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COMPETENCE AND ITS LINK TO EXTERNALIZING AND

INTERNALIZING PROBLEMS: A LONGITUDINAL STUDY

presented by

VASILIKI MOUSOULI

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of the requirements for the

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COMPETENCE AND ITS LINK TO EXTERNALIZING AND INTERNALIZING
PROBLEMS: A LONGITUDINAL STUDY

By

Vasiliki Mousouli

A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Department of Counseling, Educational Psychology, and Special Education

2006

ABSTRACT

COMPETENCE AND ITS LINK TO EXTERNALIZING AND INTERNALIZING
PROBLEMS: A LONGITUDINAL STUDY

By

Vasiliki Mousouli

The purpose of this study was to explore the empirical links between social and

academic competence and externalizing and internalizing problems over time. Four

different models of competence were examined, one with self-reported indicators of

competence, one with teacher-reported indicators of competence, an academic

competence model, and a model, which included teacher-student relationships as an

indicator of competence.

Results from path analyses showed a strong continuity from Fall of Year 1 to

Spring of Year 2 for both competence indicators (i.e., social skills, study skills, peer

support, and scholastic competence) and externalizing-internalizing problems. Important

findings emerged from the teacher-student relationships model, which showed that

positive teacher-student relationships significantly predicted high social and study skills

and low externalizing and internalizing problems almost two years later through the

mediating effects of prior levels of social and study skills and externalizing and

internalizing problems respectively. Moreover, externalizing problems directly predicted

lower teacher-student relationships while study skills predicted positive teacher-student

relationships 18 months later.

Results also demonstrated that externalizing problems consistently predicted low

scholastic self-competence over time while study skills predicted low externalizing

problems. An interesting finding was that internalizing problems predicted positive scholastic self-competence. On the other hand, study skills predicted low internalizing problems.

Competencies have been identified as protective factors against the development of childhood psychopathology in previous studies. This study demonstrated that teacher-student relationships and students' study skills hold promise for preventing externalizing and internalizing problems and enhancing students' well-being. Given the accumulation of empirical evidence regarding the importance of competence indicators, future research should pay more attention to the empirical study of protective factors.

To my beloved fiancé, Christos and my parents!

ACKNOWLEDGMENTS

The completion of this dissertation would not have been possible without the constant support of many people. First, I would like to acknowledge my advisor, Dr. Jean Baker and my committee members, Dr. Hi Fitzgerald, Dr. John Carlson, and Dr. Mark Reckase. To my advisor, Dr. Jean Baker, there are no words to thank you for facilitating my way towards my degree completion. Your guidance, continued support, and flexibility made me feel secure and confident that I can succeed! To Dr. Hi Fitzgerald, you challenged my thinking and helped me make this dissertation a quality work! But I also need to thank you for your continued support throughout my studies at MSU. I'm looking forward to continuing to work with you in the future. To Dr. John Carlson, your thoughtful contributions and your continued support were very important to me. To Dr. Mark Reckase, thank you very much for the time you devoted to this dissertation. Your excellent teaching of statistical analysis has made this study possible for me. To Jessica Barnes, your help and guidance with the data analysis have been very important to me. I also want to thank Dr. Evelyn Oka. You've challenged my thinking and shaped my identity as a School Psychologist.

I would like to express my deep love and gratitude to my fiancé, Christos whose constant support and caring helped me throughout my studies and made my stay in the U.S. possible. Your continuous encouragement when things seemed difficult gave me strength when I needed it most and helped me overcome every obstacle in my way.

A deep thank you goes to my parents who were beside me at every step I have made even when their physical presence in my life in Michigan was not possible. Thank

you not only for supporting my decisions but also for helping me take risks and push myself beyond my comfort level! I would not have been here without you! Thank you to my sweet sister, Natassa who sacrificed her summer vacations to be with me before my defense! My last days in Michigan would not have been easy without you! And of course, I cannot close this paragraph without thanking my brother whose love and support have always been there for me!

Special thanks go to my roommates, Rozeta, Lela, and Irini! You stood to me like family. There are no words to express my gratitude for the endless hours you spent listening to me and supporting me when I needed you. Thank you for helping me not to feel lonely when I could not reach my family. You'll always be in my heart!

To my cohort and dearest friends, My, Sonia, Nora, and Jana! Your sweetness, love, and support made my stay in Michigan so pleasant. How would the endless hours of studying in the library and coffee shops have been possible without you? To Cheryl, thank you for being a teacher and a friend to me! Your support and friendship mean a lot to me! Finally, to my dearest friends, Tania and Fofi whose love, reassurance, and belief in me helped me tremendously!

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CHAPTER 1

INTRODUCTION

The growing number of children who experience mental health problems explains the unremitting interest that clinicians and researchers show for the identification, treatment, and prevention of childhood disorders. Epidemiological studies estimate that 1 in 5 children in the United States manifest some type of difficulty and 1 in 10 have a clinical disorder that is associated with impaired functioning (see Mash & Dozois, 2003). Both externalizing and internalizing problems have high prevalence in the childhood population (Achenbach, Howell, McConaughy, & Stanger, 1995) and are associated with a host of negative outcomes in children's life, such as peer rejection, school failure, and low self-esteem.

Although there is an extensive body of research regarding childhood psychopathology, little attention has been given to children's competencies and even less attention to the relation of competence to psychopathology. However, increasing evidence shows that competence and psychopathology are conceptually and empirically related and need to be studied together (Garmezy & Masten, 1991; Garmezy, Masten, & Tellegen, 1984; Masten & Coatsworth, 1995; Masten & Curtis, 2000). Masten and Curtis (2000) state that "though complex, the constructs of competence and psychopathology each concern psychosocial adaptation and judgments about the individual differences in the successfulness of adaptive functioning" (p.529). Competence refers to the effectiveness of individual adaptation in the environment and psychopathology, besides various symptoms of the disorder, is often related to "impairment" in adaptive functioning.

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The two constructs of competence and psychopathology have historical, conceptual, and empirical links (Masten & Coatsworth, 1995; Masten & Curtis, 2000). The links between them started being closely studied 30 years ago with the emergence of resilience research (Garmezy & Masten, 1991; Masten & Curtis, 2000). Resilience research generated from studies of psychopathology, in which researchers observed that mentally ill patients with better premorbid competence had better prognosis than the rest of the patients (Glick & Zigler, 1986; Glick, Zigler, Baldwin, Baldwin, & Cole, 1990; Zigler & Phillips, 1961). Investigators also noted that children at risk for psychopathology followed different pathways of development.

Competence and psychopathology have also strong empirical links (Cole, 1990; Masten & Coatsworth, 1995; Masten & Curtis, 2000). Research shows that competent children have the lowest scores on problem checklists while incompetent children have the highest scores (Blechman, Tinsley, Carella, & McEnroe, 1985). After many decades of research, Kohlberg, LaCrosse, and Ricks (1972) concluded that adult psychopathology can be predicted only by broad indicators of childhood problems: school failure, poor peer relationships, and antisocial behavior. Competence rather than the absence of symptoms were more powerful for the prediction of adult problems (Kohlberg, LaCrosse, & Ricks, 1972). This finding indicates that failure to achieve age-salient developmental tasks like academic and social competence has more important implications for later development than the absence of symptomatology.

Extensive research on risk and resilience has shown that there are many different risk and protective factors associated with disorder. However, there is no direct link between a specific risk factor and a single disorder, rather it seems that a variety of

adaptive functions are influenced at the same time leading to diverse symptomatology (Coie et al., 1993). Poor peer relationships, for instance, predict different types of problems, such as early academic problems, adolescent conduct problems, and internalizing disorders (Coie et al., 1993). It is therefore, important to study multiple factors simultaneously in order to uncover the relations between competence and psychopathology.

Tracing the links between competence and psychopathology has significant implications: it has the potential to inform theories about the etiology of childhood psychological problems and provide valuable information about early intervention and prevention (Coie et al., 1993; Masten & Coatsworth, 1995; Masten & Curtis, 2000; Sroufe & Rutter, 1984). For instance, if competence can act as a protective factor against the development of psychopathology, then intervening to enhance children's social competence in schools might be effective for the prevention of externalizing and internalizing problems.

Despite these conceptual and empirical links and the implications of these associations, there is little systematic research regarding the interrelatedness of competence and psychopathology. The purpose of this study is to consider these two constructs together in order to explore the ways by which competence and psychopathology are linked. Specifically, in terms of psychopathology, the focus of this study will be on externalizing and internalizing problems. In terms of competence, the focus will be on social and academic competence. In the following chapter, I will define these constructs and I will examine the conceptual and empirical links between

competence and psychopathology. Conceptual models regarding these linkages as well as

empirical studies in support of or contrary to these models will be presented.

CHAPTER 2

LITERATURE REVIEW

Theoretical Framework for Understanding the Relations between Competence and

Behavior Problems

This study is situated within a developmental psychopathology framework and a

risk and adaptation conceptual framework. Developmental psychopathology is based on

the premise that the study of normal and pathological should be jointly considered

(Sroufe, 1990). It is necessary to understand adaptational processes in order to begin

elucidating psychopathological processes and vice versa. Competence has been

considered a construct central to the understanding of adaptive and disordered behavior

(Garmezy & Masten, 1991). An increasing interest in positive psychology has shifted

researchers' focus from deficit perspectives of maladjustment to positive indicators of

adjustment (Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001; Cowen,

2000; Seligman & Csikszentmihalyi, 2000), which has led to the study of children's

competencies, strengths, and the phenomena of resilience.

Child by Environment theories of risk and adaptation emphasize the importance

of risk and protective factors for children's adjustment (Coie et al., 1993; Ladd, 1996;

Ladd & Burgess, 2001). They consider the relationships that children form with

significant adults and peers in different contexts as crucial for their psychological and

school adjustment (Ladd & Burgess, 2001). Risk factors are defined as relational and

environmental factors that increase the probability of adjustment difficulties, whereas

protective factors decrease the probability of adjustment problems and promote resilience

(Coie et al., 1993; Masten, 1994). For instance, teacher-student relationships and peer

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support can act as a protective factor for children with behavior problems and thus, facilitate their adjustment.

<div align="center">Construct Definitions</div>

Definition of Competence

Competence is closely related to adaptation and refers to the "capability for and manifestation of favorable adaptation" (Masten & Coatsworth, 1995). Based on Masten and Coatsworth's review (1995), adaptation has been defined differently in different theories. Some psychological theories have focused on internal adaptation, which includes processes or outcomes related to self-regulation, self-perceptions, and motivation while others place greater emphasis on external adaptation, such as academic achievement, social relationships and interactions with the environment (Masten & Coatsworth, 1995). Failure to achieve internal adaptation is often related to internalizing problems, such as depression and anxiety, whereas failure to achieve external adaptation is related to externalizing problems, such as aggression, peer rejection, and delinquency (Masten & Coatsworth, 1995).

Ford (1985) recognized the complexity and ambiguity of the construct of competence and emphasized that the concept needs to be operationalized more precisely before being used in research. He indicated five interrelated yet distinct meanings of competence generated from different theoretical perspectives at the time of his review: a) competence as a motivational construct referring to the ability of the individual to pursue goals and be effortful (e.g., Harter, 1985a; Ryan & Deci, 2000) ; b) competence as a subjective evaluation of one's capability to affect the environment: self-efficacy (e.g., Bandura, Barbaranelli, Caprara, & Pastorelli, 1996; Bandura, Barbaranelli, Caprara, &

<div align="center">6</div>

Pastorelli, 2001); c) competence as a personal "repertoire" of skills and abilities, such as

social skills (e.g., McGinnis & Goldstein, 1990). These skills represent the individual's

potential and do not necessarily translate into actions or successful outcomes; d)

competence as effective behavior in relevant contexts, such as academic achievement,

accomplishment of social goals consistent with the individual's developmental level, or

successful peer relationships (e.g., Bandura et al., 1996; Bandura et al., 2001; Waters &

Sroufe, 1983); and last, e) competence as a personality trait (e.g., Becker & Krug, 1964).

Masten and Coatsworth (1995) identified several common themes and differences

in definitions of the construct of competence. First, competence definitions recognize that

competence is a multidimensional construct that refers to mental processes or behavioral

outcomes regarding the "effectiveness of adaptation in the environment" (Masten &

Coatsworth, 1995). Processes underlying the construct of competence are complex and

require the integration of cognitive, affective, and motivational mental functions in order

to achieve adaptive behavior. Outcomes refer to observable manifestations of competence

through behaviors. Moreover, in most definitions, competence is considered a

developmental construct since indicators of competence change across development.

Differences in the definitions of competence include the emphasis on internal versus

external adaptation and processes versus manifestations.

According to Masten and Coatsworth (1995), competence is considered "a pattern

of effective performance in the environment, evaluated from the perspective of

development in ecological and cultural context" (p. 724). In their definition, the focus is

on both processes within the individual and transactions between the individual and the

environment. The criteria for judging "effective performance in the environment" are

based on successful accomplishment of "salient developmental tasks". These tasks might be different based on the historical, cultural, and ecological context.

Several studies have explored the different dimensions of competence (e.g., social, academic competence) and examined whether they are distinct dimensions or reflect manifestations of global competence. Harter's work on self-perceived competence suggests that academic/scholastic and social competence are distinct dimensions of competence (Harter, 1982, 1985a). Using factor analysis, Tanaka and Westerman (1988) showed that competencies in the academic domain are separable from competencies in the social domain measured with both self-perceptions (i.e., Harter's measure) and mother behavior ratings (i.e., Achenbach's CBCL rating scale).

In this study, the construct of competence includes both internal processes from the child's perspective (i.e., self-perceptions about academic competence and self-perceptions about peer support) and judgments about competence by outside observers, specifically teachers (e.g. teacher-rated social skills). Therefore, the focus is on both observed skills and manifestations of behavior and self-reports of competence. Competence, in addition to its biological definition, is also considered a contextual concept because it is influenced and evaluated by the particular environment (i.e., classroom teachers). Based on these characteristics, competence in this study is defined in terms of effective performance in age-salient developmental tasks (i.e., academic and social) as judged both by teacher-rated manifestations of behavior in the school context and student self-reports. This definition is congruent with Masten and Coatsworth's definition of competence presented above as well as other attempts to define the construct (e.g., Ford, 1985; Waters & Sroufe, 1983).

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Definition of Social Competence (Social Skills and Peer Support)

One social competence indicator considered in this study concerns social skills rated by teachers. Social skills were first examined as a component of adaptive behavior. Adaptive behavior, originally named "social maturity" originated from early work in mental retardation (Kamphaus & Frick, 2002). In 1953, Doll noted that individuals with mental retardation not only had intellectual deficits but they also experienced difficulties with daily living skills (as cited in Kamphaus & Frick, 2002). He argued that assessment of daily living skills was necessary. He created the Vineland Social Maturity Scale, later called "Vineland Adaptive Behavior Scale", which assesses communication skills, daily living skills, socialization, coping skills, interpersonal-social skills and other dimensions of competence. Thus, early on, social skills were considered an important contributor to effective adaptation in the environment for children with mental retardation.

Several studies provided evidence for the importance of adaptive behavior for children with mental retardation. For instance, one study using multitrait/multimethod structural equation modeling showed evidence for the existence of four domains of adaptive behavior: cognitive competence, social competence, social maladaptation, and personal maladaptation in a sample of children with mental retardation (Widaman, Stacy, & Borthwick-Duffy, 1993). Although there is no universally accepted definition of adaptive behavior, it is often defined as the accomplishment of daily activities that are necessary for social and personal independence (Kamphaus & Frick, 2002). Merrell and Popinga (1994) examined the relationship between ratings of adaptive behavior and social competence and they found moderate to strong relations between social

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competence and adaptive behavior, especially the social and communication domains of adaptive behavior suggesting that social competence is one aspect of adaptive behavior.

In the literature, there are several approaches to the operational definition of social competence: social skills, sociometric status, friendships/relationships, and functional outcomes (Rose-Krasnor, 1997). Based on the social skills approach, social competence is conceptualized as a set of skills and is measured with the use of behavior checklists. A difficulty with this approach concerns the identification of social skills that lead to important social outcomes. Gresham (1995) reintroduced *social validity,* an important component in the definition of social skills based on McFall's work (1982). He indicated that social skills are socially significant behaviors in that they lead to important social outcomes (e.g., peer acceptance, friendships, positive self-esteem, and school adjustment). The *social validity* definition is beneficial because it identifies social skills in terms of the outcomes that they bring about.

Social competence and social skills have often been used interchangeably in the literature. However, a distinction has been made between the two terms based on McFall's (1982) work. Social skills represent specific behaviors that others (e.g., teachers, peers) may judge as socially competent (Gresham, 1995). Therefore, social skills are the behaviors, and social competence refers to the judgments of these behaviors as competent. In this study, teacher-rated social skills are considered one indicator of the construct of social competence.

The sociometric approach to social competence identifies students' peer status (e.g., popular, accepted, rejected). Relationship approaches to social competence assess the quality of individual friendships. Functional approaches identify context-specific

social goals and focus both on outcomes of social behavior and on the mechanisms behind these outcomes (e.g. information processing). The relations among these measures of social competence (i.e., social skills, peer status, relationship, and functional indicators) are moderate (Rose-Krasnor, 1997). This might be due to differences in the methods and/or the raters. However, it is also possible that each indicator reflects a different aspect of social competence (Rose-Krasnor, 1997).

Rose-Krasnor (1997) integrated the above approaches by viewing "social competence" as an organizing construct that is defined as "effectiveness in interaction" and has a variety of indicators: friendship, peer status, social self-efficacy, social support, and others. She conceptualized her theoretical model as a prism that has three different hierarchical levels. The top level of the prism is called "Theoretical Level" and includes "social competence" as a broad theoretical construct. The next level is called "Index Level" and includes a variety of indicators of social competence as those mentioned before (i.e., friendship, peer status, social support etc.). The third level called "Skill Level" includes specific individual social skills, abilities, and values, such as problem-solving and empathy. These skills are the "building blocks" or base of friendships, interactions, and peer status from the middle level. In the current study, aspects of Rose-Krasnor's prism are included. Specifically, social competence is considered a broad theoretical construct whose indicators include self-perceptions of peer support and teacher-rated social skills.

Definition of Academic Competence (Study Skills, Academic Self-Competence and Grades)

Study skills have been defined as behaviors or strategies that facilitate the processing of new material and promote learning (DiPerna & Elliott, 2000). They have also been defined as, "those competencies associated with acquiring, recording, organizing, synthesizing, remembering, and using information and ideas" (Bos & Vaughn, 2002). Study skills have been shown to be conducive to academic achievement. Students with learning and behavior problems seem to have difficulty developing these skills (Bos & Vaughn, 2002). DiPerna and Elliott (2001) found significant moderate to strong correlations between study skills and prior reading achievement (r=.38 for Kindergarten to 2nd graders and r=.56 for 3rd to 6th graders). They suggested that study skills become more important as students become older because the emphasis of the instruction shifts from learning to read to reading to learn. Although the direct effect of study skills to academic achievement was small (from .02 to .13) after controlling for prior achievement, interpersonal skills, and motivation in their structural equation model, the researchers believe that study skills are an important component of academic competence (DiPerna, Volpe, & Elliott, 2002). Another study found that study skills were an important predictor of problem behavior (including externalizing and internalizing problems) for female elementary-age students (Thorpe, Kamphaus, Rowe, & Fleckenstein, 2000, August). In this study, study skills include strategies such as problem analysis, organizational skills, homework completion, test confidence, and hard working.

Students' self appraisals about their *academic/scholastic competence* constitute an important dimension of academic competence, as well. Harter's work on self-evaluations of competence has focused on its multidimensional and hierarchical nature (Harter, 1982, 1985a, 1985b, 1999). Harter (1982) conceptualized five different dimensions of

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competence (i.e., scholastic, social, conduct, athletic, and appearance) as subordinate domains of a global construct of self-worth, which does not simply consist of the sum of the specific competence dimensions. Each specific domain contributes to the overall self-worth but the degree of that contribution is dependent upon the value that the specific domain has in the child's life. For instance, if a child believes that being a good student is very important but he does not think that being a good athlete is so important, then scholastic self-concept will weigh more on overall self-worth than athletic self-concept. This study focuses on the specific domains of competence (i.e., academic and social).

Harter (1999) has considered the developmental aspects of self-perceived competence and she found that children ages 4-7 were able to make evaluative judgments of the five domains but these judgments were reduced to two broad dimensions; cognitive-athletic competence formed one dimension and appearance-social-conduct competence formed a second dimension. Children in middle to late childhood were able to differentiate among the five competence domains. This developmental difference might be attributable to children's increased cognitive ability as well as their ability to make social comparisons and to understand the way others judge them (Cole, Jacquez, & Maschman, 2001). When students' perceptions of their scholastic competence were compared to teacher-rated measures of academic achievement, moderate relations were discovered ranging from .30 for 3rd graders and increasing as the child advanced in the grades reaching .60 in 6th grade (Harter, 1982, 1985a), thus indicating that children become increasingly more accurate in judging their scholastic competence. In this study, Harter's scholastic self-perceived competence will be used in addition to teacher-rated study skills and grades as an indicator of overall academic competence.

Definition of Psychopathology

Definitions of psychopathology reveal the conceptual links between competence and psychopathology. Child psychopathology has been defined as an "adaptational failure" in cognition, affect, physiology, and/ or behavior (Mash & Dozois, 2003). Mash and Dozois (2003) explain the concept of "adaptational failure":

"Adaptational failure may involve deviation from age-appropriate norms, exaggeration or diminishment of normal developmental expressions, interference in normal developmental progress, failure to master developmental tasks, failure to develop a specific function or regulatory mechanism, and/or the use of non-normative skills (e.g., rituals, dissociation) as a way of adapting to regulatory problems or traumatic experiences" (p. 6).

The role of adaptation and developmental benchmarks is evident in the above definitions. Similarly, Masten and Coatsworth (1995) define psychopathology as "patterns of maladaptive behavior or psychological distress that interfere with some aspect of adaptation" (p.716). In the diagnostic manual of the American Psychiatric Association (2000), criteria for disorder diagnosis or associated features of disorders include competence characteristics. Significant impairment in social or academic functioning is often one of the criteria for diagnosis. Internal symptoms or behaviors that compromise external adaptation are also included in the descriptions of disorders.

In this study, I focus on externalizing (i.e., aggression, conduct problems, hyperactivity) and internalizing problems (i.e., depression, anxiety, and somatization). The terms "externalizing" and "internalizing" were first introduced by Achenbach and

Edelbrock in 1978 and refer to dimensions of child psychopathology that were empirically derived. Children experiencing externalizing problems are also described as undercontrolled, exhibiting disruptive behaviors while children experiencing internalizing problems are described as overcontrolled, exhibiting internal adjustment difficulties.
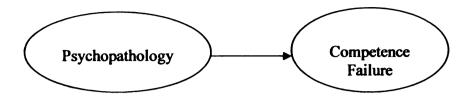
Ecological-Transactional Model and Risk and Resilience Perspectives as a

Theoretical Framework for Understanding Competence and Behavior Problems

Child by Environment theories of risk and adaptation emphasize the importance of risk and protective factors for children's adjustment (Ladd, 1996; Coie et al., 1993). They consider the relationships that children form with significant adults and peers in different contexts as crucial for their psychological and school adjustment (Ladd & Burgess, 2001). Risk factors are defined as relational and environmental factors that increase the probability of adjustment difficulties, whereas protective factors decrease the probability of adjustment problems and promote resilience (Masten, 1994; Coie et al., 1993). For instance, teacher-student relationships and peer support can act as a protective factor for children with behavior problems and thus, facilitate their adjustment.

Conceptual Models Linking Competence and Psychopathology
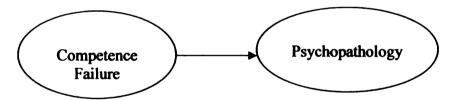
Conceptual links between competence and psychopathology are manifest in some of the definitions presented above. In addition, there are a number of ways by which competence and psychopathology are connected. Masten and Coatsworth (1995) have identified four theoretical models regarding the relation between competence and psychopathology. The first two models will be explored in depth in this study.

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1. Psychopathology affects competence

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  ┌─────────────────┐              ┌─────────────────┐
 (   Psychopathology  )──────────▶(    Competence     )
  └─────────────────┘              │     Failure      │
                                   └─────────────────┘
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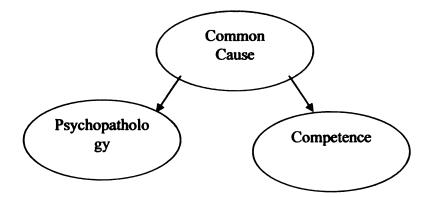
This conceptual link between competence and psychopathology is congruent with a medical model of disorder (Masten & Coatsworth, 1995; Masten & Curtis, 2000). For neurodevelopmental disorders, like schizophrenia and autism, this link is apparent. However, for disorders like depression, the direction of this link is not as simple. There are theories that suggest that competence failures contribute to depression and vice versa. This leads us to the next theoretical model.

2. Competence failure leads to psychopathology

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  ┌─────────────────┐              ┌─────────────────┐
 (    Competence     )──────────▶(   Psychopathology  )
  │     Failure      │             └─────────────────┘
  └─────────────────┘
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Competence failures might lead to psychopathology. For instance, academic failure and low peer support could lead to distress and depression. There are several empirical models in support of the above conceptual link that will be presented in the next section (see, Cole, Martin, & Powers, 1997; Patterson & Capaldi, 1990). The purpose of this study is to clarify the direction of the relation between competence and psychopathology (Models 1 & 2) using two waves of longitudinal data.

3. A third factor causes both competence and psychopathology

The shared variance between competence and psychopathology might also be due to common biological (e.g., temperamental factors, attention regulation, IQ) or environmental (e.g. parenting, SES) factors that contribute to both lower competence and symptoms of psychopathology (Masten & Coatsworth, 1995; Masten & Curtis, 2000). Although this model has theoretical strength, it won't be the focus of this study.

4. Competence and psychopathology are the opposites of the same dimension of behavior

Competence   Psychopathology

Masten and Coatsworth (1995) refer to competence and psychopathology as potentially being the two ends of the same dimension. For instance, academic achievement could be considered as an indicator of competence, while academic failure could be a symptom of psychopathology. This overlap between competence and psychopathology criteria might also be explained by measurement problems (Masten & Curtis, 2000). For instance, there is item overlap in measures used to assess rule-abiding and rule-breaking behavior, which are considered indicators of social competence or conduct problems respectively (Masten & Curtis, 2000). This conceptual model implies that competence is the polar opposite of psychopathology and thus, it may be considered

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that it is redundant to study competence in addition to psychopathology (Thorpe et al., 2000, August). However, empirical evidence presented in the next section does not support this conclusion.

In this study, the first two conceptual models will be explored and existent empirical evidence in support or not of these conceptual models will be presented. However, methodological limitations of the studies do not allow definite conclusions about the direction of the effects based on the existing literature. For instance, there are not many longitudinal studies that can demonstrate causal directions between competence and psychopathology, and when they exist, they do not control for both competence and symptoms at time 1 so that interpretations for the directions of the effects can be made.

Empirical Studies Linking Competence and Psychopathology

Psychopathology Leads to Competence Failures

A study using the 31-year-old New York longitudinal dataset, which consisted of a primarily white, Jewish, middle to upper class sample, explored the relation between two factors, Aggression and Affect (e.g. depression, anxiety) and three adjustment outcomes (i.e., school, social, and family adjustment) at ages 1 to 14 (Lerner, Hertzog, Hooker, Hassibi, & Thomas, 1988). A structural equation model showed that Aggression in middle childhood (Time 2) was a strong predictor of adolescent adjustment difficulties (Time 3) while Affect did not predict adjustment independent of the aggression construct. Both constructs (i.e., Aggression and Affect) showed high consistency from early childhood (Time 1) to middle childhood (Time 2). This study provided some support that psychopathology may lead to competence failures. However, the lack of control of the

competence indicators at the outset of the study prevents us from reaching definite conclusions about the direction of the effects.

Competence Failures Lead to Psychopathology

On the other hand, there is empirical support that competence failures contribute to psychopathology. A longitudinal study of 5- to 13-year-old boys using the Dunedin (New Zealand) dataset shed some light on the role that reading achievement can play in the developmental trajectories of 4 groups of children: a) children with attention deficit disorder (ADD) only, b) children with delinquency only, c) children with both ADD and delinquency, and d) children with no disorder (Moffitt, 1990). It was the mixed group of children with ADD and delinquency that had the worst reading achievement scores while the other groups did not differ significantly at any age. This group experienced reading problems right from the beginning of entering school while at the same time, their antisocial problems increased. The author suggested that this temporal co-occurrence might indicate that reading failure is a risk factor for the exacerbation of antisocial behavior for boys with ADD. However, the design of the study does not allow for a definite conclusion regarding the direction of this relation.

A two-year longitudinal study examined the relation between academic and social competence and externalizing problems (Lane, Gresham, MacMillan, & Bocian, 2001). The researchers measured social competence with a teacher-rated social skills measure and academic competence with a teacher-rated measure as well as reading and mathematics scores on group achievement tests. They used three groups of fifth-grade students: 1) students nominated "at-risk" for school failure by their third-grade teachers

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and exceeding the 90th percentile on externalizing problems and hyperactivity based on the ratings of their fifth-grade teachers, 2) students nominated "at-risk" for school failure by their third-grade teachers but not exceeding the 90th percentile on externalizing problems and hyperactivity based on the ratings of their fifth-grade teachers, 3) a comparison or average group. They found that competence indicators as a whole accounted for 57% of the variance in group differences and that both at-risk fifth-grade groups had significantly lower scores on each measure of academic and social competence at third grade relative to the comparison group. These findings provide preliminary evidence for the importance of competence for differentiating between students at-risk for school failure and average students.

A 2-year longitudinal study found that teacher-rated adaptive competencies at Time 1 (specifically a composite score of social skills, study skills, adaptability, and leadership) significantly predicted teacher-rated behavior problems (of both externalizing and internalizing nature) at Time 2 for 5- to 8-year-old boys and girls after controlling for externalizing and internalizing problems at Time 1 (Thorpe et al., 2000, August). In addition, competencies negatively predicted disciplinary reports for girls only, again after controlling for externalizing and internalizing problems. These findings suggest that the predictive power of competence is over and beyond that accounted by externalizing and internalizing behaviors.

The direction of the relation between competence and psychopathology has been considerably explored in the depression literature, as well. Currently there are two prominent models in the depression literature: 1) a competency-based model (Cole, 1990; Cole et al., 1997; Cole, Martin, Powers, & Truglio, 1996; Masten & Curtis, 2000;

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Patterson & Capaldi, 1990; Patterson & Stoolmiller, 1991; Wierzbicki & McCabe, 1988) and 2) a dual failure model of depression (dual in terms of both academic failure and peer rejection) (Hinshaw, 1992; Masten & Curtis, 2000; Patterson & Capaldi, 1990; Patterson & Stoolmiller, 1991).

A multitrait-multimethod structural equation model analyzed by Cole and colleagues (1996) showed that social competence at Time 1 negatively predicted depression 6 months later for sixth graders after controlling for depression at Time 1, thus providing support for a social competence model of depression. However, the same finding was not true for third graders, which the authors suggested being due to developmental differences. For instance, family might be more salient than peers for younger children or younger children might not have developed refined social comparison skills yet. On the other hand, academic competence at Time 1 did not predict depression at Time 2. The authors suggested that academic competence might affect depression indirectly through its influence on social acceptance or other dimensions of competence might be more relevant to depression (e.g., conduct-behavior competence). On the other hand, depression at Time 1 did not predict social or academic problems 6 months later, thus not providing support for a dual failure model of depression. However, as the authors indicated a 6-month interval might be short for such a change in social and academic competence to occur.

On the other hand, a cross-sectional study by Patterson and Stoolmiller (1991) using structural equation modeling found partial support for a dual failure model of depression. Good peer relations were negatively related to depression for three different samples of children (i.e., two cohorts of fourth grade boys at risk for antisocial behavior,

and 9- to 12-year old children from separated families). However, academic achievement was negatively related to depression for one sample of children only (Patterson & Stoolmiller, 1991). The researchers recognized that the cross-sectional nature of their data didn't allow them to reach definite conclusions about the direction of the relations. That means that depression could lead to poor peer relations, which would render support to a competency-based model of depression or the effects could be bidirectional. Longitudinal studies that control for the dependent variable at the outset of the study are necessary to clarify the direction of these relations.

Competence as a Protective Factor for Psychopathology

The role of competence as a protective factor has been explored, as well. A longitudinal study using the Dunedin (New Zealand) dataset of 11- to 15-year-old children examined the relation between social competence and DSM-III disorders (McGee & Williams, 1991). The construct of social competence included indices of parent and peer attachment, involvement in school activities, coping resources, and children's self-perceptions of their strengths. When examined concurrently, it was found that at age 15, the probability of a DSM-III disorder increased six-fold with lower levels of social competence. A stronger relation was found between externalizing disorders and social competence for both boys and girls than between internalizing disorders and social competence, which appeared only for girls. However, when examined longitudinally, social competence did not directly predict disorder four years later. Externalizing disorders at age 15 were best predicted by the existence of an externalizing disorder at age 11. Although competence did not predict disorder longitudinally, it did predict persistence of the disorder over time. In other words, the presence of disorder together

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with low social competence at age 11 did predict externalizing disorders at age 15 suggesting a protective role of social competence for the prognosis of disorder.

Another longitudinal study using data from the Ontario Child Health Study focused on three types of disorder: conduct disorder, hyperactivity, and emotional disorder for children ages 4 to 16 years old (Offord et al., 1992). "Problems getting along" with family, teachers, or peers and school performance based on parental report were used as prognostic and risk factors. Logistic regressions showed that "problems getting along with others" at Time 1 for children with a disorder at that time had prognostic value since it independently predicted the persistence of one or more disorders four years later. Poor school performance did not predict disorder persistence. Neither poor school performance nor problems with "getting along with others" predicted the risk for disorder onset four years later. Moreover, children with conduct disorder had significantly more problems "getting along with others" four years later compared to the nondisordered group. Although social impairment is an associated feature of conduct disorder, the authors suggested that it could be indicative of the severity of the disorder. However, children with conduct disorder did not differ on school performance from the nondisordered group. On the other hand, children with hyperactivity or emotional disorder at Time 1 had more problems with school achievement at Time 2 compared to the nondisordered group but they did not differ significantly from the nondisordered group regarding "getting along with others". Overall, in this study, social competence, defined as "getting along" with peers, parents, and teachers, predicted the persistence of disorder over time.

A cross-sectional study explored the relation between competence and behavior problems as well as attitudinal indicators of competence using four competence groups: 1) Competent children (who scored above the median in both academic and social competence), 2) Incompetent children (who scored below the median in both academic and social competence), 3) Academically Skilled children (who scored above the median only in the academic competence dimension), and 4) Socially Skilled children (who scored above the median only in the social dimension) (Blechman, Tinsley, Carella, & McEnroe, 1985). Children in the competence group differed significantly in social and academic competence from children who had strengths only in one area. Teachers rated them as having fewer behavior problems and being less inattentive and distractible than children in the other three groups. Moreover, they were perceived by their peers as happier than children in the incompetence or in the academically skilled group and they self-reported significantly higher scholastic and social competence than the children in the incompetence group. The academically skilled group scored higher in Harter's scholastic competence than the socially skilled group or the incompetent group and they scored close to the mean in behavior problems. The socially skilled group on the other hand was rated higher on conduct problems and nervousness compared to all the other groups. However, peers rated them happier than the incompetence or academically skilled group and they perceived themselves more socially competent than the other groups. It is apparent therefore that children who were competent in at least one domain (i.e., academic or social) fared better than those who were competent in neither area. Although the direction of the effects was not clear due to the cross-sectional nature of the

data, this study provided preliminary evidence that competent children had fewer behavior problems and were perceived as happy and successful by self and others.

A 3-year longitudinal study used academic and social competence at Time 1 as a predictor of "signs of disturbances" (i.e., academic problems, school behavior problems, receipt of mental health services, child's need for additional help, suicidal behavior, and police contacts) at Time 2 (Stanger, Achenbach, & McConaughy, 1993). A large national sample of 995 children having at least one of the disturbances and a matched control sample was used. Using path analysis, it was found that low parent-rated school competence added predictive power for academic and school behavior problems three years later over and above that accounted by behavioral and emotional problems at Time 1. Moreover, low school competence at Time 1 predicted mental health services at Time 2 for boys. It also predicted parent-reported need for professional help and police contacts at Time 2 for 6- to 11-year-old boys. In addition, social competence at Time 1 was a direct significant predictor of suicidal behavior and mental health services at Time 2 for 12- to 16-year-old girls. It also predicted police contacts at Time 2 for girls and boys. Overall, it was shown that social and school competence negatively predicted various "signs of disturbances" three year later after controlling for behavioral/emotional problems at Time 1, thus suggesting a protective function for children against the development of a variety of problems.

Some researchers endorse a strength-based approach and they conceptualize strengths as both external assets, resources (e.g., family and peer support) and internal abilities (e.g., humor, ability to adapt) (e.g., Lyons, Uziel Miller, Reyes, & Sokol, 2000). In a cross-sectional study, Lyons and colleagues (2000) found that strengths, such as

academic strengths, psychological strengths, and peer strengths, negatively predicted risk behaviors (e.g. suicidality, dangerousness, runaway, or delinquency) in a group of children and adolescents in residential placements after controlling for admission risk levels. In addition, children's higher levels of strengths were associated with positive discharge placements (e.g., home of parent, adoptive home) compared to negative placement (e.g., hospital, detention). The researchers concluded that "psychopathology is not the opposite of strengths. Many children and adolescents with severe psychopathology also have significant strengths. Others have few" (p. 180). Thus, strengths assessment in addition to risk assessment might be important for the prediction of future pathways.

In another cross-sectional study, Cohen and colleagues (1988) divided clinically-referred children ages 6 to 12 years into three competence groups (i.e., high, mixed and low) based on whether competence scores were above or below the median on four out of five measures that included IQ, reading, self-esteem, locus of control, and coping style (the remainder was designated as the mixed group). Children in the high competence group were rated by teachers and parents as having fewer problems and being more competent socially and academically. Children in the mixed competence group were perceived similarly to the high competence group by teachers and parents although they came from more stressful lower income families similarly to the low competence group. The authors suggested that a child's competencies protected them against stress and the development of symptomatology.

In a cross-sectional study, Luthar (1991) explored competence as a protective factor for adolescents experiencing stressful life events. She found that "social

expressiveness", a type of social skills, moderated the effects of stress on "sociability", which was defined as the child's popularity with peers. In other words, under conditions of high stress, adolescents with high social expressivity were considered significantly more sociable by peers than adolescents with low social expressivity. It seems therefore, that social skills and specifically "social expressiveness" functioned in a protective way for adolescents experiencing high levels of stress.

Teacher-Student Relationships as a Protective Factor

Recent findings support the importance of relational factors, such as teacher-student relationships for children's adjustment. Specifically, Hamre and Pianta (2001) found that negative teacher-student relationships at Kindergarten significantly predicted academic (i.e., grades and standardized achievement scores) and behavior (i.e., work habits and disciplinary infractions) outcomes through fourth grade after controlling for gender, ethnicity, verbal IQ, and teacher-reported behavior problems. These predictions held through eighth grade indirectly with teacher-student relationships mediated by students' previous levels of performance on the academic and social outcomes.

Another longitudinal study showed that teacher-student relationships predicted school adjustment beyond children's aggressive risk status (Ladd & Burgess, 2001). Consistent with an additive model of development, teacher-child closeness predicted high cooperative participation and school liking. Moreover, teacher-child conflict contributed to higher attention problems and behavioral misconduct. It is therefore evident that aspects of teacher-child relationships are important predictors of psychological and school adjustment.

Competence for children with Externalizing versus Internalizing Problems

A cross-sectional study of internalizing-externalizing profile comparisons showed differences in competence scores for 6- to 11-year-old clinically-referred boys (McConaughy, Achenbach, & Gent, 1988). Boys with internalizing profiles derived from the parent reports on the Child Behavior Checklist (CBCL) had higher scores on Total Competence, as well as Activities, and Social scores than boys with externalizing profiles. However, they had no differences on the School scale. Similarly, teacher ratings (TRF) showed that boys with internalizing profiles had higher scores on total adaptive functioning, as well as on working hard, behaving appropriately, learning, and happiness. No differences were found on the school performance scale. Observational scores showed that boys with internalizing profiles had higher on-task scores than boys with externalizing profiles. Cognitive assessment indicated that boys with internalizing profiles had higher Full Scale IQ on the WISC-R compared to boys with externalizing profiles. Consistent with the parent and teacher ratings, there were no significant differences on Total Achievement scores on the PIAT achievement test between the two profile groups. However, boys with internalizing profiles reported more negative statements about their real self and had a greater disparity between their ideal and real self. Overall, children with internalizing profiles had better cognitive, social, and total adaptive functioning than children with externalizing profiles.

Another cross-sectional study of both competence and externalizing-internalizing problems of a 6- to 12-year-old clinically-referred sample found that parents who rated their child high on internalizing problems, they also rated them low on *social competence* while parents who rated their child high on externalizing problems, they rated them low

on both *social* and *school competence* as measured by the Achenbach Child Behavior Checklist (Cohen et al., 1988). Teachers rated high parent-reported externalizing students as low on *academic performance, peer sociability*, rule compliance, and frustration tolerance, while they rated high parent-reported internalizing students as low on *peer sociability* only. Moreover, using a measure of profile similarity, the authors compared their three competence groups (i.e., high, mixed, low competence) to Achenbach and Edelbrock's clinical standardization sample and they found that within their high competence group, children were classified as having internalizing (81%) rather than externalizing problems and within the low competence group, they were classified as having externalizing problems (67%). There was a similar percentage of externalizers and internalizers in the mixed competence group. This finding is consistent with other studies of clinically and nonclinically referred children with internalizing problems who have higher rated and observed competence (i.e., social and academic) than children with externalizing problems.

Research Questions

The goal of this study was to explore the empirical links between competence and externalizing and internalizing problems using structural equation modeling (see Figure 1 for conceptual model). Specifically, one of the original research goals was to use confirmatory factor analysis to estimate the convergent and discriminant factor validity of the constructs involved in the study (i.e., academic and social competence). However, the correlations between the indicators of the latent variables were small and nonsignificant, which led to the decision to use path analysis to examine three different models, one with

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the self-reported measures of competence, one with the teacher-reported indicators of competence, and an academic competence model (see Figures 2-4).

Therefore, this study examined the following research questions and hypotheses:

1. Do Time 1 constructs predict Time 2 constructs after controlling for Time 1 constructs? Specifically:

    a. Does teacher-rated and self-rated social and academic competence at Time 1 predict teacher-rated externalizing and internalizing problems at Time 2 after controlling for Time 1 externalizing and internalizing problems? Specific hypotheses were:

        i. Social competence will be a stronger predictor of internalizing problems than will academic competence.

        ii. Both social and academic competence will predict externalizing problems.

    b. Do teacher-rated externalizing and internalizing problems at Time 1 predict teacher-rated and self-rated social and academic competence at Time 2 after controlling for Time 1 social and academic competence? Specific hypotheses were:

        i. Internalizing problems will predict social competence more strongly than academic competence.

        ii. Externalizing problems will predict both social and academic competence.

        iii. Externalizing problems will predict social and academic competence more strongly than internalizing problems.

2. Do constructs show stability from Time 1 to Time 2?

    a. Teacher-rated Externalizing Problems at Time 1will strongly predict Externalizing Problems at Time 2.

    b. Similarly, teacher-rated Internalizing Problems at Time 1 will moderately predict Externalizing Problems at Time 2.

    c. Teacher-rated and self-rated Academic Competence will show consistency from Time 1 to Time 2.

    d. Similarly, teacher-rated and self-rated Social Competence will show consistency from Time 1 to Time 2.

3. The relation between teacher-rated Internalizing and Externalizing Problems was explored.

    a. Do Externalizing Problems at Time 1 predict Internalizing Problems at Time 2?

    b. Do Internalizing Problems at Time 1 predict Externalizing Problems at Time 2?

4. Finally, do child characteristics, such as gender, race, and grade level moderate the relations in the models?

Addition to the Original Hypotheses

5. The relations between Teacher-Student Relationships and the rest of the variables in the model were explored.

a. It was hypothesized that Teacher-Student Relationships will predict Externalizing and Internalizing Problems as well as Social and Study Skills both concurrently and longitudinally.

CHAPTER 3

METHOD

Participants

Children. Participants in the current study were 442 first to fifth grade students (ages 7-12 years, girls=234). At Year 1 Fall, the sample consisted of 24% first graders, 24% second graders, 25% third graders, and 27% fourth graders, and was proportionately representative of the four participating schools. At Year 2 Spring, the sample consisted of 24% second graders, 24% third graders, and 25% fourth graders, and 27% fifth graders. The participating school district has a large population of at-risk students, with 72% of the student body participating in the free or reduced cost lunch program and a large percentage of each school coming from public housing units. The district has a 47% on time graduation rate from high school. Similar to the school population, 57% (n=252) of the students in this sample were African-American, 31% (n=136) Caucasian, 7% (n=29) Hispanic, 3% (n=12) Asian/Pacific Islander and 2% (n=8) multi-racial. Poverty and race are confounded in this district with more African-American students eligible for the free or reduced cost lunch program than students from other racial groups.

Teachers. A total of 45 teachers in the schools participated in the study for at least one year. The sample was 96% female, 84% Caucasian, and 14% African-American. The teachers were experienced in terms of number of years teaching, with over half of the sample having taught for 6 years or more and only 4% in their first year of teaching. Sixty percent had graduate degrees. The teachers were similar between the four participating elementary schools with respect to demographic composition, educational level, and experience.

Procedure

All children in regular education, first through fifth grade classrooms were recruited for participation. Permission forms in students' native language were obtained for almost 90% of the school's population. Teacher participants provided signed informed consent and received a small stipend for their participation. Teachers completed behavior-rating scales for each of their participating students twice: in mid fall of the school year and in late spring of the following school year for three years. In this study, two waves of data were used: Year 1 Fall and Year 2 Spring. Students completed self-report measures at the same periods as the teacher ratings. The measures were displayed on an overhead projector and read aloud to control for reading differences among the students. The order of the measures was counterbalanced between classrooms to control for order effects. Data from student records were also collected at the end of the school year.

Measures

Externalizing Problems and Internalizing Problems. Teachers completed a standardized behavior rating scale, the Behavior Assessment System for Children Teacher Rating Scales for Children (BASC TRS-C) (Reynolds & Kamphaus, 1998). Teachers reported the frequency of children's problem and adaptive behaviors by responding to 148 items on a 4-point scale. In this study, the *Externalizing Problems Composite*, which includes the Hyperactivity scale, Aggression scale, and Conduct problems scale and the *Internalizing Problems Composite*, which includes the Depression

scale, the Anxiety scale, and the Somatization scale were used to measure students'

externalizing and internalizing problems. Both scales have appropriate reliability

(Externalizing Problems Composite: Internal Consistency reliability=.94, Test-retest

reliability=.91, Interrater reliability=.79 and Internalizing Problems Composite: Internal

Consistency reliability=.90, Test-retest reliability=.81, Interrater reliability=.69) and

validity.

Social Competence. The Social Skills scale of the BASC TRS-C was used to

assess teacher-rated social skills. The scale has an internal consistency of 0.92, a test-

retest reliability of 0.94, and an interrater reliability of 0.70. Sample items for this

subscale include: "offers to help other children", "tries to bring out the best in other

people", "politely asks for help", "encourages others to do their best". The BASC Social

Skills scale and the Social Skills Rating System (SSRS) (Gresham & Elliott, 1990)

moderately overlap (Reynolds & Kamphaus, 2002).

The Peer Support scale combining two subscales from the Classroom Life

Inventory (Johnson, Johnson, & Anderson, 1983) was used to assess students'

perceptions of support from their peers. The *Student Academic subscale*, which measures

academic support from peers and the *Student Personal subscale*, which measures caring

and interpersonal support from peers will be used to create the Peer Support scale. Each

of these subscales contains 4 items that use a 5 point Likert-type scale. The Cronbach

alpha reliabilities for student academic and personal support are .67 and .78 respectively.

Sample items include: "In this class other students like to help me learn", "want me to do

my best schoolwork" and "In this class other students like me the way I am", "care about

my feelings" for the peer academic and peer personal support subscales respectively.

Academic Competence. The modified Scholastic Competence subscale of the Self-Perception measure (Harter, 1985b) was used as an indicator of self-reported academic competence. The subscale includes 6 items of academic self-concept and asks students to rate themselves in a 1-4 Likert-type format. The Internal Consistency Reliability of the original measure is acceptable (Cronbach's α=.82). Sample items include: "I am very good at my schoolwork", "I often forget what I learn", and "I am smart enough to do my schoolwork".

The Study Skills scale of the BASC TRS-C was used as an indicator of teacher rated academic competence. The scale has an internal consistency reliability of 0.93, a test-retest reliability of 0.94, and an interrater reliability of 0.88. Sample items for this subscale include: "reads assigned chapters", "completes homework", "asks to make up missed assignments", and "works hard even in courses he or she does not like".

Teacher-Student Relationship Quality. Nine items from the Student-Teacher Relationship Scale (STRS, Pianta & Nimetz, 1991) were used as a measure of teacher-child relationship quality. The scale includes both close, warm relationship items and negative reactivity items, which were summed so that high scores represented positive relationship quality. In this study, the internal consistency reliability of the measure was .87. This brief measure was used to reduce the length of the teacher battery that was used in the larger study. Baker (2005) suggests that this short measure does not represent the three-factor structure of the original measure that was based on the attachment theory and thus, it should not be compared directly with studies using the full STRS (e.g., Hamre & Pianta, 2001). Instead, she suggests that it is conceptualized as a general measure of

relationship quality related to the concept *connectedness* as conceptualized by Ryan and Deci (2000).

Data Analysis

Multiple data analyses were used to explore the above hypotheses. Initially, descriptive analysis was conducted to examine the data regarding entry errors, patterns of missing data, univariate and multivariate outliers, multicollinearity, and evidence for univariate (i.e., skewness and kurtosis) and multivariate normality.

To explore the longitudinal paths between competence and psychopathology, a structural equation modeling (SEM) using the AMOS 5 program (Arbuckle, 1997) was used. SEM allows a researcher to specify apriori the relationships among the variables of interest and examine direct and indirect effects among many different variables (both exogenous and endogenous). Thus, it is a powerful technique that allows exploration of the direction of the effects of a variety of variables together. Specifically, a path analysis was used since the original hybrid model was abandoned for the reasons mentioned before.

Theoretical identification of the model was necessary before proceeding with the analysis. In Models 1-4, the number of observations exceeded the number of free parameters (e.g., in Model 1: $v(v+1)/2=8*9/2=36$, where v is the number of observed variables, so number of observations (36)>number of parameters (31). Therefore, the models were theoretically identified.

Several indices were used to assess the fit of the model based on Kline's (1998) recommendations. These indices include the generalized likelihood ratio (χ^2), the generalized likelihood ratio adjusted (χ^2/df), Goodness of Fit Index (GFI), Comparative Fit

Index (CFI), Normed Fit Index (NFI), and Root Mean Squared Error of Approximation (RMSEA). These six indices assess different aspects of model fit and have different criteria for deciding when a model is considered to have good fit. In addition to the fit indices, I inspected the *correlation residuals* (i.e., differences between observed and model-implied correlations). Absolute values of correlation residuals less than .10 were desirable (Kline, 1998).

Finally, with a sample size of 442, there was sufficient power to stably estimate a structural equation model (Chou & Bentler, 1995).

Missing Data Estimation

The current sample was drawn from a sample of 1,131 first through fifth grade students from four elementary schools in a small city in the Southeast who participated in a three-year cross-sequential longitudinal study. Each year, approximately 600 students from first to fifth grade were targeted. From these 600 students, approximately 450 students were followed from Year 1 Fall to Year 2 Spring. However, only 192 had complete data on all the variables in this study for both waves of data. Therefore, a missing data estimation procedure using SYSTAT 10 Expectation Maximization (EM) method was applied to estimate missing data. The EM method is a full information method of imputing missing data by iterating through the existing data and fitting the best values to the existing covariance structure (Taris, 2000). This method of handling missing values produces less bias in the results than deleting cases or using the sample mean for imputation (Rovine & Delaney, 1990; Taris, 2000).

In order to estimate missing values, one must be able to assert that data were missing at random (MAR), which means that for any single variable, the pattern of missing values did not rely on the subject's true status on that variable (Kline, 1998). In this study, I checked whether the data were missing at random or systematically by creating dichotomous variables coded as missing-not missing for each variable in the models. Then, these variables were correlated with all the variables in the study. Small correlations indicated that the data were not missing systematically.

For the estimation, the data for the 6 main variables of this study (Externalizing Problems, Internalizing Problems, Social Skills, Study Skills, Peer Personal Support, Scholastic Competence) and the 3 demographic variables (child sex, grade level, and ethnicity) were imputed together using 3 waves of data (i.e., Year 4, Year 5 Fall, and Year 5 Spring). Only students who missed one wave of data (from 300 to 440 students depending on the variable) were used so that the estimation would be based on information from at least two waves of data. The estimated sample consisted of 442 students from grades 1 to 5. The estimation of this data was based on Little MCAR test statistic of 695.11 (df=683, p= 0.365), indicating that the data were missing completely at random. No major changes existed in the means and standard deviations of the estimated variables compared to the original variables (see Tables 1 & 2).

Table 1.

Descriptive Statistics for Study Variables Pre-Imputation

Variables	N	Mean	St. Deviation
Externalizing Problems1	573	52.27	11.82
Internalizing Problems1	573	49.76	10.49
Social Skills1	573	50.22	11.02
Study Skills1	573	48.28	10.71
Peer Support1	533	4.79	2.1
Scholastic Competence1	537	6.43	1.7
Teacher-Student Rel. 1	573	37.98	7.03
Externalizing Problems2	441	52.73	12.41
Internalizing Problems2	441	49.46	10.65
Social Skills2	441	50.24	11.88
Study Skills2	441	47.7	10.63
Peer Support2	479	4.49	2.12
Scholastic Competence2	476	6.44	1.55
Teacher-Student Rel. 2	430	37.1	7.46

Table 2.

Descriptive Statistics for Study Variables Post-Imputation (N=442)

| Variables	Mean	SD	Skew	Kurtosis	Median	Range
Externalizing Problems1	51.96	11.19	1.2	1.06	49	40-95
Internalizing Problems1	49.36	10.02	2.0	5.4	47	39-101
Social Skills1	51.45	10.51	-.02	-.46	51	26-77
Study Skills1	49.46	10.27	.02	-.70	49	26-73
Peer Support1	4.93	1.91	-.43	.04	5	0-8
Scholastic Competence1	6.61	1.32	-1.15	1.4	7	1-8
Teacher-Student Rel. 1	38.51	6.4	-1.13	.74	41	14-45
Externalizing Problems2	52.45	12.37	1.4	2.1	48	37-105
Internalizing Problems2	49.1	10.15	1.28	1.46	46	37-95
Social Skills2	50.69	11.7	.07	-.88	50	26-77
Study Skills2	48.36	10.79	.05	-1.07	48	26-73
Peer Support2	4.49	2.03	-.10	-.37	4	0-8
Scholastic Competence2	6.44	1.49	-.53	-.95	7	2-8
Teacher-Student Rel. 2	37.61	7.23	-1.01	.54	40	10-45

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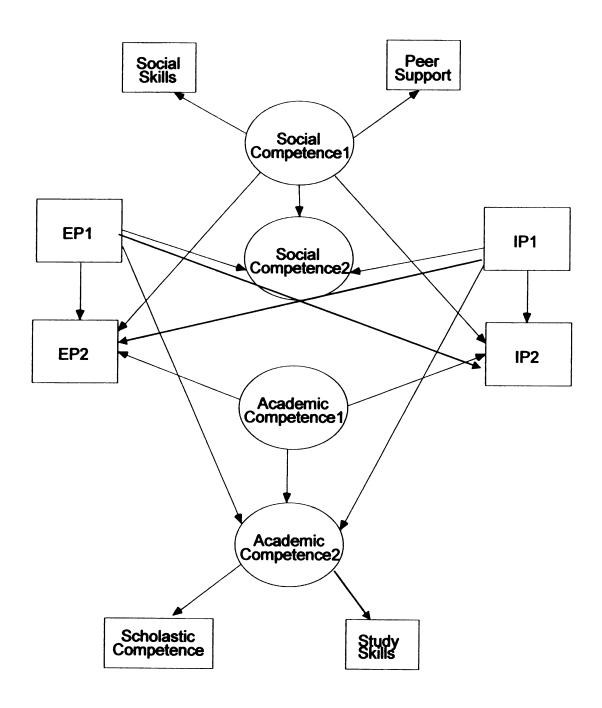
Figure 1. Conceptual Model
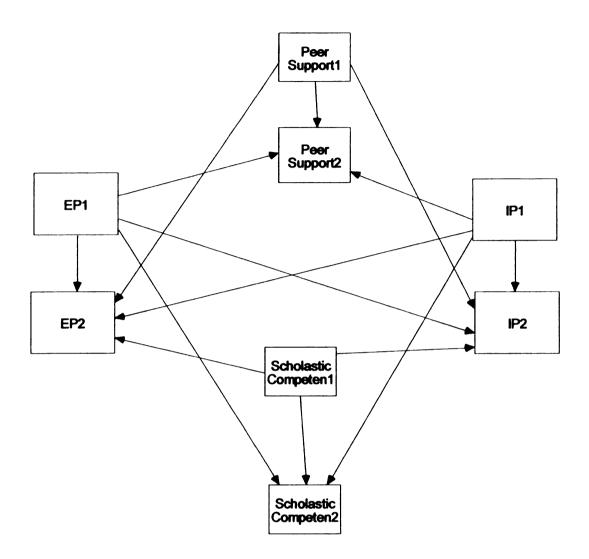
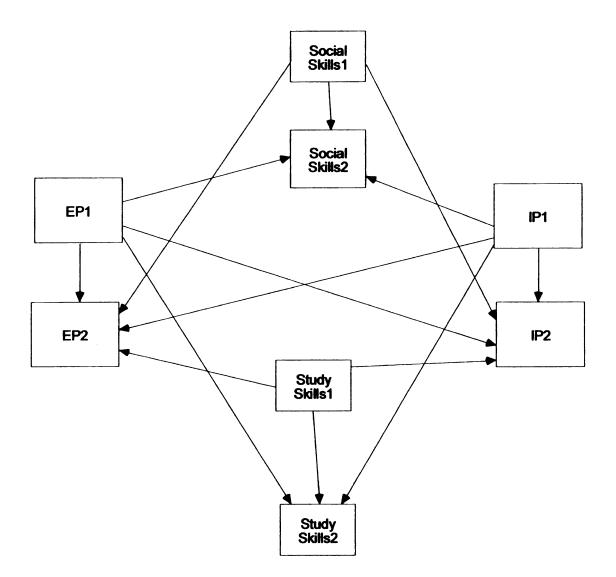*Figure 2.* Conceptual Model for Self-Perceived Competence

Figure 3. Conceptual Model for Teacher-Reported Competence

CHAPTER 4

RESULTS

Data Screening and Descriptive Analyses

Table 3 displays the correlations among all the variables in the models, as well as their means and standard deviations. Correlations ranged from a low of .01 to a high of .79. The self-report measures of peer support and scholastic competence had the lowest correlations with the other variables in the models and they were nonsignificant most of the times.

Visual inspection of the data and tests of univariate normality suggested no significant violations of assumptions. Skewness ranged from -1.13 to +1.98 and kurtosis ranged from -1.06 to +2.04 with the exception of Internalizing Problems 1, which was +5.33 (see Table 2 for skewness and kurtosis values). No problems with multicollinearity were detected. Tests for multivariate outliers via calculation of Mahalanobis distances revealed many observations that were falling far ($p<.05$) from the centroid assuming a multivariate normal distribution. Inspection of the raw data for these cases indicated no errors in data entry. Given that the sample comes from a low income at-risk population, these cases were judged to represent real variability in the sample and thus, they were retained for the analyses.

In the following section, four models are presented. Model 1 examines the relations between self-reported competence and externalizing/internalizing problems. Model 2 examines the relations between teacher-reported competence and externalizing/internalizing problems. Model 3 explores the relations between teacher-reported study skills and self-reported scholastic competence and

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externalizing/internalizing problems. Finally, in Model 4, a new variable, that of teacher-student relationship is entered and the relation among this variable and the rest of the variables in the model is explored.

Model 1: Self-Reported Competence

Model 1 tested the relations between teacher-reported externalizing and internalizing problems and self-reported competence (i.e., peer support and scholastic competence) (see Figure 4 for Model 1). The original model did not fit the data until correlations between the errors were added (see Table 4 for Fit Indices). The correlations between the errors indicate same rater bias. The same teacher rated both Externalizing and Internalizing Problems at Time 2. Similarly, the same student reported both peer support and scholastic competence. The error correlation between Internalizing Problems and Scholastic Competence indicates that there are common omitted causal variables from the model. The model with the added error correlations fit the data well as indicated by large GFI, NFI, CFI, small RMSEA, and small residuals (see Table 4).

Table 3.

Correlations of the Variables Included in the Models (N=442)

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Externalizing Problems1	1													
2. Internalizing Problems1	.44**	1												
3. Social Skills1	-.63**	-.32**	1											
4. Study Skills1	-.67**	-.41**	.79**	1										
5. Peer Support1	.07	.18**	.06	-.02	1									
6. Scholastic Compet1	-.07	.09	.08	.13**	.19**	1								
7. Externalizing Problems2	.68**	.24**	-.43**	-.52**	-.01	-.05	1							
8. Internalizing Problems2	.32**	.44**	-.25**	-.36**	.07	-.01	.54**	1						
9. Social Skills2	-.38**	-.11*	.54**	.50**	.13**	.05	-.50**	-.27**	1					
10. Study Skills2	-.47**	-.24**	.53**	.73**	-.01	.15**	-.57**	-.40**	.73**	1				
11. Peer Support2	.01	.13**	.10*	-.02	.45**	.08	.01	.04	.23**	.06	1			
12. Scholastic Compet2	-.14**	.06	.15**	.18**	.06	.33**	-.12*	-.14**	.19**	.30**	.22**	1		
13. Teacher-Student Relationships 1	-.69**	-.39**	.65**	.64**	.01	.08	-.49**	-.26**	.40**	.43**	.01	.10*	1	
14. Teacher-Student Relationships 2	-.50**	-.18**	.47**	.49**	.01	.02	-.67**	-.40**	.66**	.62**	.15**	.15**	.44**	1

**$p<.01$, *$p<.05$

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Table 4.
Goodness of Fit Summary for Model 1 (N=442)

Model	χ^2 (df)	χ^2/df	GFI	AGFI	NFI	CFI	RMSEA
Self Report	179.5* (8)	22.4	.92	.64	.79	.79	.22
Self Report w/ Error Correlations	2.5 (5)	.5	.99	.99	.99	1.00	.00

*p<.001

Several findings regarding the direction and strength of the path coefficients are noteworthy. The answer to the first research question: "Does social and academic competence at Time 1 predict externalizing and internalizing problems at Time 2 after controlling for Time 1 externalizing and internalizing problems?" is no. Self-reported peer support and scholastic competence in the Fall of Year 1 did not predict externalizing and internalizing problems in the Spring of Year 2 (see Figure 4 for path coefficients).

The answer to the second research question: "Do externalizing and internalizing problems at Time 1 predict social and academic competence at Time 2 after controlling for Time 1 social and academic competence?" is partly yes. Internalizing problems significantly predicted scholastic competence but not peer support. Similarly, Externalizing problems significantly predicted scholastic competence but not peer support. Externalizing problems did predict academic competence more strongly than internalizing problems did (see Figure 4).

The third research goal was to examine the consistency of all the constructs from Time 1 to Time 2. All hypotheses were supported. Externalizing Problems at Time 1 strongly predicted Externalizing Problems at Time 2. Similarly Internalizing Problems at Time 1 predicted Internalizing Problems at Time 2, although this relation was less strong

than that of the Externalizing Problems. It is noteworthy that Academic and Social Competence showed consistency from Time 1 to Time 2, as well (see Figure 4 for specific paths).

The last research goal was to explore the relation between Internalizing and Externalizing Problems. Externalizing Problems at Time 1 significantly predicted high Internalizing Problems at Time 2. However, the opposite was not true. Internalizing Problems at Time 1 did not predict Externalizing Problems at Time 2.
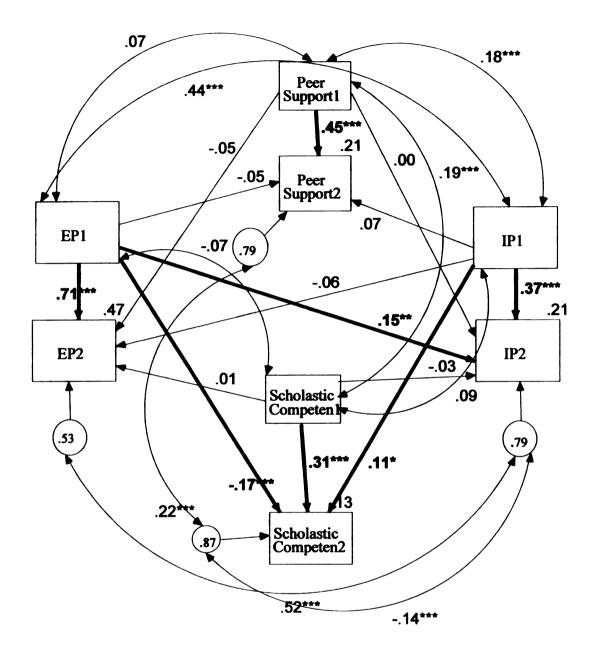
Figure 4. Standardized Path Coefficients and Unexplained Variance for Model 1: Self-Reported Competence with Error Correlations.

(*** $p<.001$, ** $p<.01$, *$p<.05$)

The second phase of the modeling analyses explored the generalizability of the model across different groups of students (i.e., gender, race, and grade level). First of all, I explored whether gender moderated the relations specified in the model. One path analysis was conducted using the two separate groups and having the paths unconstrained (see Table 5 for Fit Indices for the unconstrained model). Then, a second analysis was conducted after imposing cross-group equality constraints (see Table 5 for Fit Indices for the invariant model). The change in the overall chi-square ($\chi^2_{difference\ (14)}$= 19.353) was not statistically significant at p= .05, which means that the path coefficients as a set did not differ significantly between boys and girls. Therefore, the original model (i.e., Model 1) can be used for both boys and girls.

Table 5.
Goodness of Fit Summary for Multiple Group Analysis for Model 1 based on Gender
(Boys N=208, Girls N=234)

Model	χ^2	df	χ^2/df	GFI	AGFI	NFI	CFI	RMSEA
Invariant Model	25.98 (ns)	24	1.082	.986	.957	.971	.998	.014
Unconstrained Model	6.62 (ns)	10	.662	.996	.973	.993	1.00	.000
Difference btw the 2 models	19.353 (ns)	14						

ns=non significant at p= .05

Second, I explored whether race moderated the relations specified in the model. Similar analyses were conducted. In Table 6, the Fit Indices for both the unconstrained and constrained models are presented. The change in the overall chi-square ($\chi^2_{difference\ (14)}$= 24.47) was statistically significant at p= .05, which means that the path coefficients as a set differed significantly between African-American and White students. Therefore,

two separate models were further explored (see Figures 5 and 6). Fit coefficients for the

two different models are presented in Table 7.

Table 6.
Goodness of Fit Summary for Multiple Group Analysis for Model 1 based on Race (African-American N=252, White N=136)

Model	χ^2	df	χ^2/df	GFI	AGFI	NFI	CFI	RMSEA
Invariant Model	39.36*	24	1.64	.98	.93	.95	.98	.041
Unconstrained Model	14.89 (ns)	10	1.489	.99	.93	.98	.99	.036
Difference btw the 2 models	24.47*	14						

ns=non significant
*p= .05

Table 7.
Goodness of Fit Summary for Model 1 by Race (African-American N=252, White N=136)

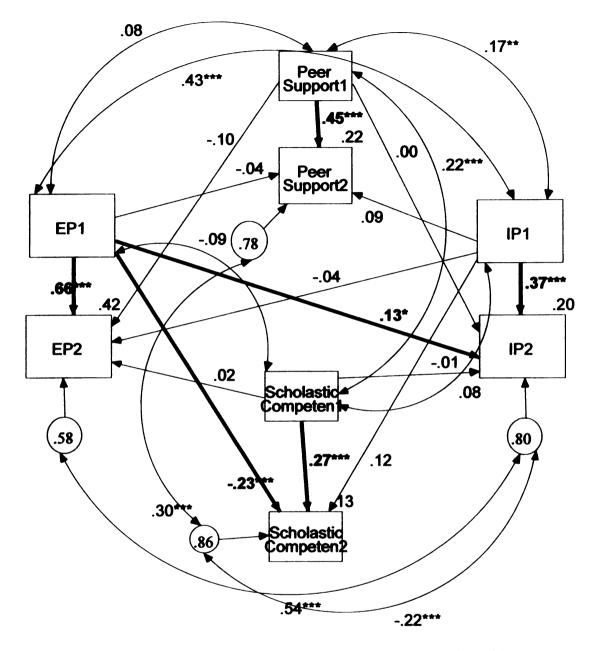| Model	χ^2	df	χ^2/df	GFI	AGFI	NFI	CFI	RMSEA
African-American	2.33 (ns)	5	.47	.998	.983	.995	1.00	.000
White	12.5*	5	2.5	.98	.84	.95	.97	.11

ns= non-significant
*p<.05

Figure 5 Standardized Path Coefficients and Unexplained Variance for African-American Students Model 1: Self-Reported Competence with Error Covariances. (*** $p<.001$, ** $p<.01$, *$p<.05$)
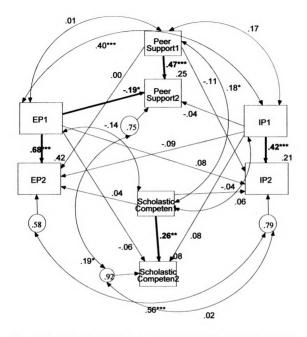
Figure 6. Standardized Path Coefficients and Unexplained Variance for White Students
Model 1: Self-Reported Competence with Error Correlations.
(*** *p*<.001, ** *p*<.01, **p*<.05)

Finally, I explored whether grade level moderated the relations specified in the model. Specifically, the sample was divided into two groups: a) 1st-2nd grade students at Time 1 were 2nd-3rd grade students at Time 2 and b) 3rd-4th grade students at Time 1 were 4th-5th grade students at Time 2. Analyses similar to gender and race were conducted for grade level. In Table 8, the Fit Indices for both the unconstrained and constrained models are presented. The change in the overall chi-square ($\chi^2_{difference (14)}$= 22.21) was not statistically significant at p= .05, which means that the path coefficients as a set did not differ significantly between early elementary and late elementary students. Therefore, the same model can be used for both groups (i.e., Model 1).

Table 8.
Goodness of Fit Summary for Multiple Group Analysis for Model 1 based on Grade Level (1-2 Grade at Time 1 N=211, 3-4 Grade at Time 1 N=231)

Model	χ^2(df)	df	χ^2/df	GFI	AGFI	NFI	CFI	RMSEA
Invariant Model	27.47 (ns)	24	1.14	.99	.95	.97	.996	.018
Unconstrained Model	5.26 (ns)	10	.53	.997	.98	.99	1.00	.000
Difference btw the 2 models	22.21 (ns)	14						

ns=non significant at p= .05

Model 2: Teacher-Reported Competence

Model 2 tested the relations between teacher-reported externalizing and internalizing problems and teacher-reported competence (i.e., social skills and study skills) (see Figure 4 for Model 2). Similarly with Model 1, correlated errors were allowed between pairs of measures that used the same method/rater. The model with the added error correlations fit the data adequately as indicated by the GFI, NFI, and CFI. However,

the other fit indices are not satisfactory: the χ^2 is significant, the χ^2/df is above 3, the

RMSEA is above .05 and the AGFI is marginal (see Table 9 for Fit Indices). The

correlation residuals are less than .10, which means that the fit of different parts of the

model is relatively good.

Table 9.
Goodness of Fit Summary for Model 2(N=442)

Model	χ^2 (df)	χ^2/df	GFI	AGFI	NFI	CFI	RMSEA
Teacher Report w/ Error Correlations	11.57* (2)	5.79	.99	.88	.995	.996	.104

*p<.01

Several findings regarding the direction and strength of the path coefficients are

noteworthy. The answer to the first research question: "Does social and academic

competence at Time 1 predict externalizing and internalizing problems at Time 2 after

controlling for Time 1 externalizing and internalizing problems?" is partly yes. Teacher-

reported study skills in the Fall of Year 1 predicted externalizing and internalizing

problems in the Spring of Year 2 (see Figure 4 for path coefficients).

The answer to the second research question: "Do externalizing and internalizing

problems at Time 1 predict social and academic competence at Time 2 after controlling

for Time 1 social and academic competence?" is partly yes. Internalizing problems

significantly predicted social skills but not study skills. Externalizing problems did not

predict any of the competence indicators (see Figure 4 for path coefficients).

The third research goal was to examine the consistency of all the constructs from

Time 1 to Time 2. All hypotheses were supported. Externalizing Problems at Time 1

strongly predicted Externalizing Problems at Time 2. Similarly Internalizing Problems at Time 1 predicted Internalizing Problems at Time 2, although this relation was less strong than that of the Externalizing Problems. It is noteworthy that Social and Study Skills showed strong consistency from Time 1 to Time 2, as well (see Figure 4 for specific paths). These findings are consistent with the Model 1 findings.

The last research goal was to explore the relation between Internalizing and Externalizing Problems. Externalizing Problems at Time 1 significantly predicted Internalizing Problems at Time 2. However, the opposite was not true. Internalizing Problems at Time 1 did not predict Externalizing Problems at Time 2. These findings are consistent with the Model 1 findings.
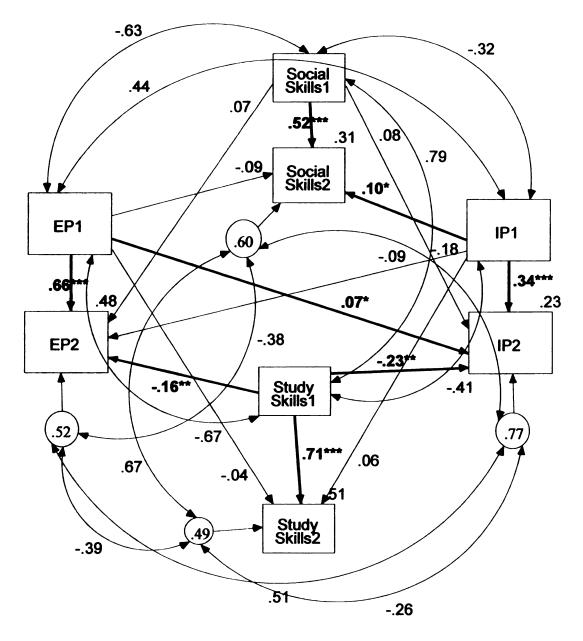
Figure 7. Standardized Path Coefficients and Unexplained Variance for Model 2:
Teacher-Reported Competence. (All correlation between the exogenous variables and the
errors were significant at *p*<.001)
(*** *p*<.001, ** *p*<.01, **p*<.05, Significant Paths are in bold)

Similarly with Model 1, the second phase of the modeling analyses explored the generalizability of the model across different groups of students (i.e., gender, race, and grade level). In Model 2, gender moderated the relations specified in the model, while race and grade level did not (see Table 10 for Fit Indices). Therefore, separate models were explored only for boys and girls (see Figures 5 & 6 for Models and Table 11 for Fit Indices). Several findings were noteworthy for boys. First of all, similarly to the total sample model, Study Skills at Time 1 continued to significantly predict Externalizing and Internalizing Problems at Time 2. In addition, Social Skills at Time 1 significantly predicted Externalizing and Internalizing Problems at Time 2. All variables showed strong consistency from Time 1 to Time 2. The model for girls differs from the boys' model and the total sample model in that only Externalizing Problems at Time 1 significantly predicted Social Skills at Time 2.

Table 10.
Goodness of Fit Summary for Multiple Group Analysis for Model 2 based on Gender (Boys N=208, Girls N=234)

Model	χ^2 (df)	df	χ^2/df	GFI	AGFI	NFI	CFI	RMSEA
Invariant Model	37.13**	18	2.063	.98	.92	.98	.99	.049
Unconstrained Model	13.33**	4	3.33	.99	.87	.99	.996	.073
Difference btw the 2 models	23.80*	14						

(*** $p<.001$, ** $p<.01$, *$p<.05$)

Table 11.
Goodness of Fit Summary for Model 2 by Gender (Boys N=208, Girls N=234)

Model	χ^2 (df)	df	χ^2/df	GFI	AGFI	NFI	CFI	RMSEA
Boys	6.79*	2	3.4	.99	.86	.99	.995	.11
Girls	6.5*	2	3.27	.99	.88	.99	.996	.1

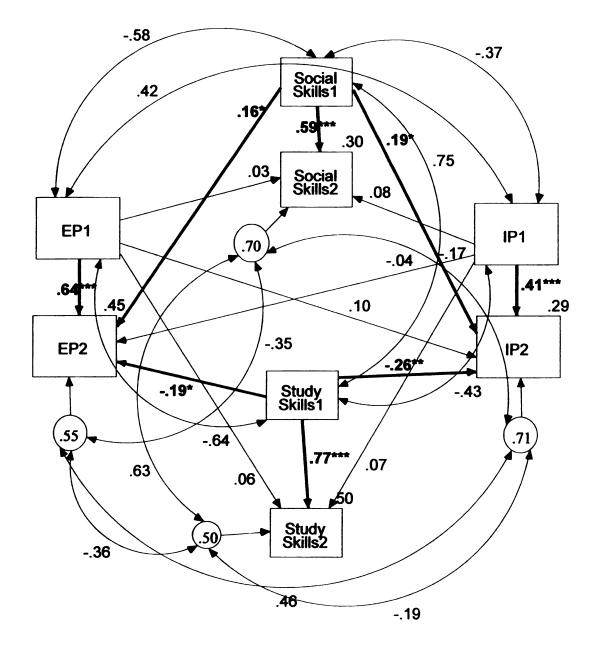*Figure 8.* Standardized Path Coefficients and Unexplained Variance for Boys Model 2:

Teacher-Reported Competence.

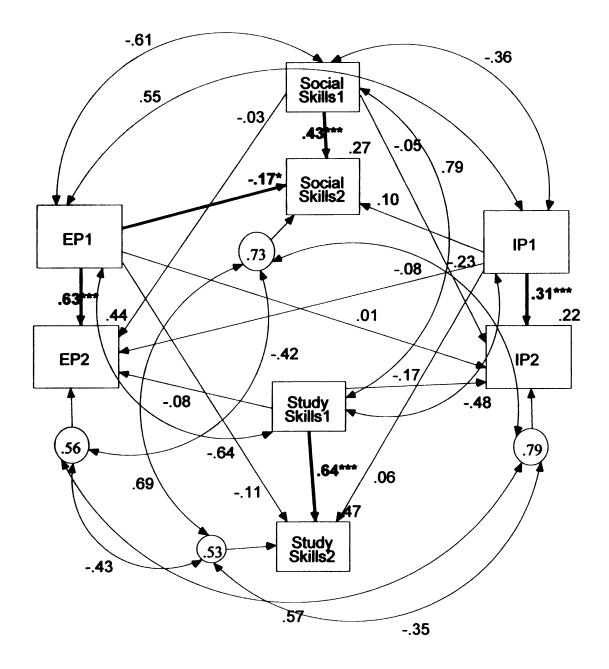(*** *p*<.001, ** *p*<.01, *p*<.05, Significant Paths are in bold.)

Figure 9. Standardized Path Coefficients and Unexplained Variance for Girls Model 2:

Teacher-Reported Competence.

(*** *p*<.001, ** *p*<.01, **p*<.05, Significant Paths are in bold.)

Model 3: Academic Competence Model (Teacher-Reported Study Skills & Self-Reported

Scholastic Competence)

Model 3 tested the relations between teacher-reported externalizing and

internalizing problems, teacher-reported study skills and self-reported scholastic

competence (see Figure 7 for Model 3). Similarly with the previous models, correlated

errors were allowed between pairs of measures that used the same method/rater. The

model with the added error correlations fit the data adequately as indicated by the fit

indices in Table 12.

Table 12.
Goodness of Fit Summary for Model 3 (N=442)

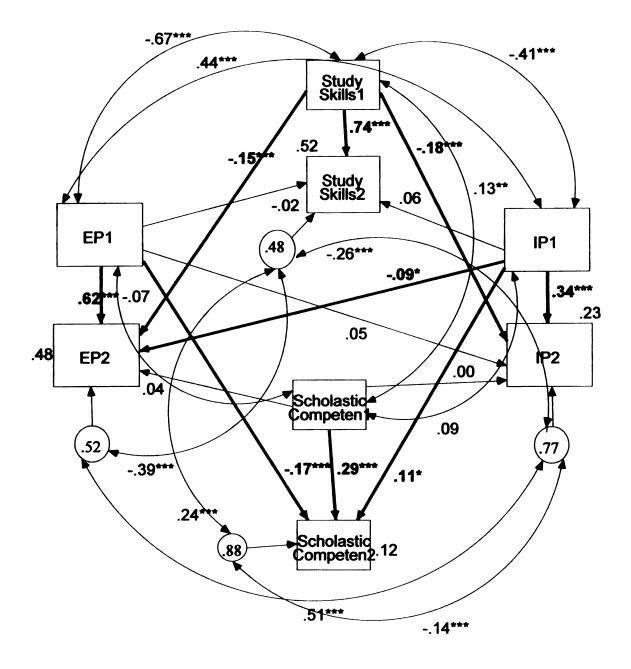| Model	χ^2 (df)	χ^2/df	GFI	AGFI	NFI	CFI	RMSEA
Academic Competence Model	7.18 (3) (ns)	2.39	.996	.95	.995	.997	.056

ns= non-significant

Figure 10. Standardized Path Coefficients and Unexplained Variance for Model 3:

Academic Competence.

*** *p*<.001, ** *p*<.01, *p<.05 (Significant Paths are in bold.)

Several findings regarding the direction and strength of the path coefficients are important in this model. Study Skills at Time 1 significantly predicted both Externalizing and Internalizing Problems at Time 2 while Externalizing and Internalizing Problems at Time 1 predicted self-perceived Scholastic Competence at Time 2.

A finding that was consistent in all three models involved the consistency of the constructs from Time 1 to Time 2. Again, Externalizing Problems at Time 1 strongly predicted Externalizing Problems at Time 2. Similarly Internalizing Problems and Scholastic Competence at Time 1 predicted Internalizing Problems and Scholastic Competence at Time 2 respectively, although these relations were less strong than that of the Externalizing Problems and Study Skills. It is noteworthy that Study Skills showed strong consistency from Time 1 to Time 2 (see Figure 7 for the specific paths).

Finally, the relation between Internalizing and Externalizing Problems was reversed in this model compared to the previous models. Internalizing Problems at Time 1 significantly predicted Externalizing Problems at Time 2.

Again, the second phase of the modeling analyses explored the generalizability of the model across different groups of students (i.e., gender, race, and grade level). In this model, similarly to Model 2, gender moderated the specified relations, while race and grade level did not (see Table 13 for Fit Indices). Therefore, separate models were explored only for boys and girls (see Figures 8 & 9 for Models and Table 14 for Fit Indices). Several pathways were important for boys. First of all, similarly to the total sample model 3 and to the model 2, Study Skills at Time 1 significantly predicted Externalizing Problems at Time 2. Consistently with previous models, all variables showed strong consistency from Time 1 to Time 2. In the model for girls, study skills

negatively predicted Internalizing Problems at Time 2 while Time 1 Externalizing

Problems negatively predicted Scholastic Competence at Time 2. An interesting finding

was that Internalizing Problems at Time 1 positively predicted Scholastic Competence at

Time 2. Similarly to all previous models, all variables showed strong consistency from

Time 1 to Time 2.

Table 13.
*Goodness of Fit Summary for Multiple Group Analysis for Model 3 based on Gender
(Boys N=208, Girls N=234)*

Model	χ^2 (df)	df	χ^2/df	GFI	AGFI	NFI	CFI	RMSEA
Invariant Model	39.47**	20	1.97	.98	.92	.97	.99	.047
Unconstrained Model	14.72*	6	2.45	.99	.90	.99	.99	.033
Difference btw the 2 models	24.75*	14						

(*** $p<.001$, ** $p<.01$, *$p<.05$)

Table 14.
Goodness of Fit Summary for Model 3 by Gender (Boys N=208, Girls N=234)

Model	χ^2 (df)	df	χ^2/df	GFI	AGFI	NFI	CFI	RMSEA
Boys	9.4*	3	3.13	.99	.87	.99	.99	.102
Girls	5.32 (ns)	3	1.77	.99	.93	.99	.997	.058

ns= non-significant
*** $p<.001$, ** $p<.01$, *$p<.05$
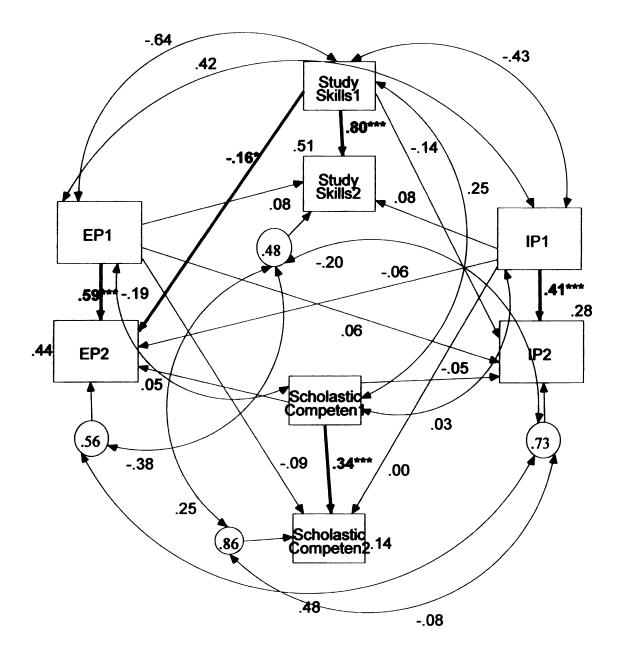
Figure 11. Standardized Path Coefficients and Unexplained Variance for Boys Model 3:

Academic Competence.

*** $p<.001$, ** $p<.01$, *$p<.05$ (Significant Paths are in bold.)
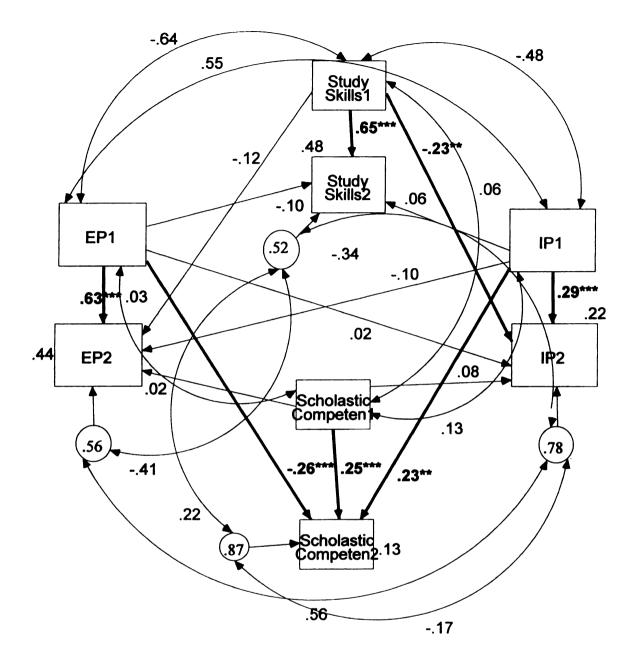
Figure 12. Standardized Path Coefficients and Unexplained Variance for Girls Model 3:

Academic Competence.

*** p<.001, ** p<.01, *p<.05 (Significant Paths are in bold.)

Model 4: Teacher-Student Relationship Model

In Model 4, teacher-student relationships were added as a positive indicator of school adjustment and competence (see Figure 13 for Model 4). Similarly with the previous models, correlated errors were allowed between pairs of measures that used the same method/rater. The model with the added error correlations fit the data adequately as indicated by the fit indices in Table 15. There are several important findings in this model. Student-Teacher Relationships strongly predicted low Externalizing and Internalizing Problems, as well as high Social and Study Skills concurrently at both Time 1 and 2. More importantly, positive teacher-student relationships at Time 1 significantly predicted high social and study skills and low externalizing and internalizing problems at Time 2 through the mediating effects of prior levels of social and study skills and low externalizing and internalizing problems respectively (see Table 16 for Indirect Effects).

Moreover, Externalizing Problems at Time 1 directly predicted low Teacher-Student Relationships at Time 2 and Social and Study Skills at Time 1 predicted positive Teacher-Student Relationships at Time 2. Similarly with previous models, Externalizing Problems at Time 1 indirectly predicted low study and social skills through the mediating effects of prior levels of social and study skills. Internalizing problems at Time 1 indirectly predicted low study skills through the mediating effects of prior levels of study skills. However, Internalizing problems at Time 1 directly predicted high social skills at Time 2. Finally, consistently with all previous models, all variables showed consistency from Time 1 to Time 2 with one exception. Teacher-Student Relationship at Time 1 did not predict Teacher-Student Relationship at Time 2.

Table 15.

Goodness of Fit Summary for Model 4-Teacher-Student Relationships (N=442)

Model	χ^2 (df)	χ^2/df	GFI	AGFI	NFI	CFI	RMSEA
Teacher-Student Rel Model	14.14 (13) (ns)	1.09	.99	.97	.995	1.00	.014

ns=non-significant

Table 16.

Indirect Effects of Teacher-Student Relationships

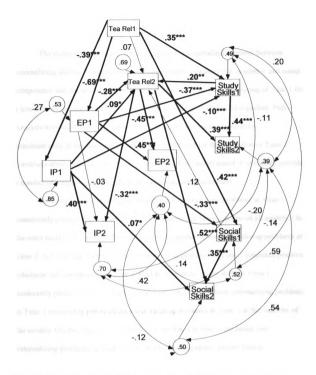| Predictor	Outcomes			
	Externalizing Problems 2	Internalizing Problems 2	Social Skills2	Study Skills2
Teacher-Student R 1	-.31***	-.16***	.15**	.15***
Externalizing Problems1	-	-	-.12***	-.16***
Internalizing Problems1	-	-	.03*	-.04**

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

Figure 13. Standardized Path Coefficients and Unexplained Variance for Teacher-Student Relationship Model 4. (All correlations between exogenous and errors were significant at least at *p*<.01).

*** *p*<.001, ** *p*<.01, **p*<.05 (Significant Paths are in bold.)

CHAPTER 5

DISCUSSION

The purpose of this study was to evaluate the longitudinal relations between externalizing-internalizing problems and competence indicators (i.e. academic and social competence and teacher-student relationships) from Fall of Year 1 to Spring of Year 2 for a low-income, predominantly African-American sample of first to fifth graders. Path Analysis allowed for the exploration of the relations among these variables simultaneously in the same model. Moreover, it allowed for the prediction of Time 2 constructs after controlling for Time 1 constructs. The models tested in this study provide a number of insights regarding the relations among these constructs.

Five major sets of findings emerged. First, externalizing problems at Time 1 consistently predicted low scholastic self-competence at Time 2 in almost all models. On the other hand, study skills at Time 1 moderately predicted low externalizing problems at Time 2. A surprising finding was that internalizing problems at Time 1 predicted positive scholastic self-competence at Time 2. On the other hand, study skills at Time 1 moderately predicted low internalizing problems at Time 2. Third, externalizing problems at Time 1 moderately predicted high internalizing problems at Time 2 in the majority of the models. On the other hand, internalizing problems at Time 1 predicted low externalizing problems at Time 2 in the academic competence model. Fourth, competence indicators (i.e., social skills, study skills, peer support, and scholastic competence) and externalizing-internalizing problems showed strong continuity from Time 1 to Time 2. Finally, important findings emerged from the follow-up model of teacher-student relationships. It was found that positive teacher-student relationships

significantly predicted high social and study skills and low externalizing and internalizing problems almost two years later through the mediating effects of prior levels of social and study skills and externalizing and internalizing problems respectively. Moreover, externalizing problems directly predicted lower teacher-student relationships while study skills predicted positive teacher-student relationships 18 months later. Each of these findings is elaborated below.

Externalizing Problems and Competence (Models 1-3)

One of the goals of this study was to clarify the relation between externalizing problems and competence indicators, such as academic and social competence. Several significant findings are worth our attention. First, it was found that earlier externalizing problems consistently predicted *low scholastic self-competence* across all models. It seems that externalizing problems influence the perception that a child has about his or her academic competence. Students with behavior problems often receive little positive reinforcement, are more frequently punished and have conflictual relationships with their teachers, which affect the way they view themselves. It is also possible that externalizing problems interfere with academic achievement and thus, children are actually less competent academically (Hinshaw, 1992). On the other hand, low scholastic competence did not predict later externalizing problems. Perceiving oneself as low in scholastic competence does not lead a child to exhibit behavior problems.

It is interesting that externalizing problems did not predict later study skills while high *study skills* predicted low externalizing problems 18 months later. This finding suggests that being a student with good academic skills protects against the development

of behavior problems at school. Previous studies have found that good academic skills reduce the risk of disorder (Rae-Grant, Thomas, Offord, & Boyle, 1989). Stanger and colleagues (1993) found that high academic competence predicted lower school behavior problems and mental health services as reported by parents three years later. Similarly, Thorpe and colleagues (2000, August) found that study skills significantly predicted lower behavior problems for girls two years later.

Externalizing problems predicted lower peer support for white students and lower social skills for girls only. However, they were not related to social skills and peer support for the sample as a whole. Previous studies have been unable to find significant effects of externalizing problems on social competence. For instance, a longitudinal study found that prosocial behavior as rated by self, peers, and teachers predicted peer social preference (i.e., peers selection of whom they like to play or study with) and academic achievement 5 years later while aggression did not (Caprara, Barbaranelli, Pastorelli, Bandura, & Zimbardo, 2000). It might be that externalizing problems influence social competence through the mediating effects of prior levels of externalizing problems. Future studies should explore the indirect effects of externalizing problems on social competence. On the other hand, peer support was not a direct predictor of externalizing problems 18 months later. Previous studies have found that social skills and peer support had little predictive significance for either externalizing or internalizing problems (e.g., Hetherington, Cox, & Cox, 1985; Hirsch & DuBois, 1992).

Differences in the results of social competence in this study compared to previous studies might be due to the different indicators of social competence that were explored in this study (i.e., social skills and self-perceived social support). There is growing

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evidence that friendships and peer relationships have positive effects on students' well being (e.g., Ladd & Troop-Gordon, 2003; Parker, Rubin, Price, & DeRosier, 1995). It would be recommended that future studies examine the relational characteristics of peer friendships and their interaction with students' social skills. It might be that social skills have an indirect positive effect through peer relationships on adjustment. Researchers should also be careful of not considering a set of social skills as equivalent of the multidimensional construct of social competence(Rose-Krasnor, 1997). It might be that some indicators of social competence (e.g., peer close relationships) are more important than others (e.g., specific social skills) for predicting children's adjustment.

Internalizing Problems and Competence (Models 1-3)

Contrary to externalizing problems which predicted low scholastic self-competence, internalizing problems consistently predicted *high* levels of scholastic self-competence. Although this finding seems counterintuitive at first, it might mean that students who tend to internalize their symptoms, actually do well academically, and thus, have a positive perception of their scholastic competence. High objective academic competence may therefore be a third factor in the relation between internalizing problems and self-perception of scholastic competence. It might also be that students who have internalizing tendencies are error prone in their self-appraisals and they wrongly perceive themselves as doing well scholastically. Future research should explore these possibilities. Similarly, internalizing problems predicted *high* social skills. Students who have the tendency to internalize their problems may also be perceived by their teachers as

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cooperative, polite, and helpful to their peers, especially because they are not disruptive to the class.

Internalizing problems did not predict later study skills. It seems that internalizing problems do not affect students' academic skills directly. Previous studies have found that students with internalizing profiles have milder difficulties and better adaptive skills compared to students with externalizing profiles (e.g., McConaughy et al., 1988). It may be that the internalizing nature of their problems does not affect their academic performance directly. Teachers' difficulty in reporting students' internalizing difficulties should be however noted.

On the other hand, high study skills predicted low internalizing problems 18 months later. Being a good student academically as reported by one's teacher seems to protect children against internalizing problems. Similar findings have been reported by a longitudinal study where dissatisfaction with grades and failure to do homework predicted depression one year later while major life events, daily hassles, and other psychosocial factors did not (Lewinsohn et al., 1994). It seems therefore that academic competence can protect students from internalizing problems.

On the other hand, scholastic self-competence did not have any predictive power over internalizing problems. Not considering oneself competent in the academic domain does not necessarily lead to internalizing problems. It might be that other aspects of competence are more important, such as general self-worth. Harter (1999) suggests that students construct a general perception about themselves that is over and above their performance judgments in specific domains of competence, such as academic and social competence. Having a low perception of one's academic competence may not influence

one's overall sense of self-worth. Therefore, it is recommended that future studies include a measure of general self-worth, as well.

It is interesting that internalizing problems did not predict peer support and peer support did not predict internalizing problems either. Lewinsohn and colleagues (1994) reported similar findings where self-rated social competence and social support from peers did not predict depression, although they were concurrently related to depression. Similarly, Hirsch and DuBois (1992) found that peer support did not predict symptomatology two years later after controlling for prior levels of symptoms unless students were going through a transition from elementary to junior high school. However, they found significant effects of symptomatology on peer support after controlling for initial levels of support.

There are many potential reasons why this study did not find significant effects between peer social support and internalizing problems. First, the measure of support used in this study was about the subjective experience of feeling socially cared and liked by one's peers. It did not refer to specific friendships. It might be that having a close friendship is more important for preventing psychopathology than feeling supported by one's peers in general. Second, it might be that the subjective experience of being supported by one's peers is more important for students during transition periods when they have not yet built their own close network of peers (see Hirsch & DuBois, 1992) or during periods of stress when peer support might be more needed. It might also be that peer support functions indirectly through its influence on adjustment indicators, such as grades and classroom behavior. Finally, the sample of this study was a normal, school-based, non-clinical sample, which means that the levels of internalizing behaviors were

lower as a whole, and thus, less interfering with students' adjustment. Future research needs to explore these possibilities before concluding that the influence of peer support on psychopathology might be limited.

Overall, internalizing problems had less predictive significance compared to externalizing problems. This is consistent with previous findings (e.g., Hetherington et al., 1985; Koot & Verhulst, 1992; McConaughy et al., 1988). As speculated above, there are several reasons why findings regarding internalizing problems are less stable than those of externalizing problems. First, it might be that the non-disruptive and thus, less observable nature of internalizing problems makes teachers not reliable reporters of this type of problems. Hinshaw (1992) also reports that rating scales may be less sensitive to capturing internalizing compared to externalizing behaviors. It might also be that teachers feel more empathetic towards students with internalizing problems and thus, tend to be positively biased towards them. Finally, it might be that internalizing problems do indeed have milder effects on students' adjustment compared to the more debilitating effects of externalizing problems.

Relation between Internalizing and Externalizing Problems (Models 1-3)

Externalizing problems at Time 1 moderately predicted high internalizing problems at Time 2 in the majority of the models. This finding corroborates previous cross-sectional studies, which indicate a moderate relation between externalizing and internalizing problems (Hinshaw, Han, Erhardt, & Huber, 1992; Reynolds & Kamphaus, 1998). Moreover, longitudinal research has shown that higher levels of externalizing

problems are associated with higher levels of internalizing problems (Capaldi, 1991; Gilliom & Shaw, 2004; Hetherington et al., 1985; Keiley, Bates, Dodge, & Pettit, 2000).

On the other hand, internalizing problems predicted lower externalizing problems 18 months later. However, this finding was not consistent in all models and was not as strong as the positive effects from externalizing to internalizing problems. Similarly, Keiley and colleagues (2000) reported a marginally significant effect where children with high mother-reported internalizing problems in kindergarten tended to have low externalizing problems.

It is clear in the literature that externalizing and internalizing problems often co-occur. However, the direction of their relation is not always clear. In this study, it is noted that the relation from externalizing problems to internalizing problems is moderate and positive while the opposite direction is smaller and negative. These findings shed some light on the relation between these constructs. It seems that children who have high prior levels of externalizing problems tend to develop later internalizing problems while children who are initially high in internalizing problems tend to remain low in externalizing problems. Previous research has shown that children with externalizing problems develop internalizing problems over time due to the rejection from peers and adults that they experience because of their externalizing problems (e.g., Kupersmidt & Coie, 1990; Kupersmidt, Coie, & Dodge, 1990; Ladd & Troop-Gordon, 2003; Volling, MacKinnon Lewis, Rabiner, & Baradaran, 1993). However, students who initially experience internalizing problems might have the tendency to react to problems by internalizing their symptoms and thus, remain internalizers and do not develop externalizing problems over time. Future research is needed to corroborate these findings.

Construct Stability (Models 1-3)

Externalizing problems showed high stability from Fall of Year 1 to Spring of Year 2. Standardized path coefficients ranged from .45 to .71. A considerable body of longitudinal studies has reported similar regression weights for intervals up to ten years (e.g., Capaldi & Stoolmiller, 1999; Lerner et al., 1988; Moffitt, Caspi, Rutter, & Silva, 2001; Stanger et al., 1993). Consistent with developmental models of psychopathology, this study shows that teacher-reported externalizing problems are stable and predictive over time.

Internalizing problems showed lower stability compared to externalizing problems but still high enough to be considered strong based on Cohen's (1988) criteria[1]. Standardized regressions weights ranged from .34 to .40. Similarly, studies of depression have found correlational estimates of the same magnitude (e.g., Cole et al., 1996). It is evident therefore, that internalizing problems show continuity over time, especially when one takes into account that teachers are not as good reporters of internalizing problems, as other raters, such as mothers. Teachers do not often have the opportunity to observe internalizing problems in school due to the subtle and private nature of internalizing behaviors (Keiley et al., 2000).

The continuity of competence indicators, such as social skills, study skills, peer support, and scholastic competence has not been explored as extensively as the stability of behavior problems in previous studies. It is important therefore to examine their continuity more closely. Study skills showed strong stability over a period of 18 months (i.e., path coefficients ranged from .62 to .74). One of the few competence studies has

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[1] Effect sizes of .15 are considered medium, whereas effect sizes of at least .35 are large (Cohen, 1988 p. 413).

reported a strong stability coefficient (.73) within a period of two years for teacher-rated academic competence (Lane et al., 2001). In addition, Masten and colleagues (1995) have reported moderate continuity in academic competence (.36) within a period of ten years.

Self-perceptions of Scholastic Competence showed moderate stability (i.e., regression weight= .29). There is scarce evidence regarding the stability of scholastic competence over time. For instance, Cole and colleagues (1996) reported a very strong stability of academic competence, consisting of self-reports, teacher, parent ratings, and peer nominations (.96). However, this strong finding is probably due to the short time span of their study (i.e., 6 months). Further research is necessary to corroborate the stability of self-reported scholastic competence.

Teacher-rated social skills and self-perceptions of peer support showed moderate to high stability, as well, with path coefficients ranging from .41 to .59 and with boys showing stronger stability of social skills (.59) than girls (.43). It seems that students who are perceived by their teachers as socially skilled and feel supported by their peers continue to be perceived socially competent and feel supported 18 months later. Previous studies show similar findings. For instance, Hetherington, Cox, and Cox (1985) report a high continuity of social competence for girls (Pearson r=.42) and a stronger one for boys (r=.65) in a period of six years. Similarly, Lane and colleagues (2001) report a strong stability coefficient (.66) for teacher-reported social skills within a period of two years. Finally, a longer longitudinal study indicates that teacher reports of social competence at age 6 highly predict peer social competence in adolescence (Hussong, Zucker, Wong, Fitzgerald, & Puttler, in press).

The stability of competence markers reported here is consistent with a developmental framework of psychopathology. Dispositional, biological factors and environmental conditions may influence the development of stable patterns of behavior for both competence and psychopathology.

Teacher-Student Relationships (Model 4)

Positive teacher-student relationships significantly predicted high social and study skills through the mediating effects of initial levels of social and study skills. It is particularly interesting that warm teacher-student relationships as rated by teachers also significantly predicted teacher-rated low externalizing and internalizing problems almost two years later through the mediating effects of initial levels of externalizing and internalizing problems. These findings suggest therefore that the quality of teacher-student relationships contribute to enhancing students' competence and decreasing both externalizing and internalizing problems. Previous longitudinal evidence support these results (Hamre & Pianta, 2001; Howes, 2000; Ladd & Burgess, 2001). This study adds to the existing literature by underscoring the importance of teacher-student relationship as a protective factor for enhancing students' competence and reducing students' behavior problems.

In addition, positive teacher-student relationships were strongly associated with lower externalizing and internalizing problems and higher social and study skills when measured concurrently either at Time 1 or Time 2. These results are comparable to previous concurrent studies that have found that teacher-student relationships are strongly

associated with students' positive outcomes, such as classroom adjustment, social skills, school liking, and school involvement (Baker, 2005; Birch & Ladd, 1997).

A novelty about the current study is that it looks at the opposite direction of the above longitudinal relations, as well. It was found that high study skills directly predicted positive teacher-student relationships 18 months later. It might be that teachers feel closer to students who are motivated to learn and work hard. Students with good study skills may also be more open to a supportive relationship with their teachers. Moreover, high externalizing problems directly predicted lower teacher-student relationships. These findings suggest that there are probably bidirectional effects between teacher-student relationships and competence indicators and behavior problems. Given that children are active agents in their environment, it is very probable that there are reciprocal relations among these variables. Therefore, children's behavior and competence levels directly influence their relationship with their teachers and teacher-student relationships indirectly affect children's levels of competence and behavior problems.

It is interesting however that internalizing problems predicted positive teacher-student relationships while positive teacher-student relationships indirectly predicted lower internalizing problems almost two years later. It is possible that teacher-student relationships protect students from internalizing problems but at the same time, teachers may be more prone to build warm relationships with children with internalizing problems who does not disrupt others due to the internalizing nature of their problems.

In addition to teacher-student relationships, this model explored the relations between competence and problem behaviors. Similar to the models presented above, this model verified the strong continuity of competence indicators and problem behaviors

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over a period of 18 months. In addition, externalizing problems negatively affected the development of both study and social skills through the mediating effects of initial levels of social and study skills. This finding suggests that behavior problems can indirectly influence the development of students' competence. Internalizing problems, on the other hand, negatively predicted the development of study skills but positively affected later social skills. As mentioned above, it may be that teachers positively view and are more empathetic with students whose problems do not disrupt others. This positive perception of their non-disruptive behavior may lead teachers to believe that students are behaving appropriately towards others. However, it should be noted that the magnitude of these relations was small.

In sum, this model provided evidence that beyond students' initial levels of competence and problems of both externalizing and internalizing nature, positive and warm teacher-student relationships are salient predictors of later social and behavioral adjustment in school. However, the opposite direction of these relations was evident, as well. Competence and behavior problems directly predicted teacher-student relationships longitudinally suggesting the importance of mutual effects between these variables. It seems that the relations between teacher-student relationships and behavior problems and competence are more complex than previously thought and research designs that consider the bidirectional effects are needed for uncovering the nature of these relations.

Limitations

Several limitations require caution in the interpretation of these results. First, there is shared source variance between the measures of behavior problems and most of

the competence measures. Teachers rated both students' behavior problems and competence with the exception of self-report measures, which may contribute to some inflated findings. Behavior ratings and self-reports were used to measure the constructs under investigation in this study. Observations could be used as a more objective measure of students' behavior. Moreover, this study lacks measures of family variables. Parents' reports would enrich this study by providing data regarding children's problem behavior and competence in non-school contexts. Differences in perspective need to be taken into account because it is possible that they make unique contributions to the understanding of competence. In addition, including family variables would indicate risk and protective factors that could influence the relations studied here and help us uncover different psychological mechanisms (e.g., Loukas, Zucker, Fitzgerald, & Krull, 2003). Therefore, it is recommended that future studies use multiple raters, methods, and contexts.

Another limitation of this study is the short time span of studying the longitudinal relations among the constructs of interest (i.e., 18 months). The processes examined in this study covered a particular developmental period (i.e., first to fifth graders), and thus, inferences regarding the present findings may be specific to this period. Having multiple data points covering longer periods of children's development might have provided insight on different developmental patterns. For instance, different dimensions of competence acquire precedence during adolescence (e.g., occupational competence, competence with romantic relationships) (Masten et al., 1995). Statistical methods that allow for the analysis of multiple data points would be recommended for future research (e.g., Hierarchical Linear Modeling).

Third, race and socio-economic status were confounded in this study, and restraints imposed by the schools regarding the collection of individual SES data made it impossible to differentiate the effects of race and SES. Therefore, the present findings regarding race should be viewed with caution since they may represent difference in SES. Data on both race and SES should be pursued in future research, especially because recent studies point to the importance of moderating effects based on race (e.g., Meehan, Hughes, & Cavell, 2003).

There are antecedent variables that this study was unable to control, such as IQ, language skills, neurodevelopmental delays, and biological influences. This lack of neurobiological variables is also worsened by the absence of early childhood data. Recent research has been more definite regarding the influences of early development and neurobiological factors on later adaptation (e.g., Fitzgerald & Zucker, 2005; Martel et al., 2004; Shonkoff & Phillips, 2000). Therefore, it is strongly recommended that future research account for early adjustment and behavior problems.

Finally, this study explored three indicators of competence (i.e., social competence, academic competence, and teacher-student relationships). However, there are other competence dimensions, such as behavioral-conduct competence (see Masten et al., 1995) and athletic-physical competence (see Harter, 1985a), which would be worth exploring in the same model as social and academic competence. Moreover, it would be important to examine the relational-friendship dimension of social competence. Research has shown that friendships have important influence on children's adjustment (e.g., Parker & Asher, 1993) and may help investigators uncover developmental mechanisms of the influence of social competence on future adaptation.

Implications for Practice

This study holds several implications for practice. Given the protective effects of the quality of teacher-student relationships documented in this study as well as previous research (e.g., Baker, 2005; Birch & Ladd, 1997; Hamre & Pianta, 2001; Pianta & Nimetz, 1991), it seems important that prevention and early intervention efforts focus on strategies to enhance teacher-students relationships. In this study, the quality of teacher-student relationships was a good indirect predictor of both low externalizing and internalizing problems and high social and study skills. Therefore, interventions that have the improvement of teacher-student relationships as a goal may be able to prevent the exacerbation of externalizing-internalizing problems as well as enhance students' study and social skills. Baker (2005) suggests that treatment programs which include teacher-student relationship components be used in school-based practice (e.g., Cowen et al., 1996; Hughes & Cavell, 1999).

In addition, this study consistently showed that study skills protected students against externalizing and internalizing problems. Although it is premature to suggest practical applications of this finding, it indicates that academic strengths may protect students against externalizing and internalizing problems. Previous research has shown that study skills (e.g., Thorpe et al., 2000, August)and an academic focus in classrooms function as a protective factor for psychopathology (e.g., Kasen, Johnson, & Cohen, 1990). Therefore, interventions that focus on enhancing students' academic strengths may protect students against the development of externalizing and internalizing problems.

Finally, the strong continuity for both behavior problems and competence indicators suggest the need for early interventions. Shaping these behaviors and

enhancing children's competencies early before they become stable characteristics will help prevent behavior problems and build children's strengths, which in turn will protect them from adjustment difficulties.

Conclusions

The contribution of this research lies in examining the longitudinal relations of behavior problems and competence markers in the same model. Few studies include measures of competence and even fewer examine both externalizing and internalizing problems and competence together. Moreover, in the literature, models with either externalizing or internalizing problems have been examined and thus, one does not know whether the predictive power derives from one or the other dimension (Masten & Coatsworth, 1995). In this study, externalizing and internalizing problems were explored in the same model and thus, it was possible to examine their different effects and the relation between them.

Competencies have been identified as protective factors against the development of childhood psychopathology (Coie et al., 1993; Masten & Curtis, 2000). This study concludes that teacher-student relationships and students' study skills hold promise for preventing externalizing and internalizing problems and enhancing students' well-being. Given the accumulation of empirical evidence regarding the importance of competence indicators, researchers should pay more attention to the empirical study of protective factors.

APPENDICES

APPENDIX A.

CLINICAL/AT-RISK RANGES

Students at Clinical or At-Risk Ranges for Externalizing-Internalizing Problems and Competence

	At-Risk T=60-70	Clinical T above 70		At-Risk T=30-40	Clinical T below 30
Externalizing Problems 1	55	38	Social Skills 1	46	15
Externalizing Problems 2	57	45	Social Skills 2	76	14
Internalizing Problems 1	29	22	Study Skills 1	89	10
Internalizing Problems 2	46	23	Study Skills 2	114	10

APPENDIX B.

HISTOGRAMS FOR ESTIMATED SAMPLE

Mean = 51.96
Std. Dev. = 11.19
N = 442
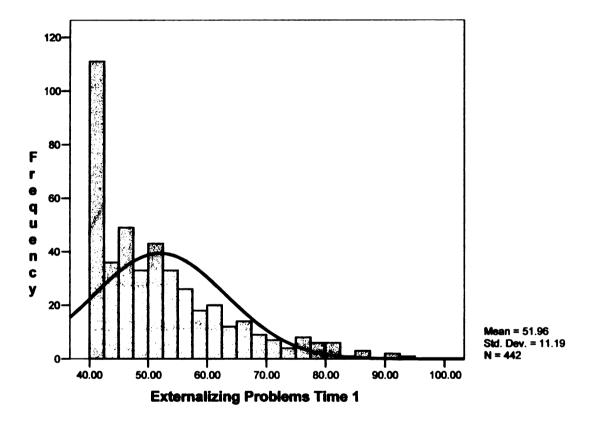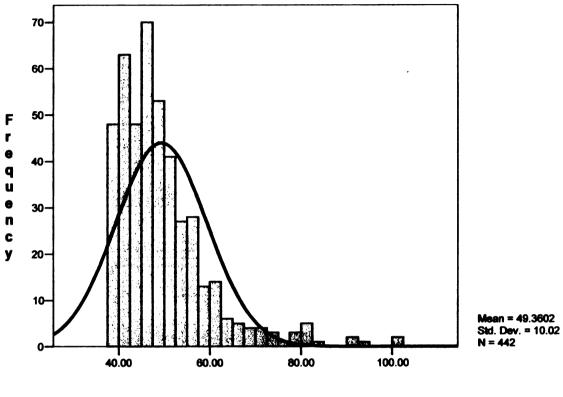
Figure 1. Distribution of Externalizing Problems at Time 1

Figure 2. Distribution of Internalizing Problems at Time 1

Mean = 52.454
Std. Dev. = 12.37
N = 442
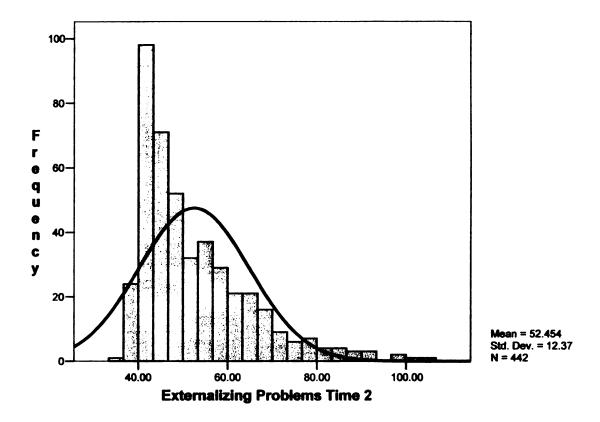
Figure 3. Distribution of Externalizing Problems at Time 2

Mean = 49.1035
Std. Dev. = 10.15
N = 442
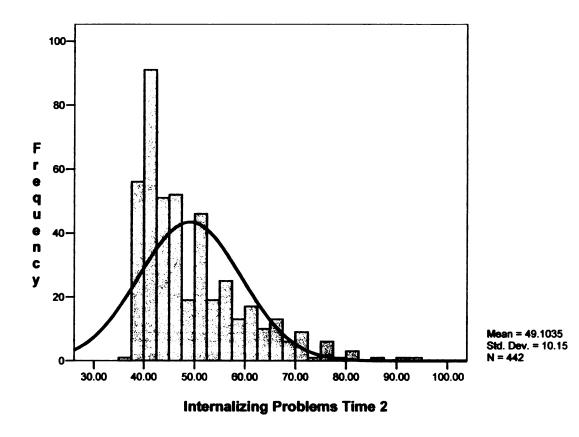
Figure 4. Distribution of Internalizing Problems at Time 2

Mean = 51.4467
Std. Dev. = 10.5
N = 442
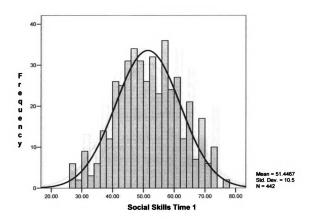
Figure 5. Distribution of Social Skills at Time 1
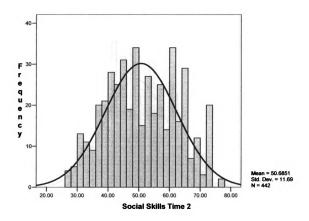
Figure 6. Distribution of Social Skills at Time 2

Mean = 49.4622
Std. Dev. = 10.27
N = 442
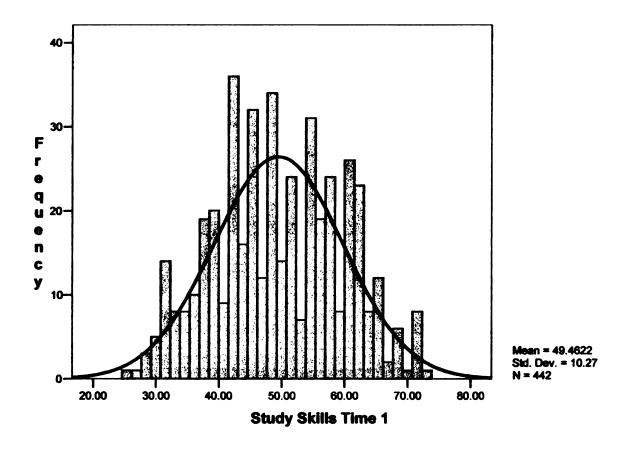
Figure 7. Distribution of Study Skills at Time 1
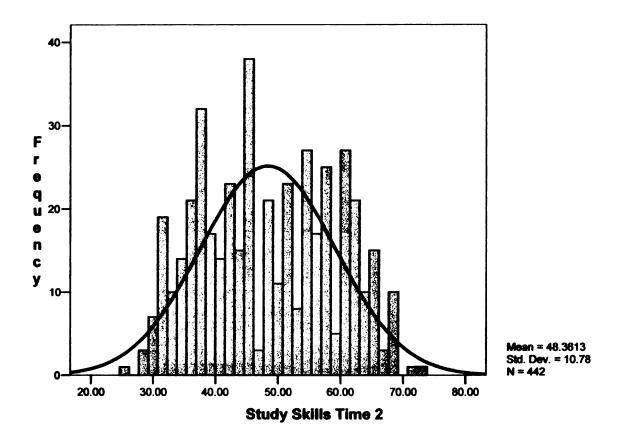
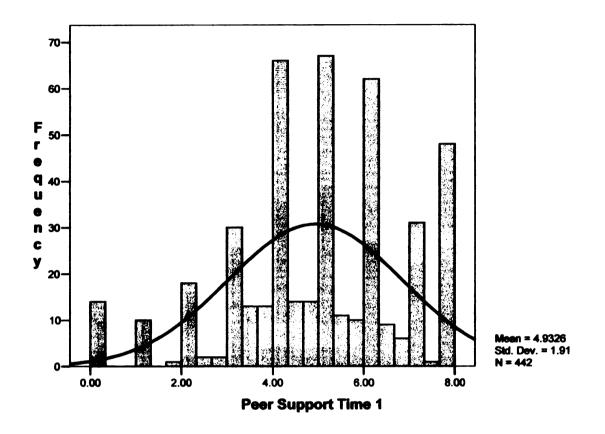*Figure 8.* Distribution of Study Skills at Time 2

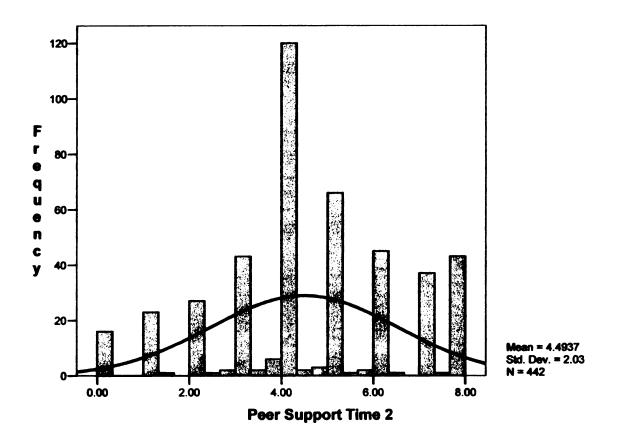*Figure 9.* Distribution of Peer Support at Time 1
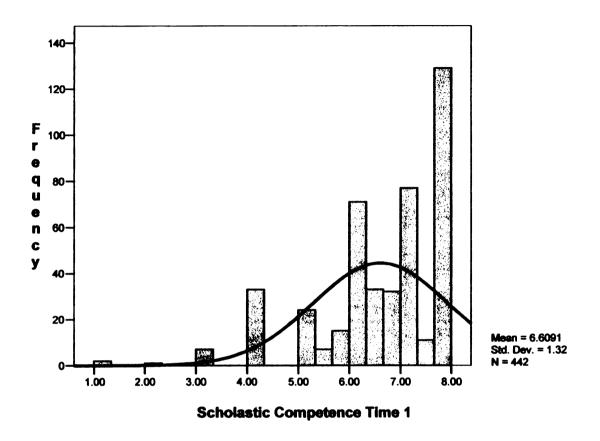
Figure 10. Distribution of Peer Support at Time 2

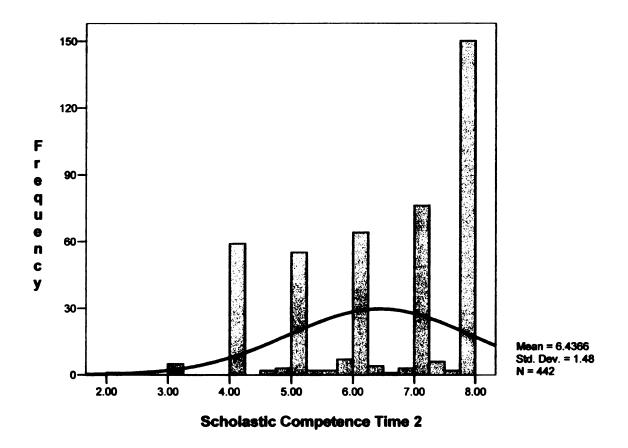*Figure 11.* Distribution of Scholastic Competence at Time 1

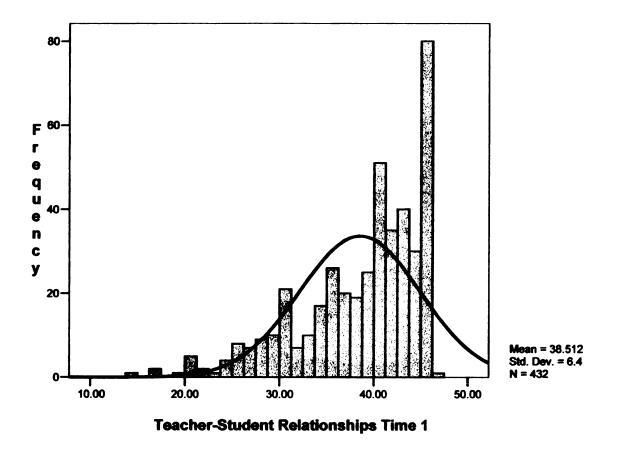*Figure 12.* Distribution of Scholastic Competence at Time 2

Mean = 38.512
Std. Dev. = 6.4
N = 432

Figure 13. Distribution of Teacher-Student Relationships at Time 1

Mean = 37.6075
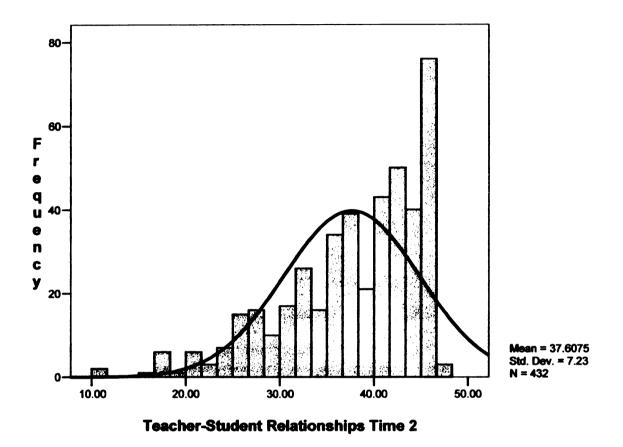Std. Dev. = 7.23
N = 432

Figure 14. Distribution of Teacher-Student Relationships at Time 2

APPENDIX C

STUDY MEASURES

Student Personal Support (Johnson et al., 1983)

1. In this class, other students think it is important to be my friend.
2. In this class, other students like me the way I am.
3. In this class, other students care about my feelings.
4. In this class, other students really care about me.

Scholastic Competence (Harter, 1985b)

1. I feel that I am very good at my school work.
2. I am smart enough to do my school work.
3. I do very well at my school work.
4. I can figure out the answers to school work.

Teacher-student Relationships (Pianta & Nimetz, 1991)

1. I share an affectionate relationship with this child.
2. This child and I seem to frequently struggle with each other.
3. This child feels that I treat him/her family.
4. I often feel myself becoming frustrated with this child.
5. This child accepts help from me when I offer it.
6. It is easy to joke and have fun with this child.
7. Dealing with this child drains my energy.
8. Despite my best efforts, I am uncomfortable with how this child and I have gotten along.
9. This child openly shares his/her feelings and experiences with me.

Behavior Assessment System for Children Subscales
(BASC, Reynolds & Kamphaus, 1998)

BASC- Social Skills

1. Volunteers to help with things.
2. Says "please" and "thank you".
3. Encourages others to do their best.
4. Has a sense of humor.
5. Compliments others.
6. Tries to bring out the best in other people.
7. Politely asks for help.
8. Congratulates others when good things happen to them.

9. Makes suggestions without offending others.
10. Admits mistakes.
11. Offers to help other children.
12. Shows interest in others' ideas.

BASC-Study Skills

1. Reads assigned chapters.
2. Studies with other students.
3. Analyzes the nature of a problem before starting to solve it.
4. Does extra credit.
5. Works hard even in courses he or she does not like.
6. Appears confident before tests.
7. Reads.
8. Completes homework.
9. Asks to make up missed assignments.
10. Has good study habits.
11. Uses the school library.
12. Is well organized.

The BASC Externalizing Problems Composite scales are:
1. Hyperactivity
2. Aggression
3. Conduct Problems

Aggression

1. "Shows off."
2. Dares other children to do things.
3. Hits other children.
4. Teases others.
5. Argues with parents.
6. Is a "sore loser."
7. Is critical of others.
8. Argues when denied own way
9. Is cruel to animals
10. Complains about rules.
11. Breaks other children's things.
12. Calls other children names.
13. Argues when denied own way.

Hyperactivity

1. Cannot wait to take turn.
2. Leaves seat during meals.
3. Throws tantrums.
4. Needs too much supervision.
5. Is restless during movies.
6. Fiddles with things while at meals.
7. Interrupts others when they are speaking.
8. Is overly active.
9. Makes loud noises when playing.
10. Climbs on things.

Conduct Problems

1. Runs away from home.
2. Has friends who are in trouble.
3. Is in trouble with the police.
4. Uses foul language.
5. Shows a lack of concern for others' feelings.
6. Has to stay after school for punishment.
7. Lies to get out of trouble.
8. Gets into trouble in the neighborhood.
9. Gets in trouble.
10. Has been suspended from school.
11. Lies.

The BASC Internalizing Problems Composite scales are:
1. Anxiety
2. Depression
3. Somatization

Anxiety

1. Worries.
2. Is too serious.
3. Worries about what parents think.
4. Says, "I get nervous during tests" or "Tests make me nervous."
5. Tries too hard to please others.
6. Is afraid of dying.
7. Worries about things that cannot be changed.
8. Worries about what teachers think.
9. Says, "I'm afraid I will make a mistake."
10. Says, "I'm not very good at this."
11. Worries about schoolwork.

Depression

1. Says, "I don't have any friends."
2. Says, "I want to kill myself."
3. Cries easily.
4. Says, "Nobody understands me."
5. Is easily frustrated.
6. Is easily upset.
7. Complains about not having friends.
8. Changes mood quickly.
9. Says, "I want to die" or "I wish I were dead."
10. Says, "Nobody likes me."
11. Is sad.
12. Says, "I'm so ugly."

Somatization

1. Complains of pain.
2. Vomits.
3. Has ear infections.
4. Makes frequent visits to the doctor.
5. Has headaches.
6. Has allergic reactions.
7. Gets sick.
8. Has difficulty breathing.
9. Complains of heart beating too fast.
10. Has stomach problems.

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