Evaluate	
1. Maintains neutral facial expression (doesn't smile or laugh)	1	2	3	4	5	6
2. Tired	1	2	3	4	5	6
3. Easily Frustrated	1	2	3	4	5	6
4. Gets angry when interrupted	1	2	3	4	5	6
5. Irritable, gets mad easily	1	2	3	4	5	6
6. Worries	1	2	3	4	5	6
7. Timid, afraid (e.g., avoids new situations)	1	2	3	4	5	6
8. Sad, unhappy, or depressed	1	2	3	4	5	6
9. Inhibited or uneasy in the group	1	2	3	4	5	6
10. Screams or yells easily	1	2	3	4	5	6
11. Forces other children to do things they don't want to do	1	2	3	4	5	6
12. Inactive, watches the other children play	1	2	3	4	5	6
13. Negotiates solutions to conflicts with other children	1	2	3	4	5	6
14. Remains apart, isolated from the group	1	2	3	4	5	6
15. Takes other children and their point of view into account	1	2	3	4	5	6
16. Hits, bites, or kicks other children	1	2	3	4	5	6

17. Cooperates with other children	1	2	3	4	5	6
18. Gets into conflicts with other children	1	2	3	4	5	6
19. Comforts or assists another child in difficulty	1	2	3	4	5	6
20. Takes care of toys	1	2	3	4	5	6
21. Doesn't talk or interact during group activities	1	2	3	4	5	6
22. Attentive towards younger children	1	2	3	4	5	6
23. Goes unnoticed in a group	1	2	3	4	5	6
24. Works easily in group	1	2	3	4	5	6
25. Hits teacher or destroys things when angry with teacher	1	2	3	4	5	6
26. Helps with everyday tasks (e.g., distributes snacks)	1	2	3	4	5	6
27. Accepts compromises when reasons are given	1	2	3	4	5	6
28. Opposes the teacher's suggestions	1	2	3	4	5	6
29. Defiant when reprimanded	1	2	3	4	5	6
30. Takes pleasure in own accomplishments	1	2	3	4	5	6

Appendix C

STUDENT-TEACHER RELATIONSHIP SCALE

Robert C. Pianta

Child: _____ Teacher: _____

Grade: _____

Please reflect on the degree to which each of the following statements currently applies to your relationship with this child. Using the scale below, circle the appropriate number for each item.

Definitely does not apply 1	Not really 2	Neutral, not sure 3	Applies somewhat 4	Definitely applies 5					
3. If upset, this child will seek comfort from me.					1	2	3	4	5
1. I share an affectionate, warm relationship with this child.					1	2	3	4	5
2. This child and I always seem to be struggling with each other.					1	2	3	4	5
4. This child is uncomfortable with physical affection or touch from me.					1	2	3	4	5
5. This child values his/her relationship with me.					1	2	3	4	5
6. This child appears hurt or embarrassed when I correct him/her.					1	2	3	4	5
7. When I praise this child, he/she beams with pride.					1	2	3	4	5
8. This child reacts strongly to separation from me.					1	2	3	4	5
9. This child spontaneously shares information about himself/herself.					1	2	3	4	5
10. This child is overly dependent on me.					1	2	3	4	5
11. This child easily becomes angry with me.					1	2	3	4	5
12. This child tries to please me.					1	2	3	4	5
13. This child feels that I treat him/her unfairly.					1	2	3	4	5
14. This child asks for my help when he/she really does not need help.					1	2	3	4	5
15. It is easy to be in tune with what this child is feeling.					1	2	3	4	5
16. This child sees me as a source of punishment and criticism.					1	2	3	4	5
17. This child expresses hurt or jealousy when I spend time with other children					1	2	3	4	5
18. This child remains angry or is resistant after being disciplined.					1	2	3	4	5
19. When this child is misbehaving, he/she responds well to my look or tone of voice.					1	2	3	4	5
20. Dealing with this child drains my energy.					1	2	3	4	5
21. I've noticed this child copying my behavior or ways of doing things.					1	2	3	4	5
22. When this child is in a bad mood, I know we're in for a long and difficult day.					1	2	3	4	5
23. This child's feelings toward me can be unpredictable or can change suddenly.					1	2	3	4	5
24. Despite my best efforts, I'm uncomfortable with how this child and I get along.					1	2	3	4	5
25. This child whines or cries when he/she wants something from me.					1	2	3	4	5
26. This child is sneaky or manipulative with me.					1	2	3	4	5
27. This child openly shares his/her feelings and experiences with me.					1	2	3	4	5
28. My interactions with this child make me feel effective and confident.					1	2	3	4	5

Appendix D

DIAL 3

Speed DIAL Record Form


Carol Mardell-Czudnowski

Dorothea S. Goldenberg

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Child's Name _____ Mother's Name _____
 Nickname _____ ☐ Boy ☐ Girl Father's Name _____
 Address _____ School _____
 Phone Number _____ Child's Primary Language _____ Teacher/Class _____

	Year	Month	Day
Screening Date	_____	_____	_____
Birth Date	_____	_____	_____
Chronological Age	_____	_____	_____

	Scaled Score					
	0 under 3 yrs.	1 3 yrs.	2 4 yrs.	3 5 yrs.	4 6 yrs.	Item Scaled Scores
1. Jump, Hop, & Skip A. Jumping 0 1 B. Hopping: (right) 0 1 2 3 4 5 6 (left) 0 1 2 3 4 5 6 C. Skipping: 0 = slide, walk, hop, other 1 = step/hop, or gallup 2 = skip	0	1-5	6-11	12-14	15	
2. Body Parts nose knee forehead knuckle hair thumb heel wrist neck chin	0-2	3-5	6-7	8	9-10	
3. Building A. B. C. D.  0 1 0 1 0 1 2 0 1 2	0	1-2	3-4	5	6	
4. Copying 1) + 0 1 2 5) b 0 1 2 2) W 0 1 2 6) ◇ 0 1 2 3) E 0 1 2 7) □ 0 1 2 4) Δ 0 1 2 8) s 0 1 2	0	1-2	3-6	7-0	11-16	

5. Colors red blue green gray yellow black purple	0-4	5-10	11-12	13-14	-	
6. Rapid Color Naming # of colors named in 30 seconds ____	0-4	5-9	10-19	20-24	25	
7. Concepts longest biggest least most fat full empty cold day night shortest littlest	0-3	4-8	9-10	11	12	
8. Actions fly it hang clothes drive it make whistling noise tell time tell how hot/cold write	0-4	5-9	10-11	12-13	14	
9. Letters & Sounds Ages 3 and 4 Ages 5 and 6 A. Alphabet Song: 0 = a-f 1 = g-o 2 = p-y 3 = z B. Letter Naming S B K f G r W C. Letter-Sound Correspondence: S B K f G r W	0 0	1-3 1-4	4-5 5-9	6-10 10-14	- 15-17	
10. Problem Solving 1. thirsty: 0 1 2 _____ 2. dark room: 0 1 2 _____ 3. break something: 0 1 2 _____	0	1-2	3	4	5-6	

Scaled Score Total (max. = 39)

Other

Screening DecisionUse cutoffs found in
Appendix E in the manual.Potential
delay OK

Cutoff level used: _____

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Vita

Badiyyah I. Waajid was born on May 26, 1948 in Richmond, Virginia, and is an American citizen. She graduated from Armstrong High School, Richmond, Virginia in 1966. She received her Bachelor of Science in Social Welfare from Virginia Commonwealth University, Richmond, Virginia in 1971. She received a Masters in Education from Virginia State University in 1993. She has worked as director of child development centers and has taught as an adjunct professor at John Tyler Community College and Virginia Commonwealth University.