

ADOLESCENT ADJUSTMENT
IN RURAL APPALACHIAN YOUTH

Rinnel Gunnersinda Atherton

A dissertation submitted to the faculty of the University of North Carolina at Chapel Hill
in partial fulfillment of the requirements for the degree of Doctor of Philosophy in the
School of Education.

Chapel Hill
2009

Approved by

Advisor: Jill V. Hamm

Reader: Kimberly Dadisman

Reader: Kathleen Gallagher

Reader: Matthew J. Irvin

Reader: William B. Ware

© 2009
Rinnel Gunnersinda Atherton
ALL RIGHTS RESERVED

ABSTRACT

RINNEL ATHERTON: Adolescent Adjustment in Rural Appalachian Youth
(Under the direction of Jill V. Hamm)

Early adolescence can be a difficult experience for many youth. This complex phase of development occurs as children transition to middle school. Within middle school, adolescents are faced with new challenges including ever changing peer groups and different educational and behavioral expectations. These challenges have been recognized as having some bearing on adolescent adjustment to school. Similarly, the relationships adolescents have at school have been associated with academic adjustment. In the current investigation, it was anticipated that the relational context in which adolescents operate at school should also be linked to other indices of adjustment— social and behavioral— by the end of their year in the sixth grade.

Thus, the objective of this research was to ascertain the association between sixth grade adjustment and social integration, sense of belonging, and emotional risk relational dynamics that operate within the relational context of middle school community. The sixth grade is generally distinguished as a transition year in the lives of youth. Their move from the elementary school to a new and distinctively different school structure makes the transition challenging. The relational context in which young

adolescents function as they navigate the novel environment is proposed to play a role in adolescent adjustment.

Many studies have focused on adolescent adjustment, in terms of academic achievement. However, as individuals develop and progress through the developmental trajectory as a whole, adjustment should encompass social, behavioral, as well as academic elements. Considering this, there is a need to examine this phenomenon within a relational context that speaks to the social, behavioral, and cognitive components that would augment an understanding of adjustment. Consequently, the investigation utilized hierarchical linear regression analysis to facilitate comprehension of the extent to which sixth grade adjustment is associated with social integration, sense of belonging, and perceptions of emotional risk within middle school. In addition, the study sought to clarify whether or not gender functioned as a moderator between the dependent variable sixth grade adjustment and each of the independent factors (social integration, sense of belonging, and emotional risk). Analyses demonstrated lack of moderation by gender but revealed significant main effects. Notably, the results suggest that sense of belonging and group centrality matter to adjustment. The significance, limitations, and implications of this study for education and related research are discussed.

TABLE OF CONTENTS

LIST OF TABLES	vii
LIST OF FIGURES.....	viii
INTRODUCTION.....	1
Chapter	
I. THEORETICAL PERSPECTIVE.....	11
Early Adolescent Adjustment.....	11
The Nature of School Adjustment.....	12
Relational Aspects of Adolescent Adjustment.....	13
Community in a Relational Context.....	15
Summary.....	20
II. LITERATURE REVIEW.....	22
Adjustment in Adolescence.....	23
Integration into Social Network: Affiliations and Adjustment.....	28
Affective Ties and Adjustment.....	38
Emotional Risk and Adjustment.....	45
Adjustment in Appalachian Communities.....	50
Gender as Moderator.....	52

Current Study.....	54
Hypotheses.....	54
III.	
METHODS.....	59
Participants.....	60
Procedure.....	61
Measures.....	62
IV.	
RESULTS.....	75
Plan of Analyses.....	75
Descriptive Statistics.....	79
Sixth Grade Adjustment and Relational Factors.....	91
V.	
DISCUSSION.....	99
The Relational Context.....	103
Function of Affective Ties on Adjustment.....	104
Relating Integration and Social Standing.....	106
Achievement and Adjustment.....	108
Limitations of Study.....	109

Conclusion.....	114
REFERENCES.....	118

LIST OF TABLES

Table

1. A comparison of means between students retained and those dropped from the study.....76
2. Means and standard deviations of dependent variables and predictors.....82
3. Correlations among predictors (relational variables).....84
4. Correlations among control and predictor variables and Teacher-rated Aggression (6th grade).....88
5. Correlations among control and predictor variables and Teacher-rated Academic Competence (6th grade).....89
6. Correlations among control and predictor variables and Teacher-rated Social Adjustment (6th grade).....90
7. Hierarchical Linear Regression analysis of 6th grade Adjustment— Teacher-rated Behavioral adjustment.....93
8. Hierarchical Linear Regression analysis of 6th grade Adjustment— Teacher-rated Academic.....95
9. Hierarchical Linear Regression analysis of 6th grade Adjustment—Teacher-rated Social adjustment.....97

LIST OF FIGURES

Figures

1. Measures: Dependent, control, and predictor variables.....63

INTRODUCTION

Of all the phases in the developmental trajectory in which adjustment to school is intriguing, early adolescence captures the spotlight. Fundamentally, early adolescence is one of the most compelling and yet complex developmental phases. The complexity is made more profound because for many youth early adolescence occurs together with the move to middle school—a new educational environment. Early adolescence, particularly when it coincides with the transition to middle school, can be a phase of experimentation, emotional turmoil, doubt, and apprehension. At this time young adolescents may show signs of increased pessimism in their outlook, exhibit more challenging behavior, and display a declining interest in school (Carnegie Council on Adolescent Development, 1989; Roeser & Eccles, 1998). Nonetheless, the experiences youth have may transform and reveal them as individuals with the prospective to engage in critical independent thinking, the ability to learn, and the capacity to hold themselves accountable for their actions (Carnegie Council on Adolescent Development, 1995; Carnegie Council on Adolescent Development, 1989; Eccles, Midgley, Wigfield, Buchanan, Reuman, Flanagan, & Mac Iver, 1993; Roeser, & Eccles, 1998).

Accordingly, researchers have worked diligently to distinguish crucial factors that promote positive adjustment to middle school (Diehl, Lemerise, Caverly, Ramsay, & Roberts, 1998; Farmer, Irvin, Thompson, Hutchins, & Leung, 2006; Wentzel, Cadwell, & Barry, 2004, Zettergren, 2003). Research relating to early adolescence has connected the relationships children experience at school to indices of adjustment such as achievement and participation in school events (Wentzel, Caldwell, & Barry, 2004). Peer relationships have the potential to promote both social and cognitive development, both of which are crucial to positive adjustment (Diehl et al., 1998). Considering this, youth who experience peer rejection are predisposed to undergo a broad variety of adjustment problems during adolescence and into adulthood (Parker & Asher, 1987). In contrast, young people who are well received by and hold positions of status among their peers are candidates for positive adjustment (Gifford-Smith & Brownell, 2003; Zettergren, 2003).

In general, school adjustment has been operationalized as academic achievement; however, in early adolescence, adjustment can be actualized in relation to three domains— academic, social, and behavioral (Farmer et al., 2006). Based on the principles of developmental science, adolescents progress along a developmental trajectory as an interconnected whole rather than as distinct elements (e.g., psychologically, physically, socially, and behaviorally). These

diverse developmental characteristics function jointly to influence each other as they shape adjustment patterns. Therefore, when adolescents are viewed as educationally capable, they are quite liable to do well socially with other adolescents, participate in practical and constructive activities, conduct themselves pro-socially, and affiliate with other adolescents who encourage the pursuit of educational accomplishment.

Early adolescence can be a defining moment in the academic lives of young individuals (Carnegie Council on Adolescent Development, 1995; Carnegie Council on Adolescent Development, 1989; Goodneow, 1993). It is a phase in which the ability toward self-reflection is emerging. It is also a time when youth are starting to explore their individuality in relation to novel interests and taking steps toward those interests which have bearing on their prospects in the future. In view of that, Goodenow (1993) made the case that early adolescence is a time for some in which there are more negative experiences in relation to schooling (e.g., apprehension about academic performance, in evaluating their ability in terms of others, and in uncertainty about the source of one's educational outcomes). Early adolescents are trying to acclimatize to the countless demands of middle school (Carnegie Council on Adolescent Development, 1989; Lonsbury, Marani, & Compton, 1980). Sixth grade, as a typical building transition year from elementary to middle school, can be a

particularly difficult time in the lives of early adolescents (Wenz-Gross, Siperstein, & Parker, 1997). The environmental shift could strongly impact nascent developmental processes due to significant academic and social changes (Rudolph, Lambert, Clark, & Kurlakowsky, 2001; Wenz-Gross, Siperstein, & Parker, 1997). Specifically, the structure of learning conditions within the middle school setting is more complex than the structure of the learning environment of elementary school; young adolescents are faced with different academic standards, teacher expectations, and classroom structures. With regard to social changes, adolescents must cope with a larger and ever-changing peer network at a phase when, developmentally, peer relationships become quite integral and assume greater value in shaping and understanding the self. Thus, adolescents are greatly influenced by the peer networks in which they are embedded or into which they seek to gain membership (Brown & Theobald, 1999; Gifford-Smith & Brownell, 2003; Lonsbury et al., 1980). Considering these factors, the case can be made that the experiences youth have within the learning community affect their adjustment to school. Theoretically, the peer relations that children experience influence their adjustment; from a developmental perspective, individuals develop diverse needs that can be satisfied by distinctive social interactions at the different phases of development (Erdley, Nangle, Newman, & Carpenter, 2001). Furthermore, the

capacity to positively interact with others and the interpersonal competencies necessary for successfully navigating interactions with others develop within the context of the varied relationships youth experience (Erdley et al, 2001; Sullivan, 1953). As a result, it can be argued that the relational context of early adolescence is foundational to adjustment. Thus, the current study investigated the association between the relational framework embedded within middle school community (specifically, adolescents' social integration, sense of belonging, and perceptions of emotional risk experienced) and adjustment.

In early adolescence, peer relationships in the school setting play a significant role in allowing youth to define and to come to terms with their individuality as they progress developmentally (Brown & Theobald, 1999; Gifford-Smith & Brownell, 2003; Lonsbury et al., 1980). An additional meaningful developmental context is the community in which adolescents reside. One geographic region identified as a potentially unique developmental context is Appalachia. Appalachia consists of small communities with strong social networks and with rich cultural traditions (Ali & Saunders, 2006). Appalachian adolescents are socialized to maintain close relationships with family, to respect family values, retain close bonds to community, and to develop a strong sense of responsibility (Ali & Saunders, 2006; Crockett et al., 2000; D'Amico, Matthes, Sankar, Merchant, & Zurita,

1996; Hamm & Dadisman, 2008; Howley, Harmon, & Leopold, 1996; Templeton, Bush, Lash, Robinson, & Gale, 2008). These positive social interactions and the interpersonal competencies essential for directing exchanges with others that adolescents experience and develop outside of school could influence positive social interactions with peers within the school context. Thus, it can be inferred that Appalachian early adolescents have been socialized to draw on their social interactions as they adjust to the school environment. The positive relational experiences adolescents have could facilitate positive social adjustment in school. Many small towns and rural communities (including Appalachia) are geographically and culturally remote; schools in these communities are likely to provide crucial social, cultural, and educational connections for youth (D'Amico et al., 1996). And so, peer relationships and interactions in school can become quite significant because of limited options outside this setting. For this reason, it can be argued that the relational context in schools in small town communities is a potential resource to early adolescent adjustment. Even so, Appalachian youth have been recognized as performing poorly in school (Ali & Saunders, 2006; Williams, 2005). Given this, perhaps an examination of the relational context could provide crucial information that could help educators cultivate contexts that would support positive adjustment within Appalachian schools. As adolescents go forward developmentally,

their social exchanges significantly influence their method of social interaction, their reasoning, and their values (Farmer et al., 2007). Thus, the strong bonds, shared values, and social interactions that rural Appalachian adolescents experience within the school should be particularly important to their school adjustment. Given the cultural uniqueness of these communities, it seemed that a plausible step would entail examining how the relational context specific to small towns in rural communities including Appalachia could be significant to adolescent adjustment to school. Therefore, the current study investigated the association between the relational framework embedded within middle school community and 6th grade adjustment in two small towns in the Appalachian region.

The current study is unique in several ways. First, the objective of the study is to examine adjustment to school from a perspective that is multidimensional in nature—social, behavioral, and academic. While many studies have examined adjustment in terms of academic achievement, a more practical approach may well entail examining adjustment from a social, behavioral, and academic perspective since, individuals develop as an integrated whole (i.e. socially, behaviorally, and psychologically; Farmer et al., 2006).

Second, the current study focused on the role of the relational context operating within the middle school environment. This entailed examining the extent to which there is an association between 6th grade

adjustment to middle school and a) adolescents' social integration into the larger network system, b) adolescents' sense of belonging, and c) the emotional risk adolescents perceive. This approach provides a distinguishing element to the study.

Third, much research concerning children or adolescent adjustment, belonging, and social networks tends to focus on the individual level (Farmer, 2007; Goodenow, 1993; Juvonen, 2000; Keifer, & Ryan, 2008; Levitt, Levitt, Bustos, Crooks, Santos, Telan, Hodgetts, & Milevsky, 2005; Nichols & White, 1999). However, in the current study one of the goals involves attention to adolescents' group memberships during the middle school transition. This focus should give some measure of insight into how group standing and integration into the greater network system are connected to adolescents' adjustment because of socialization processes at work.

Fourth, normative research relating to Appalachian adolescents has been somewhat limited (Ali & Saunders, 2006; Crockett et al., 2000; D'Amico, Matthes, Sankar, Merchant, & Zurita, 1996; Howley, Harmon, & Leopold, 1996; Templeton, Bush, Lash, Robinson, & Gale, 2008). For instance, research has not examined the wide disconnect between Appalachian adolescents' socialization and school. The Appalachian community is somewhat geographically and culturally isolated. Many adolescents do not have opportunities to interact socially outside of school (for example in malls and cinema).

Therefore, schools in Appalachian communities are apt to make available fundamental social, cultural, and educational connections for these adolescents (D'Amico, et al., 1996). Considering the distinctive socialization processes that occur within schools in Appalachian communities because of the remote nature of many Appalachian regions, an examination of adjustment focused on Appalachian adjustment lend the current study a unique quality.

Last, research dealing with children or adolescent adjustment by and large have focused on gender issues in terms of mean-level differences in adjustment rather than gender differences in experiences during middle school transition (Farmer, Estell, Leung, Trott, Bishop, & Cairns, 2002; Farmer, T., Irvin, M., Thompson, J., Hutchins, B., & Leung, M., 2006). However, research related to adjustment, aggression, and peer affiliations supports the idea that gender may operate as a moderator with regard to the association between 6th grade adjustment and relational facets (i.e. social integration, sense of belonging, and emotional risk) entrenched within the relational context. Thus, a logical and significant next step was to examine gender's function as a moderator between adjustment and each factor within the relational context. Explicitly, this entailed examining whether or not the relationship between social, behavioral, and academic adjustment and social integration, sense of belonging, and emotional risk is the same or different between males and females.

In summary, early adolescence is a complex phase of development that coincides with the transition and adaptation to middle school. Adjustment is conceptualized to be dependent on adolescents' experiences of the relational context, which scholars have operationalized as community. Thus, the primary concern of this study was to examine sixth graders' school adjustment from a developmental science perspective, as a function of the relational context adolescents experience with regard to their integration into the social networks embedded within the community, their affective ties to the school community, and their perceptions of emotional risk within the school community. Another significant aspect of the study was the focus on whether or not the association between adjustment and facets of the relational context is distinct between male and female adolescents.

CHAPTER I

THEORETICAL PERSPECTIVE

Early Adolescent Adjustment

Adolescence is a period of transition in which individuals begin to ascertain who they are; they experience burgeoning autonomy and self-determination, and undergo the change from youth to maturity (Carnegie Council on Adolescent Development, 1995). Its commencement is connected to organic, behavioral, and social changes that generally overlap with the move to middle school. Consistent with developmental theories, adolescence is a phase of development in which transformation and growth is an ongoing process (e.g., Adams, 2005).

Children are faced with new challenges with the onset of early adolescence (Carnegie Council on Adolescent Development, 1989). Individuals age ten through fourteen have greater autonomy, fewer restrictions, and more options at a stage when they require supervision and fostering. With support, many youth are able to successfully navigate through this crucial transitional phase. However, many may not experience positive adjustment when their psychological and physical well-being is eroded away due to the many challenges youth experience (Carnegie Council on Adolescent Development, 1995).

The Nature of School Adjustment

Frequently, school adjustment has been conceptualized specifically in academic terms. However, from a developmental perspective, as adolescents mature, they do so physically, mentally, behaviorally, and socially in concert to influence patterns of adjustment (Cairns, 2000, Magnusson & Cairns, 1996). Thus, student adjustment should be abstracted from social and behavioral aspects of the students (Farmer et al., in press; Farmer et al., 2006). Compatible with a developmental perspective, adolescents who undergo unfavourable adjustment in adulthood appear to have had problems across several areas earlier in development (Farmer et al., 2006; Wentzel, Caldwell, & Barry 2004). In contrast, adolescents, even individuals from deprived conditions, who experience productive outcomes in adulthood, tend to have exhibited many social, behavioral, and academic competencies in adolescence (Farmer et al., 2006; Luthar, Cicchetti, & Becker, 2000). Unfavorable learning outcomes (e.g., academic failure or dropping out of school) have been associated with interrelated sets of academic, social, and behavioral risks. Farmer et al. (2006) specified that behavioral and social competency promotes academic accomplishment, and that behavioral and social incompetence will facilitate unfavorable academic outcomes. Thus, adjustment to school in early adolescence is best conceptualized in academic, social, and behavioral domains.

Relational Aspects of Adolescent Adjustment

In theory, every teenager has long-term needs that should be fulfilled in order that they become well adjusted adults including a need to experience a sense of significance as human beings, to achieve significant membership in positive and productive groups, to recognize principled sources for making sound decisions and to understand how to utilize accessible support structures, to engage in activities that demonstrate practical and exploratory interest, to expect positive prospects with genuine chances, and to discover different approaches that allows them to be valuable to other individuals. The relational nature of these experiences nurtures positive adolescent adjustment (Carnegie Council on Adolescent Development, 1995; Carnegie Council on Adolescent Development, 1989).

Vygotsky (cited in Osterman, 2000) emphasized the significance of social exchanges as the foundation of learning. This is fundamental since discourse promotes thinking, helps individuals build a better understanding and awareness of the needs of others, and allows individuals to recognize themselves as accommodating and helpful members of a collective (Osterman, 2000). The experience of relating to others—one aspect of the relational context—promotes a sense that one deserves to be valued and considered. It also fosters the belief that one is cared for in one's social situation. Furthermore, the social exchanges that individuals experience influence their view of

themselves. Therefore, social exchanges that are positive and supportive will augment feelings of interrelatedness; consequently this strengthens and encourages corresponding interactions. Farmer, Xie, Cairns, & Hutchins (2007) argued that as children progress developmentally, their exchanges with others play a valuable part in their thinking, principles, and social interactional style. The manner in which children interrelate during social exchanges is influenced by the activity of other individuals who participate in the interaction. Thus, the nature of the relational context experienced by adolescents at school (e.g., social exchanges) has a reciprocating influence on the individuals and groups within the environment. Given these factors, theoretically, the relational context can be considered fundamental to adjustment.

In theory, Vygotskian and Dewey-like perspectives promote the relational context as fundamental to academic, behavioral, and social adjustment through the idea of school operationalized as community (Osterman, 2000). Implementing structures that support affective ties and create community are components of the relational context that are integral to learning. The social context is fundamental to adjustment in order to facilitate optimal performance (McMillan & Chavis, 1986; Osterman, 2000); the relational context significantly influences behavior and performance (Osterman, 2000). Thus, it can

be argued that the relational context is foundational to individuals' social, behavioral, and academic adjustment.

Community in a Relational Context

One way of thinking about the relational context that early adolescents experience at school is to draw on the idea of community. Community has been characterized from a relational perspective focusing on the nature of social interactions that occur among individuals (McMillan & Chavis, 1986). Community is discernible and functions by means of the mutual principles, shared concerns, common interests, skills, and similar ways of thinking established within organizational margins; these are distinctively relevant to school (Fendler, 2006; Keyes & Gregg, 2001; McMillan & Chavis, 1986; Osterman, 2000).

By this definition, middle schools may be considered communities because they exemplify many of these aspects. For instance, in many schools there is dialogue and learning, development of peer relations, positive interdependence among students, productive work outcomes, achievement and learning, and a sense of belonging (Osterman, 2000); these experiences promote and represent community. Given the definition and features of community, one can posit that community is linked to individuals' perceptions of the relational context.

McMillan and Chavis (1986) conceptualized sense of community in relational terms. They theorized that sense of community involves multiple features including membership through social integration into the community, an affective tie to the community, and a sense that the community offers an emotionally and physically safe context for individuals. Applications of these dimensions are readily evident in the middle school setting.

Social integration. McMillan and Chavis (1986) made the case that from social integration, individuals obtain a sense of inclusion. Individuals within a community frequently have shared values; when they come together they realize that they have similar wants, concerns, and goals. This cultivates the idea that in coming together, their own as well as other members' needs will be satisfied. The shared values held by members of the community foster an integrative influence on the group as a whole. When there is a feeling of community, members strive to discover ways of getting people to work together so that the needs of every member are satisfied. Inclusion also brings about status to members. In cases where members of a group perform important roles in the community because of their skills, affiliation with these members by design positively impacts the status of other members of the group. Individuals are drawn to other individuals and groups within the community that proffer the best returns. Theoretically, affiliation or membership in a group recognized as holding a core

position promotes an individual's status throughout the community (Cairns, Gariepy, Kindermann, & Leung, 1995; Farmer & Rodkin, 1996; Farmer, Xie, Cairns, & Hutchins, 2007).

In the middle school context, inclusion and status manifest themselves in terms of social network affiliations. Cairns et al. (1995) argued that social network is a comprehensive concept that refers to interactions between people within homogeneous groups and across diverse groups (e.g. classrooms or schools). The relational character of networks symbolizes inclusion because networks encompass affiliations between individuals (Cotterell, 2007). Naturally occurring in all school structures is a social network system in which children organize themselves into peer groups embedded within the greater social network. Children are drawn to similar peers affiliating with others who share like characteristics (Farmer et al., 2007). They navigate towards others they perceive to be competent or skilled in dimensions of importance to themselves. Success fosters group cohesiveness, which reflects inclusion (McMillan & Chavis, 1986). As children build secure relationships, those who form associations are expected to become more alike as they interrelate and mutually create new values and perspectives in their social exchanges. This is important in a middle school setting to adolescent adjustment. As early adolescents enter the middle school environment they are continuously trying to become socially integrated and to attain membership within a

core group (Carnegie Council on Adolescent Development, 1995; Carnegie Council on Adolescent Development, 1989; Farmer, Xie, Cairns, & Hutchins, 2007). Achieving this goal is theorized to foster positive adolescent adjustment within the context of middle school.

Affective ties. McMillan and Chavis (1986) specified that sense of community is derived in part from an emotional connection to the larger community. This bond emerges in some measure because of past experiences that were shared or from empathy based on those experiences. Thus, affective ties come about when a group of individuals relate to or participate in mutual past experiences (McMillan and Chavis, 1986). The social exchanges that members share as well as characteristics of those interactions promote or hinder development of affective ties. In the context of middle school, the affective tie that students develop for their school communities has been defined as their sense of school belonging (Flanagan, Cumsille, Gill, Gally, 2007; Goodenow, 1993; Osterman, 2000). Flanagan et al. (2007) theorized that the type of social climate that is constructed in school settings influences students' sense of belonging, and students' belief that their perspective is important. Developmentally, when early adolescents relate to others in their community and develop a sense of belonging, this stimulates a sense of well-being that cultivates a drive to engage and contribute to a healthier community (Flanagan et al., 2007; Osterman, 2000).

Perception of emotional safety in support of development.

McMillan and Chavis (1986) theorized that one of the basic responsibilities of a strong community is to foster members' abilities to satisfy their own needs as well as those of the community. The shared values held by the members of a community should promote the desire among members to monitor and to support and fulfill the needs of each member of the collective. Thus, fulfillment of members' needs reinforces the group's cohesiveness as the person group dynamic becomes worthwhile. Standards based on shared values by group members provide emotional security thereby protecting group closeness. Thus, conceptually, members of the community need to have a sense that they are secure (i.e. experience relatedness to others, believe that they are valued by other members, experience accommodating conditions, and develop trust and a shared respect with others) as this encourages participation in and contribution to the community and fosters the feeling among members that their needs are satisfied (McMillan & Chavis, 1986; Osterman, 2000).

In the middle school setting one way to conceptualize emotional safety is in relation to the risk students perceive in participating in academic settings. Hamm and Faircloth (2005a) conceptualized this aspect of schools' communities as emotional riskiness. Early adolescents may view their classrooms as unaccommodating environments. Such social situations may be

perceived by students as not proffering social or academic support because they do not provide opportunities for students to express their views or engage in discourse (Osterman, 2000). Many middle school students have concerns about derision by peers for actively engaging in classroom undertakings or seeming too intelligent; this sometimes leads to classroom disengagement (Juvonen, 2000; Juvonen & Murdock, 1995). In classes in which the responses are viewed as correct or incorrect and the teacher is established as the main authority on students' thoughts and offerings disengagement may be even more pronounced (Hamm & Faircloth, 2005a; Juvonen, 2000; Juvonen & Murdock, 1995). In contrast, students' overall adjustment may benefit if they experience peer support and negligible emotional threat for their endeavors and contributions. Occasions within the context of school that give rise to students collaborating and engaging in discourse and positive social interactions are apt to stimulate further prosocial behaviors (Osterman, 2000). This in turn should be strongly associated with overall positive adjustment.

Summary

In review, the theoretical perspective considered here illustrates that early adolescence can be a challenging phase. Moreover, this period of development coincides with the transition to middle school. Early adolescence can be specifically complex as this is a phase of development in which children experience fundamental changes and

challenges to positive adjustment (Carnegie Council on Adolescent Development, 1995; Carnegie Council on Adolescent Development, 1989; Eccles, Midgley, Wigfield, Miller, Buchanan, Reuman, Flanagan, & Mac Iver, 1993; Farmer et al., 2006). Adolescents are in a state of transition—they experience changes associated with psychological and physical development as well as changes related to the shift to middle school. Young adolescents regard their peers as the most significant others in their lives (Carnegie Council on Adolescent Development, 1989; Lonsbury et al., 1980; Roeser, & Eccles, 1998). As well, peer acceptance at this phase is quite important and peer networks rather influential. The relational context is foundational to positive adjustment (Wentzel et al., 2004; Zettergren, 2003). In general adolescents endeavor to become socially integrated within the larger social network, experience a sense of belonging as their needs are satisfied, and benefit from their perceptions of an emotionally secure environment within the context of middle school.

Considering these issues, the primary concern of the present study was to examine school adjustment over the course of the sixth grade school year. This necessitated evaluating school adjustment as a function of the relational context within middle school, defined by social network affiliations (i.e. through integration into the network system), affective ties conceptualized as students' sense of belonging, and emotional risk.

CHAPTER II

LITERATURE REVIEW

Considering that early adolescence is a difficult period in the developmental course occurring in conjunction with the move to middle school (Carnegie Council on Adolescent Development, 1989; Goodenow, 1993; Wenz-Gross, Siperstein, & Parker, 1997), adjustment to school at this phase is challenging for adolescents and compelling to researchers. Following the middle school transition young adolescents are faced with higher academic standards and teacher expectations as well as different classroom structures (Wenz-Gross, Siperstein, & Parker, 1997). Also, the social exchanges early adolescents experience within middle school are vastly different than experiences in elementary school. Adolescents must cope with more extensive and constantly changing peer networks (Brown & Theobald, 1999; Gifford-Smith & Brownell, 2003; Wentzel et al., 2004). Taken together, these events should be directly related to early adolescents' social, behavioral, and academic adjustment to middle school. One way of examining early adolescents' adjustment, given the multifaceted aspects of the middle school social environment, is from a relational perspective.

In view of this, there are three elements of the school relational context that are relevant to the current study. The first component, social network affiliation, focuses on students' actual group-based relationships (i.e., their integration into the network system). The second element, affective ties, conceptualized as a sense of belonging, relates to students' overall sense of membership within the larger school context. The final variable focuses on students' perception of the larger school context in terms of its emotional safety. Together, these relational components are proposed to contribute to overall adjustment during the middle school transition year. Relative to the relational context, studies have shown that there are differences between male and female students on factors representative of the relational perspective. Thus, literature concerning adolescent adjustment and these three components of the relational context as well as the issue of gender functioning as a moderator will be considered in subsequent sections.

Adjustment in Adolescence

In general, student achievement has been used to define student adjustment to school; however, adjustment to school is more realistically socially, behaviorally, and academically characterized (Farmer et al., 2006). Early adolescents who are well adjusted are seen as competent individuals with specific social and behavioral qualities including prosocial behavior, affiliations with others who encourage

educational endeavors, and attentive participation in school activities. According to developmental science theory, adolescent adjustment to school is associated with multiple factors— social, behavioral, and academic— which jointly function while influencing each other (Cairns, 2000; Farmer et al., 2006). Early adolescent adjustment is particularly complex as adolescence is a developmental phase distinguished by social, cognitive, and physical changes occurring in conjunction with the transition to middle school (Kingery & Erdly, 2007). Owing to declines in school focus, educational success, and confidence as well as rises in mental and emotional stress, positive middle school adjustment in early adolescence is difficult for many youth to attain.

Research relating to middle school has positively linked children's school affiliations to indices of adjustment such as achievement, participation in school-related events, plus prosocial activities (Wentzel, Caldwell, & Barry, 2004). Of note, the characteristics of one's friends play a significant role in student adjustment (Wentzel et al., 2004). Furthermore, studies have illustrated that peer affiliation contributes to adolescents' sense of self as well as overall school adjustment (Maatta, Stattin, & Nurmi, 2006). Adolescents' associates and peers may negatively or positively impact academic adjustment. As children progress developmentally, their exchanges with other individuals play a valuable part in their thinking,

principles, and how they behave (Farmer et al., 2007). This implies that the interactions children have with others impact their social, behavioral, and academic competence. Further, the way in which children relate during social exchanges is influenced by the activity of other individuals who participate in the interaction. This suggests that pro-social interactions are important to social, behavioral, and academic skills conceivably as significant indicators of positive adolescent adjustment within relational contexts at school.

In the current study, the focus is on the connection between the relational context of middle school and student adjustment at the end of the middle school transition year. Teacher reports are used to measure student adjustment both at the end of the transition year as well as prior to the shift. There are various methods for garnering information pertaining to school adjustment, including teacher, observer, parent, and student self reports (Towers, Spotts, Neiderhiser, Plomin, Hetherington, & Reiss, 2000). Researchers have called attention to the importance of teacher ratings as teachers have comprehensive information of children's social, behavioral, and academic competence within the school environment and are apt to provide more objective ratings than parent or students' self reports (Edl, Jones, & Estell, 2008; Pellegrini et al., 2007; Towers et al., 2000). Thus, reports by teachers are not only likely to be reliable with

regard to how students function in school (Xie, Mahoney, & Cairns, 1999), they are valued as a source of data.

Relevant to the current study, one way of evaluating adjustment is via the Interpersonal Competence Scale-teacher (ICS-T), an instrument comprising a set of items for teachers to rate students. Conceptually, the ICS-T has 18 items that assess qualities of adolescents and children that signify social, behavioral, and academic adjustment (Cairns, Leung, Gest, and Cairns, 1995; Xie et al. 1999). Research has demonstrated that the measure produces consistent factors that have practical predictive stability and validity (Cairns, Leung, Gest, and Cairns, 1995). For instance, specific items in the scale (good at spelling, good at math) apply to achievement; other items in the scale (gets in trouble, gets into fights, argues, etc.) are applicable to behavior; while other items in the scale (popular with boys, popular with girls, has many friends) relate to social contexts.

The Interpersonal Competence Scale-teacher has been used by various researchers in its entirety as an indicator of overall adjustment (Cairns et al., 1995; Farmer, Rodkin, Pearl, & Van Acker, 1999; Farmer, Irvin, Sgammato, Dadisman, & Thompson, 2009; Xie et al., 1999). Although a total score may be used based on the factors from the ICS-T scale including, aggression, popularity, academic, affiliative, and Olympian, researchers often employ specific subscales from the measure to tap into particular domains in line with the goal of

their research (Cairns et al., 1988; Farmer et al., 2003; Farmer et al., 2006). Empirical research by Cairns et al. (1995) established that the ICS-T scale and its subscales are reliable and valid indicators of adjustment. Research by Cairns et al (1988), and also by Farmer et al. (2006), on rural African American youth, incorporated the aggression, popularity, affiliation, and academic subscales in their study focused on social networks and aggression. In Farmer et al.'s (2003) study concerning adolescent affiliations and group type, two factors (aggression and popularity) from the ICS-T scale were utilized. Although there is variability in the quantity of subscales researchers incorporate, a consistency across studies is a focus on the aggression, popularity, and academic subscales as indicators of adolescent adjustment.

Teacher-ratings of adjustment are believed to be a valid source of information about adjustment. They are used in longitudinal research; different teacher-raters are used to evaluate students at different time points. Research suggests that different teachers observing the same individual report similar findings on a rating scale of adolescent's emotional and behavioral adjustment, (Canivez et al., 2002). Another study centered on interrater reliability (Supovitz et al., 1997) found that classroom teachers and external teachers rating language arts assessment portfolios assigned consistent ratings for the same students.

Along similar lines, Nickerson et al.'s (2001) research entailed special and general education teachers rating children with emotional issues, and general education teachers independently rating the behavior of matched control children. The researchers argued that small interrater reliability coefficients for behavior rating scales are generally problematic. The results of the study showed that interrater reliability were higher for the general education participants than for the participants with emotional issues. From these findings it is legitimate to use different teacher raters prior to and following the middle school transition.

Integration into Social Network: Affiliations and Adjustment

As children progress toward early adolescence over 30% of their social exchanges are conducted in groups recognized as social networks with their peers (Cairns, Cairns, Neckerman, Gest, & Garipey, 1988; Ellis & Zarbatany, 2007; Gifford-Smith & Brownell, 2002). Children choose to affiliate, engage in activities, and pass time with their peer groups (Cairns et al., 1988). The regular exchanges and shared activities in conjunction with interpersonal bonds may result in the intense socializing control that children's networks hold in the context of the classroom (Kinderman, 1993). In early adolescence children are part of a distinct social world of their peers (Gifford-Smith & Brownell, 2002). Social network experiences in particular offer unique and significant contexts for development (Gest, Farmer,

Cairns, & Xie, 2003). Thus, social networks are crucial for comprehending a distinct affiliation from within the greater relational context. It is the element of integration into the social network system of groups of individuals within the networks that makes social networks so fundamental to an understanding of the relational aspects of adolescent interactions within school.

In view of these issues, the characteristics of social networks—particularly the status of groups within the larger network system — make it important to consider aspects of adolescents’ integration within the larger social network that are associated with overall adjustment.

Relational nature of integration into social networks. The term social network applies to subsets of individuals who discerningly associate with each other (Cairns et al., 1988). Also referred to as peer groups, social networks reflect the social interactions that students and groups of students experience within a particular social setting such as school or classrooms (Cairns, Leung, Buchanan, & Cairns, 1995; Cairns et al., 1988). Peer groups embedded within the larger social system (e.g., grade or classroom) may consist of three or more associates who normally spend time together in a common context with established customs (Ellis & Zarbatany, 2007). Not all children have a network affiliation. These individuals are recognized as isolates (Farmer, Rodkin, Van Acker, Pearl, & Rodkin, 1999). Social networks

tend to be established based on shared characteristics such as closeness, racial background and gender, as well as behaviors and interests (Cairns et al., 1998). Early adolescents' peer group affiliations are not defined solely by individuals' perceptions of their affiliations, but rather, by the consensus of the group. That is, individuals' associations are common knowledge (Kinderman, 1998). The process of social network identification, social cognitive mapping (Cairns et al., 1998; Farmer et al., 1999) involves multiple individuals reporting on existing affiliations. Thus, children who are reported to have affiliations actually have these affiliations; they are actually embedded within the social network (school/ classroom) as confirmed by other members of the school.

Network centrality. Network centrality is defined as the extent to which a group is core within the larger social setting relative to other groups (Farmer & Rodkin, 1996). There are three levels of centrality which groups may attain: *Nuclear, secondary, and peripheral* centrality. The term *nuclear* centrality signifies peer groups that receive a high number of nominations in relation to other peer groups within the classroom (Farmer & Rodkin, 1996; Gest, Graham-Bermann, & Hartup, 2001). *Nuclear* groups are core within the social structure of the classroom relative to other groups in the network; they comprise members who obtain the highest quantity of nominations. *Nuclear* groups retain social prominence (Cairns et al., 1995).

Secondary centrality applies to peer groups that obtain an average number of nominations in comparison to other peer groups within the network; secondary groups consist of students that obtain a high quantity of nominations as well as students that obtain an average amount of nominations. *Peripheral* centrality relates to peer groups that attain a minimal amount of nominations in comparison to other peer groups within the network and comprise members that attain low quantities of nominations. Ellis & Zarbatany (2007) specified that *nuclear* groups set the tone and standards within the larger peer group. Conceptually, peer groups that have a high level of centrality by and large proffer benefits such as respect and acknowledgement, interactions and relationships, and resources; whereas groups recognized as holding low centrality do not offer such benefits (Ellis et al., 2007; Gest et al., 2001).

Network centrality is determined from respondents' aggregated nominations and a constructed social map (derived from the aggregated nominations) of the classroom's social structure (Farmer & Rodkin, 1996). The social cognitive map (SCM) procedure identifies social networks within the larger network of the classroom. Students are asked if there are individuals who affiliate with each other as well as to name students who spend time together on a regular basis. Subsequently, the aggregations are used to determine groups and social prominence of group. The social cognitive map provides

information essential for tapping into actual groups, the makeup of social networks such as size, number, composition, and relation to each other and the network as a whole, and shared influences (Cairns, Xie, & Leung, 1998). Because network centrality is based on the number of times that students and their affiliates are identified as members of peer groups, these measures denote social prominence rather than likeability.

Integration into the social network: Centrality and adjustment.

Events that occur in peer networks influence members' development and performance in probably all aspects of their lives, including school (Gifford-Smith & Brownell, 2002). Within school, features of network membership are related to social, behavioral, and academic adjustment. The importance of peer group centrality has been empirically examined (Ellis & Zabatany, 2007; Farmer & Rodkin, 1996). Such work has demonstrated that *nuclear* children with core peer group membership have certain characteristics including positive qualities like leadership, diligence, and supportiveness (Ellis & Zabatany, 2007; Farmer & Rodkin, 1996; Gest et al., 2001). One study centered on network centrality, (Farmer & Rodkin, 1996) examined the social status of each peer group in relation to all other peer groups in the network. The results provided evidence in support of the association between nuclear centrality and social, behavioral, and academic adjustment. Students in *nuclear* groups were more apt to

experience positive adjustment, being leaders, diligent and academic, popular, and supportive. Furthermore, the research established that disruptive girls were more likely to belong to *peripheral* groups whereas disruptive boys were more prone to be in *nuclear* groups. These findings suggest a need to consider network centrality as a factor in adjustment, and possible differences in relationships for girls versus boys, and position as these are associated with overall adjustment.

Research by Ellis and Zarbatany (2007) dealt with the status of peer group affiliation as a moderator of preadolescents and adolescents' socialization of their behaviors and exchanges. The study showed that group centrality inflated group socialization effects on prosocial outcomes. Group centrality was associated with positive change in behavior, specifically for activities that facilitated preservation of group status such as prosocial activities. According to Ellis and Zarbatany (2007), the results imply that the influence of groups on students' behavior depends on group centrality within the greater peer context. Given the social impact of peer groups within the larger peer group on the character of members it is crucial to look at the relational aspects of early adolescents' integration into social networks in terms of centrality of affiliation.

Other research related to network centrality was undertaken by Gest et al. (2001). This study focused on peer experience relative to

distinctive aspects of network centrality, and reported a positive correlation between network centrality and indicators of social adjustment such as prosocial peer leadership and athletic skill. As well, network centrality accounted for unique variance in social activity including leadership and prosocial ability beyond that accounted for by sociometric indicators. The outcome of this study is significant as network centrality, which is not based on likeability, can positively or negatively influence children's activities. In contexts in which groups holding *nuclear* centrality exert positive influence on socialization processes, positive social outcomes may result within the context of school. In contrast, in situations in which core groups exert negative influences on socialization processes, negative social adjustment may result. Thus, retaining centrality (i.e., core visibility) in the social context of the classroom could afford opportunities for prosocial or antisocial leadership (Gest et al., 2001) but more generally, has implications for behavioral, social, and academic school adjustment.

In addition to positive traits, there are qualities considered negative that *nuclear* members of core groups may have including disruptive or aggressive behaviors (Farmer et al., 1999). In this study, children recognized as antisocial or difficult were affiliated with *nuclear* peer groups within the social organization just as students who were seen as having positive qualities and engaging in prosocial behaviors. This suggests that membership in nuclear networks is not

solely dependent on model behavior. Therefore, it is important to examine how group centrality is related to adjustment.

Integration into the social network: Group popularity and adjustment. Social networks consist of members who are similar along many dimensions such as status (Cairns et al., 1998). Overall group composition and characteristics have been found to be relevant to individual adjustment as the groups into which members are socially integrated impacts members' insights and values (Cairns et al., 1998; Kinderman, 1998; Ryan, 2001). One quality of group membership recognized as significant is the popularity of group members. Distinct from centrality, popularity can be used as a descriptive term for groups based on the popularity of individual members of the group (Lease et al., 2002; Wentzel, 2003). Children perceived as popular characteristically appear to be polite and well mannered, do not force others to strive toward their personal social objectives, are self-confident, and have sound leadership qualities. Equally important, members of popular peer groups are measured as highly popular and seem to hold positions at the top of the social hierarchy. Perceived popularity is linked as well with dominance, aggression, and being snobbish; it is also related to peer nominations of admiration, leadership, and social strength (Cairns, et al., 1995).

Peer groups have been defined based on the popularity of their group membership by classifying the group in terms of the proportions

of members deemed popular by peer or teacher ratings (Farmer, Estell, O'Neal, & Cairns, 2003). Empirical research (Farmer et al., 2003) has established four group types including *zero popular*, *non-popular*, *popular*, and *mixed popular*. Groups that are classified as *zero popular* include no popular members whereas *non-popular* groups comprise 1 or 2 popular members, but over 50% of the members are non-popular. *Mixed popular* groups include at least 2 popular and 2 non-popular members. *Popular* groups comprise 1 or 2 non-popular members, but more than half the members are popular. Research by Farmer et al. (2003) is important to the current study as it establishes that groups can be categorized into four levels of popularity; also, there is a relationship between membership in popular peer groups and adjustment. Groups recognized as popular comprised members with specific traits. These qualities include: having leadership abilities, being socially competent individuals, and associating with other individuals with similar characteristics. As well, many adolescents belonging to groups characterized as popular based on the popularity of their members, were found to have both positive and negative characteristics. Regardless of characteristics of the members of popular peer groups the study demonstrated that adjustment is strongly linked to the degree of popularity of the peer group in which one is integrated.

In another study with a longitudinal design, Sabongui et al. (1998) found that if one was associated with a peer group that was socially popular, one's social status would improve. Results from this study indicate that children opted to associate with popular peers, they selected developmental contexts that were apt to increase their popularity among their peers. What's more, the characteristics of the members of popular peer groups were significant to children's academic development. Explicitly, children who elected to become members of peer groups identified as popular that comprised members who valued academic pursuits, selected developmental conditions that were likely to foster their own academic development. Other research focused on early adolescents has examined the connection between social dominance and academic adjustment (Keifer & Ryan, 2008). This study, which followed peer groups employing a longitudinal design addressed how group character (e.g., goals linked to early adolescents' desire for social power and popularity) was associated with adjustment. According to Keifer and Ryan (2008), social assertiveness objectives are linked to academic adjustment by means of social behaviors and by the nature of the social relations they support. The study demonstrated that group level negative behaviors could be negatively related to academic adjustment. The research also established gender differences; male students showed higher levels of social dominance over their female peers. Also relevant, findings

illustrated that social dominance objectives such as popularity goals of the network generally were not related to negative academic adjustment. In short, this study established that some aspects of group character such as goals of the group emerging from the aspiration for social dominance are associated with adjustment.

Together, these studies demonstrate the complexity of adolescents' social networks as well as the intricate aspects of social relationships within peer groups. The complexity is made explicit when consideration is given to the various features of social networks specifically, group centrality relative to social standing and group popularity, as well as the nature of peer groups. Considering these issues, it is essential to examine the relational facets of integration into social networks including group popularity are associated with adjustment within the context of a learning community (i.e. middle school). Since membership within core and popular groups affords members access to resources, interactions with students perceived as highly popular conceptually would be linked to positive adjustment (Ellis et al., 2007; Gest et al., 2001; Wentzel, 2003).

Affective Ties and Adjustment

The concept of students experiencing affective ties to the school context has been defined as a *sense of belonging* (Goodenow, 1993). Sense of belonging is a primary facet of the school relational

context that is associated with the psychological, academic, and social adjustment that early adolescents experience. Sense of school belonging is defined as a perception held by individuals that they are supported, appreciated, admired, and well regarded by others within their school (Goodenow, 1993; Osterman, 2000). It is a feeling of personal connectedness that involves believing that one makes a valuable contribution to and is a significant part of the daily events, customs, and routine in the school setting (Goodenow, 1993; Newman, Lohman, & Newman, 2007). Belongingness entails an understanding by members of the group that members are important to each other and that the needs of every individual will be met (Osterman, 2000). Conceptually, sense of belonging is recognized as a basic need that is crucial to positive adjustment (Osterman, 2000; Newman et al., 2007). When this basic need is not met— that is when a sense of school belonging is minimal among adolescents— development is impaired; adolescents experience isolation and can develop feelings of disaffection and perform poorly.

Belonging as an indicator of the relational context. Sense of school belonging is theorized to reflect diverse interpersonal relationships and experiences within the school (Osterman, 2000). The quality of different interactions with others in the environment determines ensuing relationships (Roseth, Johnson, & Johnson, 2008). Adolescents may experience positive peer relations while others may

have negative relationships with peers and others within the school context as evidenced by their sense of belonging (Newman et al., 2007; Roseth, Johnson, & Johnson, 2008). In support of this, Valiente, Lemery-Chalfant, Swanson and Reiser (2008) posited that social inclusion is fostered within the classroom which in turn facilitates successful interpersonal relations when individuals experience positive social acceptance by peers. Aspects of the social context determine whether or not individuals develop affective ties thereby experiencing a sense of belonging. Students who experience rejection are apt to exhibit anxiety and avoidance of school; while, students that experience acceptance tend to experience belongingness (Newman et al, 2007; Osterman, 2000). When students develop affective ties they experience a sense of belonging, this perception manifests in social exchanges that are both pro-social and collaborative (Baker, 1998).

Empirical findings support the idea that school belonging reflects students' interpersonal experiences. Nichols (2008) investigated students' perceptions of their sense of belonging in both their current and previous school settings. The research demonstrated that 60 % of the middle school students in the study were partial to their prior school because of the nature of the interpersonal relationships they experienced within that specific context. Explicitly, students' perception of belongingness was due to their relationships with peers and adults. With regard to their current school, 67% of the

students attributed their sense of belonging to the nature of interpersonal relationships experienced. Students reported that individuals were considerate, everyone knew one another, they felt integrated, had many friends, as well as felt they were a part of the community. In relation to their peers, positive sense of belonging was described by whether or not they felt they were appreciated, had conflicts, or had romantic relations that met with approval by peers. Hamm and Faircloth (2005a) speculated that the capacity to depend on other individuals in the community for assistance and encouragement is a crucial element to advancing a sense of belonging based on their finding of a relationship between peer support and early adolescents' sense of belonging in the classroom. Additionally, the results of their study revealed that students who started the year with a more positive perception of belonging were recognized by other adolescents as tutors and work buddies, perhaps reflecting their social integration into the classroom.

Results of a different study indicated that belongingness reflects the experience of friendship within the school setting. Hamm and Faircloth (2005b) reported that adolescents felt that friendships were vital for realizing a sense of belonging within the context of school. As well, they established that there were four components of friendship that reliably supported a sense of belonging: consistent partnership, closeness, augmentation of values, and comradeship.

These components are relevant because accessibility to resources that can be shared, assistance from other individuals who understand one's needs, satisfaction from shared values and engaging in mutual interests, and the ability to rely on others are aspects of relational contexts that foster a sense of belonging in children within school.

Also relevant to sense of belonging as an indicator of the relational context of the school, Freeman, Anderman, and Jensen (2007) examined students' sense of belonging at both the classroom and school levels. Findings indicated that students' sense of belonging was an outcome of their relational experiences within the context of the classroom. Expressly, students' sense of belonging was significantly and positively predicted by students' perception of social approval and recognition by others. Thus, when students perceived that they were supported, respected, and could share their ideas, they developed affective ties.

Anderman (2003) specified that students' sense of belonging is an outcome of social exchanges within that context. Relevant and demonstrative of belonging as a meaningful indicator of students' experience of the school relational context, Anderman's (2003) study focused on school belonging as well as the academic and social perceptions of early adolescents. The research illustrated that as students progressed through middle school their sense of belonging diminished. However, in cases in which sixth grade students were

encouraged to show consideration for other students a lower drop in school belonging across time was predicted. In relation to the proposed study, sixth grade students may experience different levels of school belonging based on their perceptions of their previous relational experiences in school.

Taken together, these studies suggest that sense of school belonging reflects early adolescents' sense of their integration into and acceptance within the context of the school. Thus, students will strive to incorporate themselves into their environment to fulfill their basic need to belong. Adolescents' integration within the setting is based on their perception of the quality of the interpersonal relationships that they experience. For instance, positive recognition by peers, support from peers, a sense of being valued, as well as support from teachers through their fairness and supportiveness are all components that engender the sense of school belonging.

Relevance of belonging to adjustment. Conceptually, having a sense of belonging to school is fundamental to adolescents' school adjustment as it satisfies their desire to be connected to other individuals (Osterman, 2000). For example, sense of belonging facilitates student impetus, learning, and commitment to academic success (Booker, 2006; Newman et al., 2007; Roseth et al., 2008). Several studies offer empirical support for the idea that a sense of belonging is related to more positive adjustment in multiple domains

of adjustment. For instance, in a cross sectional design Pittman and Richmond (2007) reported that sense of belonging predicted adjustment in terms of recent grades, academic aptitude, and self-esteem. In another study, Anderman (2003) examined the change in students' sense of belonging in relation to grade point average, motivation, and teachers' encouragement of shared and widespread respect in classes at three time points over the sixth and seventh grades. The results of the study are significant to the current work in several ways. As students progressed through middle school (specifically from the spring of sixth through the spring of seventh grade) they felt that they were less connected and experienced a reduced level of acceptance from others in that context. With regard to the present study this finding taken with evidence of a relationship between belonging and motivation would suggest that a decline in individuals' sense of belonging would negatively influence adjustment. In a different study, Anderman (2002) reported that perceptions of school belonging were positively related to academic achievement. In relation to the current study, this would suggest that the higher the sense of school belonging the higher academic achievement.

Connecting sense of belonging to social and behavioral adjustment is theoretically proposed, but the relationship has received little empirical consideration. Nevertheless, the studies referenced

support the idea that a sense of belonging is a meaningful facet of the school relational context, and predictive of its positive association with social, behavioral, and academic adjustment. Given this, it is important to examine students' sense of belonging within the relational contexts in which students are embedded that support the achievement, behavioral, and social aspects of adjustment.

Emotional Risk and Adjustment

A final component of the school relational context concerns students' perceptions of emotional safety or risk within the context of school. Emotional risk is an element of the school relational context that reflects the psychological well-being adolescents experience within school. It may be defined as an individual's perception of experiencing a secure environment due to support or having a sense of insecurity due to a lack of support and encouragement within the context of school (Hamm & Faircloth, 2005a). Thus, participation within a school that provides encouragement diminishes anxiety just as being prevented from having experiences that are secure and accommodating have extensive outcomes that are harmful.

Relevant to the present study with regard to emotional risk — the early phase of adolescence as a rule is one of the most difficult points of development (Bukowski, Hoza, & Boivin, 1993). At this phase the character of relationships with others varies as youth start to operate within multifarious new contexts. Some of the building blocks

of these changes, the founding of good relationships with peers and developing an awareness of emotional security become progressively vital. Prior to early adolescence students know that good performance owing to hard work is greatly valued by adults and that they are likely to be commended for such effort (Bukowski, Hoza, & Boivin, 1993; Juvonen, 2000; Juvonen & Murdock, 1995).

Correspondingly, by early adolescence as children strive to become more autonomous they become aware that their peers associate effort with lower levels of intellect. At this point of their development young adolescents are preoccupied with how they are perceived by other individuals (Juvonen, 2000). For that reason, they try to construct an image of themselves as having high ability and being confident (Juvonen & Murdock, 1995). Adolescents work hard to become skilled at using strategies that set them apart so that they secure social approval. This support (i.e. the social endorsement gained) influences responses that are affective in nature and creates an emotionally secure school context (Juvonen, 2000; Juvonen & Murdock, 1995). This is fundamental to positive adolescent adjustment; adolescents should positively engage with others socially, behaviorally, and academically when they perceive conditions of emotional risk to be insignificant. From a conceptual standpoint, students tend to promote themselves differently to their peers than to others within the context of school in order to obtain positive

responses. This is important because adolescents at this time in the developmental trajectory care about what their peers think. Thus, from a theoretical standpoint it would seem that when children perceive emotionally risky conditions within the context of school this perception influences their social, behavioral, and academic adjustment. Accordingly, it is crucial to examine emotional risk as part of the relational context and its association with adjustment.

Emotional risk associated with different facets of adjustment.

Theoretically, it is understood that when individuals do not experience social settings that are secure and supportive there can be far-reaching psychological and social problems (Osterman, 2000). Explicitly, young adolescents at the middle school level frequently develop feelings of disaffection for the school environment (Goodenow, 1993; Hamm and Faircloth, 2005a; Juvonen, Nishina, & Graham, 2000; Murdock, 1999). Furthermore, the quality of communication and social interaction influences students' development of confidence and shared respect (Osterman, 2000). In contexts in which support is proffered and students can freely express their views students tend to develop a sense of respect for others, experience a sense of unity, come to believe that they deserve respect, and feel secure within such contexts. Moreover, in contexts where adolescents do not experience genial relations with peers or experience a sense of well-being they are likely to exhibit social deficits and emotional troubles in later life. A

study focused on identifying both risk and protective factors that impact adolescents' emotional wellbeing established that perceived student intolerance was associated with emotional risk within the context of school (Resnick et al., 1997).

In relation, it is fundamental for adolescents to experience nominal emotional risk as they interrelate with others in the community as this fosters a sense of security which promotes positive adjustment (Hamm & Faircloth, 2005a). When faced with the stress of agonizing over appearing too intelligent or engaging in class activities because of possible derision by their peers, adolescents may stop participating in class. Given this, it is important to examine adolescents' sense of emotional risky situations based on their understandings of their interactions with their peers as emotionally risky in school.

Empirical research focused on differences between grade levels in the value of effort pertaining to adolescents' self-protection strategies was carried out by Juvonen and Murdock (1995). The researchers examined and evaluated issues that support conditions of emotional risk, finding that young adolescents endeavored to minimize their efforts toward academic competence when interacting with peers. Early adolescents opted not to work diligently or demonstrate that they did, as they preferred to avoid experiencing peer rejection since young adolescents generally adopt a negative view of effort. The applicability of this research to the present study emerges through the conditions of

perceived emotional risk adolescents experienced within the classroom context. As previously indicated during early peers become the most important others in their lives and adolescents can be obsessed with how they are viewed by peers. This suggests that when adolescents perceive their school or classroom as emotionally risky they may act in ways to suppress their academic success. Adolescents respond in ways that allow them to save face.

In another study, Juvonen and Murdock (1993) focused on students' understanding of how they are perceived with regard to achievement outcomes and effort by educators and their peers. Adolescents believed that peers' generally viewed effort as related to lower intellectual ability which was associated with popularity. Furthermore, adolescents were aware that teachers rewarded effort. As a result, adolescents modified their explanations for success or lack of based on the audience. These findings are crucial to the current investigation as they highlight that adolescents' perception of the school or classroom climate as an emotionally risky condition could influence academic, behavioral, and social interaction with others within that environment. Therefore, it is important to examine the social climate within the context of the classroom in relation to the existing emotionally risky conditions as exerted and avoided by peers.

Adjustment in Appalachian Communities

The current study is focused on a sample of youth from two small towns in Appalachia. Some of the constructs of interest in the present investigation— social networks, sense of belonging, and adjustment— have been examined in samples of adolescents in rural small towns, as well as in samples of Appalachian children. Research focused on rural communities including Appalachia has established the importance of social networks; this signifies that the relational contexts within rural Appalachian communities play a vital role in shaping young people (Crockett et al. 2000; Farmer et al., 2007; Hamm & Dadisman, 2009). Appalachian adolescents develop a sense of belonging to community because of the intense social networks to which they belong; also, they develop affective ties to community because these networks comprise individuals of different ages and because sense of camaraderie and kinship are fostered within these social networks (Crockett, 2000). The relational context serves as a resource that early adolescents can draw upon in accomplishing their goals within school contexts. Social assets are contingent upon strong connections with others in school and throughout the community (Crockett, 2000). These associations create a structure of time-honored customs, shared commitment, and resources that foster developmental environments that are supportive for adolescents. And so, it can be

argued that early adolescents in Appalachia are particularly reliant on the relational context for their adjustment.

Another feature of rural communities is that school settings generally are understaffed (Crockett et al., 2000). For this reason, individuals in schools assume multiple roles, adolescents are recruited to help, and they are encouraged and given more responsibility which builds their confidence. Given this, adolescents in many rural communities are apt to play a significant part in their schools and communities, which may lead to gains to adolescents' emotional and psychological well-being. Expressly, adjustment is facilitated by community ties developed through adolescents' active participation in school undertakings. Young people in small towns also benefit by having a bigger group of peers from which to choose, the capacity to create smaller peer groups, and opportunities to develop social skills (Crockett et al., 2000). Given the benefits derived from tightly woven peer groups and strong bonds to community, it may be inferred that adolescents are likely to develop a sense of belonging and become more socially integrated thereby experiencing to some extent positive adjustment. The findings in the studies discussed such as lasting community ties, strong school involvement, and robust social networks, suggest that factors appear to be principally salient to Appalachian youth, yet their role on adjustment has not received much consideration.

Gender as Moderator

There is no empirical research expressly focused on overall adolescent adjustment that tests the extent to which boys and girls in the role of social integration, sense of belonging, and emotional risk to school adjustment. However, research related to adjustment, aggression, and peer affiliations demonstrate differences between male and female participants which suggest that gender may operate as a moderator with regard to the association between adjustment and relational aspects (i.e. social integration, sense of belonging, and emotional risk) entrenched within the relational context. Specifically, based on aspects of findings in the studies discussed it can be inferred that the effects of facets of the relational context on adjustment may be different for males and females.

In one study, Farmer, Estell, Leung, Trott, Bishop, and Cairns (2003) focused on early adolescent aggressive and popular group types in association with school drop out. The results of the study revealed a differential effect on school drop out by gender. The drop out rate for both aggressive and non-aggressive males was higher than aggressive and non-aggressive female students. In most group types female groups generally comprised more members than the male group counterparts.

In research regarding social associations of aggressive adolescents it was established that sociometric status was related to

having model behavioral configurations for boys but not for girls (Farmer et al., 2003). In addition, unlike girls, boys' behavioral configurations were not linked to the popularity categorization of their peer group. In this way, the data imply that gender could function as a moderator. Along these lines, the case can be made in the current study that the relationship between adolescent adjustment and perceived popularity may be different between male and female students.

Finally, an examination of peer persecution, psychological adjustment, and school performance by Juvonen, Nishina, and Graham (2000) revealed mean level gender differences such that females evidenced lower levels of sensing emotionally risky contexts compared with males. These results suggest that gender could function as a moderator with regard to the association between emotional risk and adjustment. Thus, it may be argued that there is a potential for moderation with regard to the association between emotional risk and adjustment may be more robust for girls compared with males.

Taken together, the results from these studies suggest that gender may operate as a moderator in relation to the association between adjustment and each of the relational factors social integration, sense of belonging, and emotional risk. Correspondingly, the current investigation also examines whether or not the relationship between overall adjustment and social integration, sense of belonging, and emotional risk is different between males and females.

CURRENT STUDY

The transition to middle school, difficult because of differences in school structure and educational expectations as compared to elementary school, occurs simultaneously with significant developmental and biological changes. The environmental change from elementary to middle school requires that early adolescents learn to navigate and become part of a new social structure which comprises a larger social network. Social network affiliations, feelings of belonging, and emotional risk are all relational experiences adolescents have within the context of school that are expected to predict adolescent social, behavioral, and academic adjustment to middle school. Moreover, exploring the association between adjustment and variables representative of the relational context necessitated the further step of assessing whether or not the relationship is different between males and females.

Hypotheses One

1. After controlling for the relevant 5th grade adjustment for the outcome (i.e. behavioral, academic, social adjustment)
 - a. there will be a positive relationship between social integration and 6th grade academic, behavioral, and social adjustment, such that students who are socially integrated within the network, measured by network centrality and popularity of network, will evidence favorable academic, behavioral, and social adjustment

b. there will be a positive relationship between students' sense of belonging and 6th grade academic, behavioral, and social adjustment, such that students who experience a greater sense of classroom belonging, will evidence favorable academic, behavioral, and social adjustment

c. there will be a negative relationship between the emotional risk students experience and their 6th grade academic, behavioral, and social adjustment such that the more emotional risk students perceive, the less favorable will be their academic, social, and behavioral adjustment at the end of the 6th grade year.

Conceptually, within the context of the middle school community there is a greater social network in which smaller networks operate and in which adolescents are socially integrated (Farmer, et al., 2002; Flanagan, et al, 2007). Affiliation in a group recognized as core (i.e. *nuclear* group in comparison to *secondary* or *peripheral* groups) advances one's status throughout the community (Farmer, et al., 2002). As well, students within core groups tend to be more diligent and academic, popular and supportive. In turn, social integration within a group recognized as popular that experiences social and academic success should foster positive adjustment (Farmer, et al., 2002; Flanagan, et al., 2007).

The affective ties that adolescents develop toward the school community depend on the frequency and quality of their social

interactions (Flanagan et al., 2007). When adolescents experience a sense of belonging this promotes a sense of security that cultivates a desire within them to engage and contribute to a better community (Flanagan, et al., 2007; Osterman, 2000). Thus, a sense of belonging should cultivate positive adjustment.

Theoretically, adolescents' perceptions of their school as an emotionally secure or risky environment would influence their social, behavioral, and academic adjustment. Explicitly, when adolescents feel a connection to others, believe that they are valued by other members of the community, and have confidence and a shared respect for and with others within the school context they experience a sense of security (emotional and physical; Juvonen, 2000; Juvonen, & Murdock, 1995). Thus, when adolescents experience support and negligible emotional risk for their efforts and contributions within classrooms throughout the school community this may be beneficial to overall adjustment (Hamm, & Faircloth, 2005a; Juvonen, 2000; Juvonen, & Murdock, 1995; & Osterman, 2000).

Hypothesis Two

2. After controlling for the pertinent 5th grade adjustment for the outcome (aggression, academic, popular), gender will moderate the relationship between a. integration in social networks and 6th grade academic, behavioral, and social adjustment such that girls will have a

stronger relationship between integration in a network and 6th grade adjustment than will boys

b. belonging and adjustment, such that girls will show a higher positive relationship between belonging and 6th grade academic, behavioral, and social adjustment than will boys

c. emotional risk and 6th grade academic, behavioral, and social adjustment such that boys will show a more strongly negative relationship between emotional risk and 6th grade adjustment than girls.

Empirical research focused on group characteristics and popularity in relation to integration into the network system, has established that gender moderated the effects of popularity goals on adjustment (Keifer & Ryan, 2008). Explicitly the effects of popularity goals on adjustment were different for African American girls than male students. Other research centered on aggressive children's relationship demonstrated that there were differences in membership in terms of quantity of members and the amount of different types of individuals that make up male and female groups (Farmer, et al., 2002).

For instance, aggressive female groups evidenced higher membership as well as more bright antisocial members than aggressive male groups.

Newman, et al. (2007) empirical research on peer group membership, sense of belonging, and behavior problems established that gender moderated the relationship between positive sense of belonging and behavior problems. Explicitly, the effects of positive sense of belonging on behavior problems were lower for male students than female students. Other research by Farmer, et al. (2003) on the social associations of aggressive adolescents established that there were gender differences in the level of acceptance based on adolescents' behavioral configurations. For example, fewer model boys were rejected in comparison to their female counterparts.

Although no research has been conducted regarding gender and moderation in relation to emotional risk, there is empirical evidence on gender differences upon which inferences can be made. Findings indicate gender differences in emotional risk and adjustment (Juvonen, Nishina, & Graham, 2000) such that boys evidenced higher levels of perceiving emotionally risky conditions compared with girls; which, in turn is robustly associated with adjustment. Given this, it is possible to infer that gender may moderate the relationship between perceptions of emotional risk and adjustment.

CHAPTER III

METHODS

The goal of the current study was to examine the relational aspects of adolescents' exchanges with others within middle school community. The means of accomplishing this objective in the current study involved examining adolescents' integration into the social network system, their sense of belonging, and their perceptions of emotional risk experienced at school in connection with adolescents' 6th grade social, behavioral, and academic adjustment. It was expected that adjustment at the end of 5th grade should be closely associated with 6th grade school adjustment. Given this, and that the interest in the study was in the effects of social context of the middle school transition year beyond initial levels of adjustment, fifth grade adjustment functioned as a control variable. In addition, because studies dealing with adjustment and aggression have illustrated that there are differences between males and females with regard to membership in aggressive groups and in relation to popular groups, the role of gender as a moderator of the effects of relational context variables on school adjustment was evaluated.

Participants

Selection and recruitment of participants. The data for the present study were derived from a larger pool based on a longitudinal research study that followed early adolescents from the spring of fifth grade through the spring of seventh grade. The participants were recruited from four public middle schools in two states in two small towns in the Appalachian region of the United States. Approximately 50% to 70% of the students within participating schools qualified for free or reduced meals.

The sample included 448 students of which 53% were female participants. The schools serve a predominantly White population (94%), and the majority (98 %) of the study's participants is White. Thus, the sample reflected the public schools attendance of the respective region and the general population in the participating schools in terms of ethnic composition.

Approximately 96% of the students had complete data on baseline (5th grade) measures while roughly 81% of those participants had end point data. This attrition resulted because these students did not go on to attend any of the middle schools that participated in the study. Since the goal of the study was to look at adolescent adjustment over the course of the 6th grade year, participants who were missing end point data were excluded because there was no data pertinent to 6th grade

adjustment for these students. Thus, the final sample included 342 students.

Procedure

As part of the research project, teachers and students completed surveys in the spring of 5th grade, and in both the fall and spring of the 6th grade year. The former rated participating students' social, behavioral, and academic adjustment. Students completed reports on their peers and on themselves, centered on academic, social, and behavioral domains of adjustment. The current study focused on data from students at the end of the fifth grade year as baseline measures and data from the spring semester of the sixth grade year as end point measures. The decision to use data from the spring of the sixth grade year rather than from the fall of the sixth grade year was based on the nature of the independent variables for the study. In early fall, adolescents would not have had enough time to develop a sense of the relational context— of themselves or to be peer-rated. At the beginning of the 6th grade year adolescents were beginning to cultivate new relationships and were becoming familiar with the characteristics of their peers. As well, adolescents were learning to navigate and acclimatize to their new environment with all its novel demands and were trying to assess whether or not they were developing a sense of security within the middle school environment (as supported in Hamm & Faircloth, 2005a). Adolescents would not have had sufficient

opportunities to develop a sense of belonging due to the short time spent in the 6th grade at the time of fall data collection. Over the course of the year adolescents would acquire insight into peers' receptiveness to their contributions to the classroom and to their own academic standing (Hamm & Faircloth, 2005a). Considering these issues, it would have been inopportune to incorporate fall data; adolescents needed time to experience and subsequently develop a sense of the relational context.

Measures

Specific variables from the larger study were chosen to reflect the constructs defined for this investigation, which focused on students' relational experiences in 6th grade and their social, behavioral, and academic adjustment at the end of 6th grade as seen in Figure 1.

Measures

- Dependent Variables (end of 6th grade)
- Teacher-rated aggression
- Teacher-rated academic competence
- Teacher-rated popularity
- Control Variables (end of 5th grade)
- Female
- Teacher-rated aggression
- Teacher-rated academic competence
- Teacher-rated popularity
- Predictors (relational variables)
- Sense of belonging
- emotional risk
- group centrality
- group popularity

Figure 1. Measures: Dependent, Control, and Predictor Variables.

Social, behavioral, and academic adjustment (dependent variables and baseline control variables). Social, behavioral, and academic adjustment was measured by components of the Interpersonal Competence Scale-Teacher (ICS-T). The ICS-T is an 18-item questionnaire which teachers completed for every participant within their respective classes. Every item calls for respondents to describe participants on a 7-point scale (e.g. good at spelling, good at math (achievement); gets in trouble, gets into fights, argues (aggressive)). The instrument can generate a total scale in cases where researchers utilize all items on the scale as indicators of adjustment. As well, the instrument can produce subscale scores that reflect specific domains of adjustment (e.g., aggressive, academic, Olympian, popular, affiliative) as determined by the researcher based on research goals. In the current study, specific subscale scores (aggressive, academic, and popular) based on teacher ratings at 5th grade were employed as the 5th grade control variables; these particular subscales were also used as rated by teachers at the end of 6th grade as the dependent variables in line with the goals of the research.

As a measure, the ICS-T scale reportedly is both reliable and valid. Cairns, Leung, Gest, and Cairns, (1995) and Farmer et al. (2009) reported that test-retest reliability with a three-week interval was modestly high (.80-.92), and the median test-retest correlations across the factors were .81 for girls and .87 for boys. Modestly strong one-

year coefficients were reported (.40 - .50). The ICS-T has also demonstrated convergent validity with direct observation, student records (such as grades and discipline reports), and peer nomination measures (Cairns & Cairns, 1994; Cairns, Leung, Buchanan, & Cairns, 1995; Farmer et al., 2003; Leung, 1996). Predictive validity over an 8-year period for adult adjustment has also been established (Cairns & Cairns, 1994; Mahoney, 2000).

Up to five subscales can be generated from the ICS-T. An average rating across the items associated with each subscale constitutes composite factor scores. Of relevance to the current study, the subscales include: Aggressive (comprising “always argues,” “gets in trouble,” and always fights”; Cronbach $\alpha = .72$), Popular (comprising “Popular with boys,” Popular with girls,” and “Lots of friends”; $\alpha = .81$), and Academic (comprising “good at math,” and good at spelling” $\alpha = .71$) measured at the spring prior to the 6th grade transition and at the end of the 6th grade year, respectively.

Social integration into network system. Much of early adolescents’ exchanges take place in peer groups recognized as social networks (Cairns et al., 1988; Ellis & Zarbatany, 2007; Gifford-Smith & Brownell, 2002). Two indicators of social integration into the network system were measured in the current study: group centrality and group popularity. The data sources for these two indicators were Social Cognitive Maps (SCM) and peer nominations of popularity.

The SCM method involves asking participants to identify, for their grade level, as many social networks in the social setting as they can. Participants are not limited to identifying only groups of which they are a member; they are not given lists of individuals in the network; and it is not mandatory to classify each member of the network into a social group. The SCM procedure identifies social networks within the larger network of the classroom or school. Specifically, the SCM system was developed by Cairns, Garipey, and Leung (1989) to identify peer group affiliations of individuals within a defined social setting (i.e., 6th grade). For the current study, following the procedures outlined by Farmer, Estell, Bishop, O’Neal, and Cairns (2003) employed in their study, participants were asked to identify from free recall and to list as many groups as they could think of in their school from the prompt “Are there some kids in your school who hang around together a lot? Who are they?” The information garnered from students’ responses was aggregated, using a software program developed by Leung (1998), to form a composite social cognitive map for each school. As a result of calculating the rate of recurrence of individuals’ nominations and examining the similarity between their patterns of co-nominations, adolescents’ social embeddedness within the network was identified (i.e. adolescents pattern of comparative frequency of associations with other network members). Specifically, the program constructed matrices, which included a recall matrix

generated by listing all the groups identified by every respondent, a co-occurrence matrix that illustrates all the groups formed, and a correlation matrix that shows whether or not someone belongs with a group.

The recall matrix summarized the information collected from respondents on the group membership of individuals in the network. Rows and columns were iteratively restructured in order to group persons who had shared affiliations. This provided an initial estimate of the social network configuration. In addition, the recall matrix afforded the identification of specific natural groups based on a rule of aggregation. Functional patterns emerged and individuals were reorganized into groups. Respondents ordinarily commit errors of omission in descriptions of the social networks; however they are not likely to make mistakes involving additions (Cairns et al., 1996). Succinctly, the recall matrix shows every group to which each child is nominated, each of the nominees, multiple memberships in different groups, and allows for interpretation of the information.

The quantification of the information in the recall matrix was then transformed into a second matrix (i.e. a co-occurrence matrix). Subsequently, every person was compared to every other person in his/her network, and cases of mutual group membership were tabularized. Every cell entry in the matrix represented the number of times across respondents that Individual one was named in the same

group as Individual one. Explicitly, each cell entry signified the quantity of instances that someone was named in the same group by multiple respondents. When co-occurrence frequencies were calculated (using the same method) for each pair of individuals in the group, a co-occurrence matrix that is symmetric (i.e. equal to its transpose) was generated. Simply put, the co-occurrence matrix basically allows for the identification of the groups that were formed. Information such as how many times an individual is nominated with other individuals in a group can be gleaned. The co-occurrence matrix allows researchers to interpret who are the core members in a group, core groups, and if core groups need to be split (e.g. if the group is bonded together by one or two students then those individuals are made members of both groups).

Subsequently, when the data were summarized in the form of correlations between person profiles of co-occurrence, the identification of sub-groups (i.e. smaller groups of individuals within the network with similar associations) was done by grouping the persons whose social affiliations' profiles were similar to those of other persons in the network. A cut off for similarity of $r \geq .40$ is adequate (Cairns et al., 1996). Persons who met this condition for similarity were then assigned to subgroups. Explicitly, the correlation matrix demonstrates how cases of different individuals correlate with

each other. The data based on the correlations allow one to interpret whether or not someone belongs with a group.

SCM procedures are widely used in studies of school social networks (e.g. Cairns, Cairns, Neckerman, Ferguson, & Garipey, 1989; Farmer & Cairns, 1991; Farmer & Hollowell, 1994; Gest, Farmer, Cairns, & Xie, 2003; Kinderman, 1993; Leung, 1996). Direct observation of social interactions has established the validity of data collected from social cognitive mapping procedures (Cairns, Perrin, & Cairns, 1985). A significant result from Cairns et al. (1985) investigation was that adolescents were observed to interact significantly and reliably more regularly with members of their SCM derived social groups. Longitudinal exploration has produced information regarding predictive validity of the composite social cognitive groups (Cairns et al., 1996). Adolescents are inclined to affiliate with the same types of groups over time. Individuals may change but, the types of individuals with whom an adolescent associates may be reasonably analogous.

With regard to reliability associated with research on group membership, Cairns et al. (1996) reported a high level of inter-respondent reliability among respondents from young adolescence through late adolescence. Cairns et al. (1985) reported a 96% concordance among students' ratings on students' perceptions of affiliations within their classrooms. This signifies that the SCM

reliably reports conformity among the majority of students within the specific setting with regard to individuals' network affiliation.

Differences among respondents occur when a group is not included in the free-recall descriptions. Test-retest reliability over 3-12 week periods ranged from .70 to .90 (Cairns & Cairns, 1994).

Network centrality was determined from the SCM procedure, from respondents' aggregated nominations and a constructed social map (derived from the aggregated nominations) of the classroom's or school's social structure (Farmer & Rodkin, 1996). Network centrality is the degree to which a group is considered core (i.e. groups that receive a high amount of peer nominations relative to other groups) within the larger social setting relative to other groups (Farmer & Rodkin, 1996). There are three levels of centrality which groups may attain: *nuclear*, *secondary*, and *peripheral*. The centrality index (CI) for each group is the average of the two persons within the group who receives the highest number of nominations from peers. Based on the CI cluster for all groups in the network, the status of each group is distinguished. *Nuclear* groups are groups that have a CI within the range greater than or equal to $(0.7 \times CI_h)$ where CI_h indicates the highest-ranking group in the network. *Secondary* centrality groups have a CI within the range defined by $> (0.3 \times CI_h)$ and $< (0.7 \times CI_h)$. *Low* centrality groups have a CI equal to or below $(0.3 \times CI_h)^3$. Members of groups which have more than 50% of their members

retaining the highest number of nominations in comparison to other groups were classified as nuclear and coded 1. *Secondary* groups which have 50% of their members maintaining an average number of nominations in comparison to other groups and *peripheral* groups with members that attain a minimal quantity of nominations in comparison to other groups were merged together (coded as 0). Support for the categorization and consequent coding was based on Farmer et al.'s (2009) conceptualization of popular group type into few and many.

Popularity of peer groups has been determined by the popularity of their group membership, by categorizing the group in terms of the proportions of members considered popular through peer ratings (Farmer, Estell, O'Neal, & Cairns, 2003). To accomplish this, an initial step involved determining, by peer nomination, the popularity of individual students. Adolescents were asked to identify from memory, no more than three peers who ideally match descriptors for specific items that were selected from among the items used in other peer assessment studies (Farmer & Rodkin, 1996; Farmer, Estell, Bishop, O'Neal, & Cairns, 2003). Children were told that they could nominate themselves as well as the same individual for more than one item. With regard to popularity, the following item was employed as it provides relevant information— *popular* (“Some kids are very popular with their peers”); that is (“Many classmates like to play with them or do things with them.”). With reference to reliability issues the

instrument previously demonstrated three-week test retest reliability with single items ranging from .72-.93. Peer nominations were scored by dividing the total amount of nominations participants obtained for every item on the instrument by the total quantity of possible nominators (all participants in school, class, or grade). The proportion scores were subsequently multiplied by 1000 to give more clarity to mean differences. The peer nomination factors were derived as a result of the mean of the proportion scores on the different items. Since the variable popularity was standardized within gender, participants were categorized as popular if their gender Z-score was greater than or equal to + .50. Participants who did not meet these criteria were classified as nonpopular.

Following the classification of participants (i.e. popular/non-popular), peer groups were defined based on the proportion of popular members in the group. Research (Farmer et al., 2009) has shown that group popularity can be discerned as two group types. For groups in which more than 50% of a group's members were popular, the groups were defined as popular and assigned a code of 1; for groups in which 50% or fewer of the group's members were popular, the groups were defined as non-popular, and assigned a code of 0.

Sense of belonging. A sense of school belonging is a belief held by individuals that they are supported, respected, accepted, and well regarded by others within their school (Goodenow, 1993; Osterman,

2000). The source for this construct is students' self-report of the Psychological Sense of School Membership-Brief scale (PSSM-Brief). The PSSM-Brief is a revision by Hagborg (1994) of an 18-item scale originally developed by Goodenow (1993). The PSSM-Brief is an 11-item scale that measures perceived acceptance, feelings of inclusion, respect, and encouragement for participation. Students were asked to respond to each of the 11 statements on a 5 point Likert-type scale (1 = completely false to 5 = completely true). The items' scores were then scored and divided by 11 to obtain an average item score. Reportedly, the PSSM-Brief has criterion validity (Hagborg, 1994; Wehlage, Rutter, Smith, Lesko, & Fernandez, 1989). The internal consistency was high with alphas of .85; the test-retest reliability set at a 4 week interval was moderate with $r = .95$.

Emotional risk. Emotional risk entails the psychological adjustment adolescents experience within school. It refers to individuals' sense of insecurity in the classroom because they experience a lack of support and encouragement within the environment (Hamm & Faircloth, 2005a). Emotional risk was measured by means of the emotional risk of participation scale (ERP devised by Hamm (2001)). Pilot testing of the scale was undertaken with a culturally diverse sample of adolescents in middle school. The ERP scale consists of six items that measure adolescents' belief of the riskiness of participating in class. Participants rated six responses

scaled from 1 = *strongly disagree* to 6 = *strongly agree*, following the prompt “If I give a wrong answer to a question in class, the following happens.” Specific items included “other students will laugh or make fun of me” and “other students will think that I am not smart.” Scale reliability coefficient was .75 at time 2 and comparable across both genders and cultural groups (Hamm & Faircloth, 2005a). The measure is scaled in such a way that beliefs of greater risk are more highly rated.

CHAPTER IV

RESULTS

Plan of Analyses

As part of the preliminary analysis prior to an examination of descriptive statistics, a comparison of the students dropped from versus the students retained in the sample on major variables at baseline was completed independent samples t-tests (all t-tests are two tailed). This was undertaken to ensure that adolescents dropped from the study and those retained for the study were similar with respect to variables relevant to the study. Means for these baseline variables including teacher-rated aggression, teacher-rated academic competence, teacher-rated popularity, sense of belonging, emotional risk, group centrality, and group popularity are illustrated in Table 1.

Table 1
A comparison of means between students retained in and those dropped from the study at baseline.

Variables	Students Retained		Students Dropped		Effect Size
	Mean	SD	Mean	SD	Cohen's <i>d</i>
1. Teacher-rated Aggression	4.95	1.80	4.24	1.89	0.30
2. Teacher-rated Academic Competence	5.52	1.24	4.81	1.36	0.46
3. Teacher-rated popularity	3.86	.754	3.54	.675	0.21
4. Sense of Belonging	3.78	.766	3.53	.697	0.21
5. Emotional Risk	3.73	.818	3.51	.686	0.19
6. Group Centrality	5.51	1.19	4.15	1.23	0.19
7. Group Popularity	2.18	2.06	1.87	.778	0.81

Results from the t-test of the baseline variable teacher-rated aggression demonstrated that there was a statistically significant difference between students retained in and dropped from the study; $t(414) = 3.1, p = .002$. With regard to the baseline variable teacher-rated academic competence, there was a statistically significant difference between students retained in the study and those dropped from the study $t(408) = 4.6, p < .001$; for teacher-rated popularity there was a statistically significant difference between students retained in and dropped from the study; $t(468) = 2.3, p = .021$. Analyses of the baseline indicators of adjustment revealed that they are all significantly different in ways that signify that the sample used represents children who are better adjusted. The results of the t-test for baseline variable sense of belonging illustrated that there was a statistically significant difference between students retained in the study and those dropped from the study $t(377) = 2.0, p = .046$. For the baseline relational variable emotional risk there was a statistically significant difference between students retained in the study and those dropped from the study $t(407) = 2.0, p = .044$. In relation to group centrality the analyses of the t-test indicated that there was no statistically significant difference between students retained in the study and those dropped from the study $t(199) = 1.4, p = .149$. For group popularity there was a statistically significant difference between students retained in the study and those dropped from the study $t(248) = 6.4, p < .001$.

Analyses of the relational variables suggest that the sample might be skewed slightly positive in terms of children's experience of the relational context. This signifies that adolescents who were retained in the study might be more socially integrated into the greater network system and experience a greater sense of belonging and so are more likely to experience positive adjustment.

Prior to the principal statistical analyses necessary for the current study, descriptive statistics entailing means, standard deviations, correlations, and measures of skewness and kurtosis were also examined.

The primary statistical analyses involved hierarchical linear regression. Use of this statistical procedure provided a test of how well 6th grade adjustment was predicted by social integration, sense of belonging, and emotional risk above and beyond the effects of prior year adjustment, as well as a test of whether or not gender functioned as a moderator of adjustment and each of the relational factors.

For the regression analyses, variables were entered sequentially in blocks. The first block included gender and other baseline control variables (e.g., teacher-rated aggression, teacher-rated academic competence, and teacher-rated popularity) for the dependent variable. In the second block, the primary factors (i.e. predictor variables), group centrality, group popularity, sense of belonging, and emotional risk were entered as main effects. The third block of

variables included interaction terms of each main effect variable by gender: gender by centrality, gender by popularity, gender by sense of belonging, and gender by emotional risk. This aspect of the analyses focused on the role of gender as a moderator variable, and entailed an analysis of whether or not the association between each predictor variable and 6th grade adjustment differed as a function of gender. Change in variance (R^2 change) was calculated for each block of independent variables. If the block accounted for significant variance in the dependent variable, then the coefficients for the variables within the block were examined to determine which independent variables were significant. Three sets of regression analyses were conducted because the dependent variable 6th grade adjustment was represented by three subscales from the ICS-T, which included teacher-rated aggression, teacher-rated academic competence, and teacher-rated popularity respectively.

Descriptive Statistics

To verify that the residuals were normally distributed, an examination of means and standard deviations, skewness and kurtosis were analyzed. Correlations among the predictors (relational variables), correlations between the control variables and the dependent variables (teacher-rated aggression, teacher-rated academic competence, and teacher-rated popularity) representing 6th grade adjustment, as well as correlations between the predictors and the

dependent variables (teacher-rated aggression, teacher-rated academic competence, and teacher-rated popularity) signifying 6th grade adjustment were completed. These correlations were examined first to confirm that the predictors (relational variables) were not too highly intercorrelated as multicollinearity would result in problems of instability in the regression models. Second, correlations were examined to verify that the association between the control variables and the dependent variables were moderate. This is important as moderate correlations allow the potential for the control variables to explain a portion of the variance in block one of the respective regression models, while allowing the predictors (i.e. relational variables) in block two of the respective regression models the potential to make unique and significant contributions to the variance. Third, the correlations were examined to confirm that there were associations between the predictors and the dependent variables. This information gave credibility to investigating the association between the predictors and the dependent variables. A lack of moderate correlations between these variables would make further analyses meaningless.

Analyses of the descriptive statistics including means, standard deviations, skewness, and kurtosis indicated that there were no extreme out-of-range values for the variables teacher-rated academic competence, teacher-rated aggression, teacher-rated popularity, sense

of belonging, and emotional risk. Furthermore, the results established that data for each variable in the different models were approximately normally distributed. An inspection of normal probability plots support the observation that the data come from fairly normal distributions. Means and standard deviations are reported in Table 2.

Table 2

Means and Standard Deviations of Dependent Variables and Predictors

Variables	Before Transition		After Transition	
	Mean	SD	Mean	SD
Teacher-Rated Aggression	2.43	1.52	2.48	1.51
Teacher-Rated Academic Competence	4.68	1.48	5.02	1.79
Teacher-Rated Popularity	4.62	1.26	5.04	1.33
Sense of Belonging	3.76	.745	3.76	.745
Emotional Risk	2.62	1.08	2.62	1.08

Note. Before transition: spring of 5th grade year.

After transition: spring of 6th grade year.

With regard to the correlational analyses, the first set of correlations focused on correlations among the predictors (relational variables) for the spring of 6th grade. An inspection of the correlation matrices displayed in Table 3 reveals fairly modest correlations among the relational variables. Since multicollinearity was not an issue, this signified that the data could be substantively interpreted; because the predictors did not lay claim to the same portion of variance in the dependent variables, each predictor should make reasonably unique contributions. Thus, the results should not be misleading. Also, the absence of multicollinearity should eliminate large standard errors which reduces the problem of wide confidence intervals or confidence intervals that include zero. Succinctly, because there are no concerns regarding multicollinearity the predictors should not yield the same type of information as they are distinct constructs.

Table 3

Correlations Among Predictors (Relational Variables).

	Variable	1	2	3	4
1	Sense of Belonging	–			
2	Emotional Risk	-0.47**	–		
3	Group Centrality	0.23**	-0.10	–	
4	Group Popularity	0.19**	-0.02	0.33**	–

** $p < .01$ (1 tailed).

The second set of correlations centered on the association between the baseline variables— teacher-rated aggression, teacher-rated academic competence, teacher-rated popularity—at the end of 5th grade and gender and the dependent variables—teacher-rated aggression, teacher-rated academic competence, and teacher-rated popularity—at the end of 6th grade. Information concerning these correlations can be found in Tables 4-6. Table 4 contains the correlations relevant to the aggression construct. The control variable female was moderately and negatively correlated with 6th grade teacher-rated aggression signifying that higher levels of behavioral adjustment are associated with being female. The control variable 5th grade teacher-rated aggression and 6th grade teacher-rated aggression were positively and fairly highly correlated indicating that previous behavioral adjustment predicts later behavioral adjustment. Table 5 contains the correlations relevant to the academic competence construct. There was a weak correlation between the control variable female and 6th grade teacher-rated academic competence. This signifies that academic competence is associated less with female than with male adolescents. The correlation between the control variable 5th grade teacher-rated academic competence and 6th grade teacher-rated academic competence was rather strong. However, it supports the idea that previous academic competence predicts later academic competence. Table 6 contains the correlations relevant to the

popularity construct. There was a moderately strong correlation between the control variable 5th grade teacher-rated popularity and 6th grade teacher-rated popularity. This supports the idea that previous social adjustment predicts later social adjustment. Overall, the moderately strong correlations between each of the control variables (teacher-rated aggression, teacher-rated academic competence, and teacher-rated popularity all at the end of 5th grade) excluding gender and the dependent variables support the idea that previous adjustment predicts later adjustment.

The third set of correlational analyses focused on associations among the relational variables and the outcome variables. Information regarding these correlations is illustrated in Tables 4-6. Table 4 has correlational information relevant to the aggression construct. The scale of the intercorrelations among two of the relational indices (sense of belonging and group popularity) was quite modest. Table 5 contains correlations relevant to the academic competence construct. The magnitude of the intercorrelations among the three relational indices (sense of belonging, group centrality, and group popularity) and 6th grade teacher-rated academic competence was modest. Table 6 contains correlations relevant to the popularity construct. Sense of belonging was moderately correlated with teacher-rated 6th grade popularity. The magnitude of the intercorrelations between the relational indices (group centrality and group popularity) and 6th grade

teacher-rated popularity were moderate. Examination of the correlations among the relational variables and the outcome variables established that the association between the variables was modest. This signifies that the predictors—relational variables—contain information about the dependent variables making it plausible to run the regression analyses.

Table 4

Correlations Among Control and Predictor Variables and Teacher-Rated Aggression (6th grade)

Variable	1.	2.	3.	4.	5.	6.	7.
1. Aggressive Factor 5 th Baseline	—						
2. Gender Baseline	-0.20***	—					
3. Aggressive Factor 6 th Predictor	0.53***	-0.31**	—				
4. Sense of Belonging	-0.31***	0.16*	0.16**	—			
5. Emotional Risk	0.10	-0.01*	0.04	-0.45***	—		
6. Group Centrality	-0.13	0.14	0.01	0.22***	-0.11	—	
7. Group Popularity	-0.21***	-0.01*	-0.17**	0.18***	-0.03	0.24***	—

* $p < .05$, ** $p < .01$, *** $p < .001$ (one-tailed).

Table 5

Correlations Among Control and Predictor Variables and Teacher-Rated Academic Competence (6th grade)

Variable	1.	2.	3.	4.	5.	6.	7.
1. Academic Competence 5 th Baseline	—						
2. Gender Baseline	0.18***	—					
3. Academic Competence 6 th Predictors	0.64***	0.09	—				
4. Sense of Belonging	0.21***	0.16	0.24***	—			
5. Emotional Risk	-0.07	-0.02	-0.02	-0.46***	—		
6. Group Centrality	0.26***	0.14*	0.25***	0.22***	-0.11	—	
7. Group Popularity	0.28***	-0.01	0.35***	0.18***	-0.03	0.24	—

* $p < .05$, ** $p < .01$, *** $p < .001$ (one-tailed).

Table 6

Correlations Among Control and Predictor Variables and Teacher-Rated Social Adjustment (6th grade)

Variable	1.	2.	3.	4.	5.	6.	7.
1. Popularity Factor 5 th Baseline	—						
2. Gender Baseline	0.09	—					
3. Popularity Factor 6 th Predictor	0.51***	-0.05	—				
4. Sense of Belonging	0.22***	0.16**	0.24***	—			
5. Emotional Risk	-0.08	-0.02	-0.09	-0.46***	—		
6. Group Centrality	0.36***	0.14*	0.25***	0.22***	-0.10	—	
7. Group Popular	0.41***	-0.01	0.83***	0.18***	-0.03***	0.24	—

* $p < .05$, ** $p < .01$, *** $p < .001$ (one-tailed).

Sixth Grade Adjustment and Relational Factors

Three separate regression analyses were conducted appropriate to the three dependent variables of behavioral adjustment, academic adjustment, and social adjustment measured at the end of 6th grade. A review of tolerance levels for the regression analyses showed that levels were greater than zero and that there were no issues with multicollinearity. All regression analyses included a model with interaction terms of each main effect variable by gender. For each dependent variable, results showed that the block containing the interaction terms did not account for significant variance as seen in Tables 7-8.

Relational context and behavioral adjustment. The results of the models that tested for a relationship between relational factors and teacher-rated aggression are reported in Table 7. Gender and 5th grade teacher-rated aggression were entered in the first block and accounted for a significant and moderate amount of 6th grade teacher-reported aggression (27%). In the second block, the relational factors were added to the model, including sense of belonging, group centrality, group popularity, and emotional risk. Roughly an added 6% of the variance in the model was explained by the addition of this block. This addition amounted to a significant contribution to the variance; an assessment of the coefficients for the relational variables in this block indicated that only the effect of sense of belonging was statistically

significant. The results revealed that after controlling for 5th grade teacher-rated aggression, sense of belonging is negatively related to aggression. This supports the idea that greater positive behavioral adjustment is manifest when students experience a greater sense of belonging at the end of sixth grade. In the third block, the interaction terms of each main effect variable with gender were added to the model, including sense of belonging by gender, emotional risk by gender, group centrality by gender, and group popularity by gender. This third block accounted for less than a 1% and non-significant change in variance in the model. Thus, this addition did not amount to a significant contribution to the variance.

Table 7.

Table 7: Hierarchical Linear Regression Analysis of 6th grade Adjustment— Teacher-rated Behavioral Adjustment.

Variable	Aggression		
	1	2	3
Aggression ^a	0.52***	0.48***	0.48***
Gender	-0.00	-0.00	0.26
Sense of belonging		-0.21***	-0.16***
Emotional Risk		-0.02	-0.01
Group Centrality		-0.07	0.01
Group Popularity		-0.09	-0.07
^b Gen*Seb			-0.25
^c Gen*Erisk			-0.02
^d Gen*grpcen			-0.09
^e Gen*grppop			-0.00
<i>Change in R²</i>	0.27***	0.06***	0.01
<i>Total Adjusted R²</i>	0.27	0.33	0.33
<i>F for change in R²</i>	64.92	7.89	0.60

Note. Standardized coefficients reported: * $p < .05$, ** $p < .01$, *** $p < .001$ (one-tailed).

^a Baseline measure.

^b Interaction effects: Gender by Sense of Belonging.

^c Interaction effects: Gender by Emotional Risk.

^d Interaction effects: Gender by Group Centrality.

^e Interaction effects: Gender by Group Popularity.

Relational context and academic adjustment. Results of the analyses regarding the relationship between relational factors and teacher-rated academic competence are reported in Table 8. Gender and 5th grade teacher-rated academic competence were both entered in block one as control variables. This block of variables accounted for a significant percentage of the variance (42%) in teacher-rated academic competence at the end of sixth grade. In block two, the relational factors sense of belonging, group centrality, group popularity, and emotional risk were entered into the equation, but as a block accounted for less than a 1% and non-significant change in variance in the model. The amount of variance associated with the control variables— particularly prior teacher-rated academic competence—was moderately high and might explain the lack of significance in the change in variance in block two with the addition of the relational variables. In the third block, the interaction terms of each main effect variable with gender were added to the model, including sense of belonging by gender, emotional risk by gender, group centrality by gender, and group popularity by gender. This third block accounted for less than a 1% and non-significant change in variance in the model. Thus, this addition did not amount to a significant contribution to the variance.

Table 8

Table 8: Hierarchical Linear Regression Analysis of 6th grade Adjustment— Teacher-rated Academic Adjustment

Variable	Academic Competence		
	1	2	3
Academic Competence ^a	0.62***	0.58***	0.58***
Gender	0.1	0.11	0.39
Sense of belonging		0.03	0.08
Emotional Risk		0.01	0.04
Group Centrality		0.08	0.10
Group Popularity		0.05	-0.02
^b Gen*Seb			-0.27
^c Gen*Erisk			-0.07
^d Gen*grpcen			-0.04
^e Gen*grppop			-0.12
<i>Change in R²</i>	0.42***	0.01	0.01
<i>Total Adjusted R²</i>	0.42	0.43	0.44
<i>F for change in R²</i>	123.16	1.68	0.79

*Note. Standardized coefficients reported: *p < .05, ** p < .01, *** p < .001 (one-tailed).*

^a Baseline measure.

^b Interaction effects: Gender by Sense of Belonging.

^c Interaction effects: Gender by Emotional Risk.

^d Interaction effects: Gender by Group Centrality.

^e Interaction effects: Gender by Group Popularity.

Relational context and social adjustment. The results of the third set of regression analyses that addressed the relationship between relational factors and teacher-rated popularity are reported in Table 9. In block one, approximately 27% of the variance was accounted for by the control variables of gender and teacher-rated popularity. The relational factors sense of belonging, group centrality, group popularity, and emotional risk were added to the equation as a subsequent block. The addition of this block of relational factors made a significant contribution to the variance in the model; roughly an additional 5% of the variance in the outcome was explained by the addition of this block. Examination of the coefficients associated with each relational variable indicated that group centrality was the only statistically significant predictor of teacher-rated popularity. This indicates that adolescents who experienced greater social adjustment at the end of the middle school transition year, signified by teacher-ratings of popularity, were those who demonstrated greater social integration into the larger network system. In the third block, the interaction terms of each main effect variable with gender were added to the model, including sense of belonging by gender, emotional risk by gender, group centrality by gender, and group popularity by gender. This third block accounted for less than a 2% and non-significant change in variance in the model. This addition did not amount to a significant contribution to the variance.

Table 9

Table 9: Hierarchical Linear Regression Analysis 6th grade Adjustment—Teacher-rated Social Adjustment

Variable	Popular		
	1	2	3
Popular ^a	0.51***	0.47***	0.47***
Gender	0.11	0.07	0.59
Sense of belonging		0.04	0.12
Emotional Risk		0.00	0.11
Group Centrality		0.23***	0.17***
Group Popularity		-0.03	0.06
^b Gen*Seb			-0.29
^c Gen*Erisk			-0.24
^d Gen*grpcen			-0.10
^e Gen*grppop			-0.16
<i>Change in R²</i>	0.27***	0.04***	0.02
<i>Total Adjusted R²</i>	0.27	0.32	0.34
<i>F for change in R²</i>	62.34	6.58	1.98

Note. Standardized coefficients reported: * $p < .05$, ** $p < .01$, *** $p < .001$ (one-tailed).

^a Baseline measure.

^b Interaction effects: Gender by Sense of Belonging.

^c Interaction effects: Gender by Emotional Risk.

^d Interaction effects: Gender by Group Centrality.

^e Interaction effects: Gender by Group Popularity.

In summary, the results revealed that the relational factor sense of belonging was significantly but negatively related to teacher-rated aggression. Similarly, the relational factor group centrality was significantly related to teacher-rated popularity. In contrast, none of the components of the relational contexts were significantly related to teacher-rated academic achievement. Also, there was no evidence that the relationship between facets of the relational context and sixth grade adjustment differed by gender.

CHAPTER V

DISCUSSION

Early adolescence is a complex phase of development that emerges at the same time that youth transition to middle school (Carnegie Council on Adolescent Development, 1989; Goodenow, 1993; Wenz-Gross, Siperstein, & Parker, 1997). Subsequent to the transition to middle school, young adolescents must cope with academic standards and teacher expectations that are higher than those previously experienced, within the elementary environment. Youth need to learn as well to deal with differences in classroom structures (Wenz-Gross, Siperstein, & Parker, 1997). The ecological change could strongly influence emerging developmental processes due to the significant academic and social changes (Rudolph, Lambert, Clark, & Kurlakowsky, 2001; Wenz-Gross, Siperstein, & Parker, 1997). The experiences adolescents have within middle school should cultivate individuals with the ability to learn, and the competence to hold themselves accountable for their actions (Carnegie Council on Adolescent Development, 1995; Carnegie Council on Adolescent Development, 1989; Eccles, Midgley, Wigfield, Buchanan, Reuman, Flanagan, & Mac Iver, 1993; Roeser, & Eccles, 1998). In view of that,

researchers have worked continuously to understand critical dynamics that support positive adjustment to middle school (Diehl, Lemerise, Caverly, Ramsay, & Roberts, 1998; Farmer, Irvin, Thompson, Hutchins, & Leung, 2006; Wentzel, Cadwell, & Barry, 2004, Zettergren, 2003).

Research concerning early adolescence has related the associations children have at school to facets of adjustment such as achievement and participation in school events (Wentzel, Caldwell, & Barry, 2004). School adjustment has been defined previously as academic achievement; however, in early adolescence, adjustment can be conceptualized in relation to children's academic, social, and behavioral adjustment (Farmer, et al., 2006). From a developmental science perspective, adolescents develop as an integrated whole instead of as distinct elements (e.g. psychologically, physically, socially, and behaviorally). These distinctive developmental features work together to influence each other as they shape patterns of adjustment.

Peer relationships in the school setting during early adolescence is fundamental in allowing youth to define and to come to terms with their inimitable nature as they progress developmentally (Brown, & Theobald, 1999; Gifford-Smith, & Brownell, 2003; Lonsbury et al., 1980). This is particularly relevant and significant to adjustment in Appalachian communities. Adolescents in this region

often do not have access to opportunities for social interactions outside of the school environment as many of the communities within the region are remote (D'Amico, et al., 1996). Youth may not have easy access to malls and other places where they can congregate to socialize outside the school setting. Thus, for many Appalachian youth particularly in rural settings, schools are likely to provide connections that are socially, culturally, and educationally essential to their adjustment (D'Amico, et al., 1996). Consequently, peer relationships and interactions in school can be viewed as significant because of limited options outside this setting.

Social interactions youth experience in middle school are quite distinct from their elementary school experiences. Early adolescents who attend middle schools are required to operate within larger peer networks that change regularly (Brown, & Theobald, 1999; Gifford-Smith, & Brownell, 2003; Wentzel et al., 2004). This occurs at a time when developmentally, peer relationships become quite important and assume more significance in shaping and accepting one's individuality. This signifies that adolescents are greatly influenced by the peer networks in which they are integrated or into which they seek to become integrated (Brown, & Theobald, 1999; Gifford-Smith, & Brownell, 2003). Accordingly, these experiences were hypothesized to be related to early adolescents' adjustment to middle school. In line with this concept, it was assumed that one approach to early

adolescents' adjustment given the complex aspects of the social setting of middle school and the multifaceted nature of adjustment was from a relational perspective.

Three elements of the school relational context were considered. Firstly, the element social network affiliation, was examined in terms of students' actual group-based relationships—specifically, adolescents' integration into the network system. Secondly, the component affective ties, was conceptualized as a sense of belonging and associated with students' sense of membership in the larger school context. Thirdly, the emotional risk was conceptualized as adolescents' perception of the larger school context in relation to emotional safety in classrooms and throughout school. Collectively, these relational components were proposed to contribute to overall adjustment during the middle school transition year. In connection to the relational context, studies have revealed that differences may exist between male and female students on factors symbolic of the relational perspective. Therefore, the issue of gender functioning as a moderator was given consideration. However, the results demonstrated that there were no interaction effects. The findings did not substantiate that the relationship between social, behavioral, and academic adjustment and social integration, sense of belonging, and emotional risk was different between males and females. This outcome may be a consequence of

the control variables pulling out so much of the variance in the models that it likely affected the potential for interaction effects.

The Relational Context

Social network affiliations, feelings of belonging, and emotional risk are all relational experiences adolescents have within school settings that were anticipated to predict youth's social, behavioral, and academic adjustment to middle school. In line with this, findings in the current investigation support the idea that the relational context matters to adjustment. Findings signified that two of the relational factors, sense of belonging and group centrality, are important to adolescents' behavioral and social adjustment respectively. These findings are important as they facilitate further insight into what is known of social and behavioral adjustment during the middle school transition.

Past research has established that adolescents' relational experiences contribute to positive adjustment to school (Anderman, 2003; Freeman, et al, 2007; Hamm and Faircloth, 2005a; Nichols, 2008). Findings from the current study extend these findings as they established that the relational construct sense of belonging is associated with positive behavioral adjustment and the relational construct group centrality is related to positive social adjustment. With this in mind, the following sections address how these two relational factors (sense of belonging and group popularity) respectively function

to support positive adjustment. In addition, potential reasons for why the relational factors of focus in the current study were not associated with academic adjustment. Finally, study limitations and suggestions for future research are discussed.

Function of Affective Ties on Aggression

Early adolescents have lasting needs that include a desire to experience a sense of value as human beings and to achieve significant membership in positive and productive groups (Carnegie Council on Adolescent Development, 1995). The relational nature of these experiences is understood to nurture positive adolescent adjustment (Carnegie Council on Adolescent Development, 1995; Carnegie Council on Adolescent Development, 1989). Researchers such as Hamm and Faircloth (2005a) established that the relational dynamic sense of belonging plays a part in fostering educational commitment and student accomplishment which are aspects of adjustment (i.e. academic). Similarly, much of the past research on belonging is connected to academic adjustment (e.g. Degelsmith, 2001; Hamm, & Faircloth, 2005b; Sanchez, Colon, & Esparza, 2005; Thor, 1999). However, the findings in the current investigation extend this work by establishing that sense of belonging is significantly related to positive behavioral adjustment. Based on this finding, it may be inferred that in conditions in which adolescents develop a greater sense of belonging within middle school they are more likely to experience positive

behavioral adjustment. This novel finding is supported in past research relating to the social developmental model which specifies that as adolescents experience high levels of social bonding with others who are prosocial, such activities hinder adolescent behaviors that are challenging (Ayers et al., 1999; Brown et al., 2005; Fleming, Catalano, Oxford, & Harachi, 2002; Mcfall, 2006). Explicitly, the social development model stipulates that children are socialized through processes a) that entail perceiving that there are chances to interact and engage in activities with others, b) in terms of the extent of their interactions and level of their participation, c) that necessitate the ability to contribute and interact, and d) with regard to the support they discern they receive as they participate and interact. Succinctly, based on the social development model it may be inferred that affective ties to school and ideals play a significant role in promoting behavioral adjustment which supports the current finding.

Thus, the social development model may account for why adolescents who experience a strong sense of belonging demonstrate positive behavioral adjustment within the context of school. Seeing that adolescents engaged in social interactions that allowed them to feel more connected, they became less likely to engage in aggressive behaviors which, resulted in positive behavioral adjustment.

Relating Integration and Social Standing

Inclusion and status are represented in terms of social network affiliations (McMillan & Chavis, 1986). Social networks are symbolic of the social interactions that groups of students experience throughout the school setting (Cairns, Leung, Buchanan, & Cairns, 1995; Cairns et al., 1988). Research has substantiated the idea that network centrality and popularity as components of social integration are associated with school adjustment (Estell et al., 2003). Specifically, membership in nuclear groups has been linked to academic achievement (Estell et al., 2008). The results of the current study established that there is an association between social integration and 6th grade social adjustment in the form of teacher-rated popularity. This indicates that adolescents who experience the greatest social adjustment at the end of the sixth grade were those who demonstrated greater integration into the greater network system. It maybe construed that adolescents who are more greatly integrated—as established by their membership in core groups—are accepted by and gain status in relation to their peers. However, not every member of groups with nuclear centrality on their own are considered to have nuclear centrality. It was their (i.e. non nuclear members) membership in groups with nuclear centrality that afforded them the opportunity to become more greatly integrated into the larger social network and experience positive social adjustment.

An additional possibility behind this finding is that these students in nuclear peer groups enjoyed benefits such as increased academic achievement (as supported by Estell, et al., 2003) due to the social exchanges they experience (e.g. peer tutoring; Kamps et al., 2009; Xu, Gelfer, Sielo, Filler, Perkins, 2008). Adolescents who are more fully integrated into the greater network system would profit from their membership in groups holding centrality as group members would work together and utilize members' various strengths and qualities (e.g. academically competency, popularity) to sustain group type and further advance status (as supported by McMillan & Chavis, 1986). Academically competent adolescents belonging to groups recognized as holding centrality who help their peers in academic pursuits are likely to be well regarded by these peers. Thus, it may be inferred that network centrality would predict popularity through enhanced academic competence as success facilitates group unification (as supported in research by Cairns, Garipey, Kindermann, & Leung, 1995; Farmer & Rodkin, 1996; Farmer, Xie, Cairns, & Hutchins, 2007 McMillan & Chavis, 1986).

In rural areas including Appalachia adolescents have limited choices outside the school context to develop peer relationships with non family members (supported by Crockett et al., 2000). Thus, peer relationships in school become very important, bonds are made stronger, values are shared, and adolescents have opportunities to

develop social skills. Given this, members of groups that hold centrality should experience positive social adjustment.

Achievement and Adjustment

Research has established that perceptions of school belonging are positively related to academic achievement (Degelsmith, 2001; Hamm, & Faircloth, 2005b; Sanchez, Colon, & Esparza, 2005; Thor, 1999) as well as facilitate student drive, learning, and dedication to academic accomplishment (Booker, 2006; Newman et al., 2007; Roseth et al., 2008). And so, while it was predicted that there would be an association between relational factors and academic adjustment the findings in the current study did not substantiate this theory. The lack of significance between relational factors and academic adjustment may be explained by the manner in which achievement was measured in the current study.

There are different ways of measuring academic competence including standardized tests, test scores, grades, teacher, observer, parent, and student self reports (Towers, et al., 2000). Researchers have specified that teachers have comprehensive information of children's social, behavioral, and academic competence within the school environment and can give objective ratings (Edl, Jones, & Estell, 2008; Pellegrini, Roseth et al., 2007; Towers, et al., 2000). Considering that teacher ratings are acceptable sources of data and that standardized test scores were not available and could not be used as a

complement to evaluate the academic aspect of 6th grade adjustment only teacher ratings were used in the current study. It might be possible that another method of evaluating academic competence might have brought about findings that were more favorable in the current study. In other studies that have found an association between sense of belonging and academic adjustment (e.g. Degelsmith, 2001; Hamm & Faircloth, 2005b), teacher-ratings have not been used.

In summary, these findings suggest that sense of belonging and group status are fundamental to key aspects of adolescent adjustment in middle school. These findings matter because they serve to further researchers and educators understanding of social and behavioral adjustment.

Limitations

The study has certain limitations which must be recognized. The first limitation deals with the issue of the study's generalizability. The study included participants from two small towns in the Appalachian region. Appalachia is recognized as a geographic region with a distinct developmental context (Ali & Saunders, 2006; Crockett et al., 2000; D'Amico, Matthes, Sankar, Merchant, & Zurita, 1996) and is vastly different from urban and suburban communities on a number of features. Appalachian school communities tend to be small with strong parental involvement in contrast to non Appalachian communities. For instance, the relational experiences which are

fundamental to adolescent adjustment (Crockett et al., 2000) are likely different from the relational experiences urban or suburban youth have within their communities. The differences in relational experiences might be associated with the differences in geography, in economic advantages, and in educational and employment opportunities. Geographically, Appalachian youth (especially those in remote areas) may not have easy access to malls or other places where adolescents gather to socialize as compared with their urban and suburban peers. And so, it might be inferred that Appalachian youth are then more likely to build stronger and longer lasting relationships with their peers in school and experience more positive school adjustment than their same age peers in urban communities. This makes it more difficult to generalize the findings to urban or suburban populations.

Also, within urban and suburban communities, there are more employment opportunities with many different professions. In contrast, employment opportunities and different types of professions within Appalachian communities are quite limited. These differences might be explained in part owing to the limited availability of higher education particularly in remote rural areas of Appalachia. These differences may play out in adolescents' adjustment in terms of student academic motivation and achievement. It might be the case that as educational and employment opportunities are limited in Appalachia, Appalachian adolescents may not understand the value in striving

toward academic competence (as supported by Ali & Saunders, 2006; D'Amico et al., 1996; Williams, 2005).

As well, schools in urban and suburban communities tend to be large with more students per teacher in each classroom compared with smaller class sizes in rural Appalachian communities. This is significant as the greater the number of students per teacher the less likely students are to become more socially integrated or develop affective ties and so evidence social and behavioral adjustment. Larger class sizes do not afford opportunities for teachers to promote learning conditions that foster a sense of connectivity; also adolescents in larger classrooms do not get sufficient opportunities to develop and practice positive social skills. Given these differences it would be difficult to generalize the current findings to urban or suburban populations.

Another aspect of diversity between Appalachian and urban/suburban youth is ethnic composition (Ali & Saunders, 2006; D'Amico et al., 1996; Williams, 2005). In urban communities in particular, there tends to be more ethnic and cultural diversity whereas Appalachian communities tend to be more homogenous. In contexts (e.g. the Appalachian) with more cultural and ethnic homogeneity there would be more opportunities for full integration into the greater network system throughout school. As adolescents become more fully integrated they experience more positive adjustment. Thus, ethnic and cultural differences between urban and Appalachian communities

would make it difficult to generalize the findings of the current study to urban or suburban populations (as supported by Mullen & Copper, 1994).

A second limitation of the study deals with the question of sixth grade as a transition year. It has been established that the move from elementary to middle school presents many challenges to 6th graders and so it is typically considered a transition year. Hence, the current study focused on a 6th grade sample. However, given the many challenges students face including constantly changing peer relations and group affiliations, different class structures, and changed teacher expectations, perhaps the transition and adaptation to middle school continues into the seventh grade. Consequently, it may have been more practical to examine the relational context of both sixth and seventh graders. (i.e. supported by research carried out by Lonsbury et al., 1980).

A third limitation noted for the study deals with a procedural issue. As part of the research project from which the sample was drawn for the current investigation, teachers and students completed surveys in the spring of 5th grade, and in both the fall and spring of the 6th grade year. The former rated participating students' social, behavioral, and academic adjustment. Students completed reports on their peers and on themselves, centered on academic, social, and behavioral domains of adjustment. However, data were not available

for standardized tests that might have yielded reliable and valid information about academic competence in one of the participating areas. On account of the lack of accessibility to the achievement data from standardized tests, this information could not be used which might have been a better source of data.

A final limitation of the study deals with the issue of sampling bias. Analyses of the data indicated that the data might be skewed in a slightly positive direction given the nature of the students dropped from the sample. These adolescents reported relational experiences that were less positive. This suggests that these adolescents dropped from the study represent children who were less socially integrated into the greater network system and less likely to experience a greater sense of belonging. Also, adolescents in the sample analyzed by and large were a bit better adjusted prior to the beginning of the sixth grade. This suggests that the children retained in the study were adolescents who should be predisposed to experience positive adjustment. The degree of the under representation was small so the sample was treated as an unbiased sample. However, the issue of sampling bias makes the results difficult to generalize to other populations, particularly in relation to children who struggle to do well in school in all adjustment outcomes. In spite of the concern about under representation, seeing that this was only a small proportion of the sample, it was treated as a fairly normal sample.

Conclusion

The findings on the whole are useful for education and research purposes. Future research can make use of the findings to further extend an understanding of the association between the relational context and positive adjustment. For instance, the relational contexts can be used as a source of intervention whereby the related predictors including sense of belonging, emotional risk, and social integration could be manipulated and examined in association with adjustment (as supported by Hobart, Harmon, & Leopold, 1996). The findings are also fundamental as essential inferences can be made for education based on the outcome of the study.

Many teachers and young people are faced with dealing with aggressive youth —aggression disrupts learning in classrooms and can cause victims of aggression to develop feelings of disaffection. However, if teachers and administrators recognize that sense of belonging is negatively related to aggression they may try to cultivate experiences for all students that support the experience of greater connectivity to school. Also, programs that train and encourage youth to be judicious and considerate in their dealings with others might result in an increase in participation in school activities by young adolescents and less aggressive behaviors.

Studies have demonstrated that socialization processes that occur within the learning context can foster learning and boost social standing (Fuchs, D., Fuchs, L.S., Mathes & Martinez, 2002; Wentzel, 1999). The finding that group centrality is positively associated with social adjustment in the current study extends the findings from past research. This finding signifies that adolescents who experienced greater social adjustment were those who evidenced greater social integration into the larger social network. However, there is still a need for further examination of the nature of the relationship between network centrality and popularity in relation to particular peer interactions. We know that research has shown that the nature and composition of groups in general are pertinent to individual adjustment as the groups into which members are socially integrated has bearing on members' perceptions and values (Cairns et al., 1998; Kinderman, 1998; Ryan, 2001). And so, it calls for future research to examine the nature of the relationship between network centrality and popularity at the group level in terms of specific peer exchanges including peer tutoring, the cultivation of interest in academic endeavors by other adolescents, and engaging cooperatively in intellectual pursuits such as study sessions. These are all different ways in which adolescents can interact with each other. Thus, the view taken here following careful consideration is that these particular types of interactions should have some bearing on the level of positive adjustment that adolescents

experience throughout middle school (as suggested in research by Kamps et al., 2008; Neddenriep, Skinner, et al., 2009; Xu et al., 2008).

In connection, interventions should be developed that focus on training teachers on how to create conditions that increase student engagement and promote feelings of connectivity. For instance, teacher workshops could focus on helping teachers understand the importance of the relational context in association with positive adjustment and provide training in cultivating school contexts that foster positive adjustment. This would enable 5th grade teachers to support relational facets such as sense of belonging that promote and sustain positive 5th grade adjustment because prior adjustment is a good indicator of later adjustment. Moreover, 5th grade teachers may possibly help prepare students for the challenges they could face with the transition to middle school. Such seminars also could allow middle school teachers to cultivate contexts that promote positive experiences for adolescents. Educators in general could be encouraged to cultivate awareness among students of being more considerate of others in the community as supported in Anderman's (2003) research.

Considering findings from past research and the current study regarding positive adolescent adjustment, and that testing and measurement have become a focal point in academia where both teachers and students are held accountable, it is fundamental to examine what this means for education. Many educators may not

readily associate social standing and sense of belonging with positive adjustment. Rather, teachers as a rule do not relate children's affective ties to community with reducing the potential for negative behaviors. Also, it seems that when group type is given consideration, it is usually thought of in relation to negative adjustment (i.e. disruptive or aggressive behaviors). The focus is sometimes centered on how to eliminate activities that are disruptive in nature within the classroom because such behaviors hinder the learning process. Teachers could be encouraged to take a different approach that might entail creating contexts in which children are taught to be thoughtful when dealing with others and to facilitate positive experiences for children in school.

In conclusion, the findings in the current study have established that the relational context is fundamental to positive adolescent adjustment. Although these findings might be most applicable to other similar rural Appalachian populations, this information is relevant as it can be used in future research and application. For instance, it may be useful for researchers to direct future research on treatment conditions that utilize group centrality, sense of belonging, and status in conjunction with specific types of interactions including peer tutoring and study sessions in order to examine how such contexts could foster positive adjustment.

REFERENCES

- Adams, G. R. (2005). Adolescent Development. In T. P. Gullotta & G. R. Adams, *Handbook of adolescent behavioral problems: Evidence –base approaches to prevention and treatment* (pp. 3-16). New York: Springer Science + Business Media.
- Anderman, E. M. (2002). School effects on psychological outcomes during adolescence. *Journal of educational psychology, 94*, 795-809.
- Anderman, L. H. (2003). Academic and social perceptions as predictors of changes in middle school students' sense of belonging. *The journal of experimental education, 72*, 5-22.
- Ackerman, B. P., Brown, E. D., & Izard, C. E. (2004). The relations between contextual risk, earned income, and the school adjustment of children from economically disadvantaged families. *Developmental psychology, 40*, 204-216.
- Allen, J. P., Porter, M. R., McFarland, F. C., Marsh, P., & McElhaney, K., Boykin (2005). The two faces of adolescents' success with peers: Adolescent popularity, social adaptation, and deviant behavior. *Child development, 76*, 747-760.
- Ali, S. R. & Saunders, J., L. (2006). College expectations of rural Appalachian youth: An exploration of social cognitive career theory factors. *The career developmental quarterly, 55*, 38-51.
- Ayers, C. D., Williams, J. H., Hawkins, J. D. Peterson, P. L., Catalano R. F., & Abbott, R.D. (1999). Assessing correlates of onset, and Desistance of delinquent behavior. *Journal of quantitative criminology, 15*, 277-306.
- Bagi, F. S., Reeder, R. J., & Calhoun, S. D. (2002). Federal funding in Appalachia and its three sub regions. *Rural America, 17*, 31-37.
- Bradford Brown, B., & Theobald, W. (1999). How peers matter: A research synthesis of peer influences on adolescent pregnancy. *The national campaign to prevent teen pregnancy peer potential: Making the most of how teens influence each other, April*, 27-80.
- Berndt, T. J., & Keefe, K. (1995). Friends' influence on adolescents' adjustment to school. *Child development, 66*, 1312-1329.

- Brofenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Cambridge, MA: Harvard University Press.
- Brown, E.C., Catalano, R.,F., Fleming, C.B., Haggerty, K.P., Abbott, R.D., Cortes, R.R., & Park, J. (2005). Mediator effects in the social development model: an examination of constituent theories. *Criminal behavior and mental health, 15*, 221-235.
- Cairns, R. B. (2000). Developmental science: Three audacious implications. In L. R. Bergman, R.B. Cairns, L. G. Nilsson, & L. Nystedt (Eds.), *Developmental science and the holistic approach* (pp. 97- 111). New York: Plenum Press.
- Cairns, R. B. & Cairns, B. (1994). *Lifelines and risks: Pathways of youth in our time*. Cambridge, England: Cambridge University Press.
- Cairns, R. B., Cairns, B. D., Neckerman, H. J., Gest, S. D., & Gariépy, J. (1988). Social networks and aggressive behavior: Peer support or peer rejection? *Developmental psychology, 24*, 815-823.
- Cairns, R. B., Gariépy, J., Kindermann, T., & Leung, M. (1989). *Identifying social clusters in natural settings*. Unpublished manuscript. University of North Carolina at Chapel Hill, Center for DevelopmentalScience.
- Cairns, R. B., Xie, H., & Leung, M. (1998). The popularity of friendship and the new neglect of social networks: Toward a new balance. *New directions for child development, 80*, 25-52.
- Cairns, R. B., Leung, M., Buchanan, L., & Cairns, B. (1995). Friendships and social networks in childhood and adolescence: Fluidity, reliability, and interrelations. *Child development, 66*, 1330- 1345.
- Cairns, R. B., Leung, M., Gest, S., & Cairns, B. (1995). A brief method for assessing social development: Structure, reliability, stability, and developmental validity of the interpersonal competence scale. *Behavior research therapy, 33*, 725-736.
- Cairns, R. B., Perrin, J., & Cairns, B. (1985). Social structure and social cognition in early adolescence: Affiliative patterns. *The journal of early adolescence, 5*, 339-355.
- Canivez, G. L., Watkins, M. W., & Schafer, B. A. (2002). Interrater

agreement for discriminant classification for the adjustment scales for children and adolescents. *Psychology in the schools*, 39, 375-384.

Carnegie Council on Adolescent Development Carnegie Corporation of New York (1989). *Turning points preparing American youth for the 21st century*. Carnegie Council on Adolescent Development. Washington, D.C: Carnegie Council on adolescent Development.

Carnegie Council on Adolescent Development Carnegie Corporation of New York (1995). *Great transitions: Preparing adolescents for a new century*. Carnegie council on Adolescent Development. New York: Carnegie Corporation of New York.

Coie, J. D., Dodge, K. A., & Coppotelli, H. (1982). Dimensions and types of social status: A cross-age perspective. *Developmental psychology*, 18, 557-570.

Cotterell, J. (2007). *Social networks in youth and adolescence*. Routledge: London.

Crockett, L. J., Shanahan, M. J., & Jackson-Newsom, J. (2005). Rural youth: Ecological and life course perspectives. Retrieved December 9, 2008, from <http://digitalcommons.unl.edu/psychfacpub/246>

D'Amico, J. J., Matthes, W., Sankar, A., Merchant, B., & Zurita, M. (1996). Young voices from the rural Midwest. *Journal of research in rural education*, 12, 142- 149.

Desforges, C., & Abouchaar, A. (2003). *The impact of parental involvement, parental support and family education on pupil achievements and adjustment: A literature review* (Research Report 433). London, UK: Department for Education and Skills. Retrieved December 9, 2008 from www.dfes.gov.uk/research/data/uploadfiles/RR433.pdf

Diehl, D. S., Lemerise, E. A., Caverly, S. L., Ramsay, S., & Roberts, J. (1998). Peer relations and school adjustment in ungraded primary children. *Journal of educational psychology*, 90, 506-515.

Eccles, J. S., & Harold, R. D. (1993) Parent-school involvement during the early adolescent years. *Teachers college record*, 94, 568-587.

Eccles, J. S., Midgley, C., Wigfield, A., Miller Buchanan, C., Reuman,

- D., Flanagan, C., & Mac Iver, D. (1993). Development during adolescence: The impact of stage-environment fit on young adolescents' experiences in schools and in families. *American psychologists, 48*, 90-101.
- Edl, H., Jones, M., & Estell, D. (2008). Special topic: Research brief ethnicity and English proficiency: Teacher perceptions of academic and interpersonal competence in European American and Latino students. *School psychology review, 37*, 38-45.
- Erdley, C., Nangle, D., Newman, J., & Carpenter, E. (2001). Children's friendship experiences and psychological adjustment: Theory and research. *New Directions for child and adolescent development, 91*, 5-24.
- Estell, D. B., Farmer, T. W., Cairns, R. B., & Cairns, B. D. (2002). Social relations and academic achievement in inner-city early elementary classrooms. *International journal of behavioral development, 26*, 518-528.
- Farmer, T. W., Irvin, M. J., Sgammato, A. N., Dadisman, K., & Thompson, J. H. (2009). Interpersonal competence configurations in rural Appalachian youth: Academic achievement and associated adjustment factors.
- Farmer, T. W., Estell, D. B., Leung, M., Trott, H., Bishop, J., & Cairns, B. D. (2002). Individual characteristics, early adolescent peer affiliations, and school dropout: An examination of aggressive and popular group types. *Journal of school psychology, 41*, 217-232.
- Farmer, T. W., Leung, M., Pearl, R., Rodkin, P. C. Cadwallader, T. W., & Van Acker, R. (2002). Deviant or diverse peer groups? The peer affiliations of aggressive elementary students. *Journal of educational psychology, 94*, 611-620.
- Farmer, T. W., Van Acker, R., Pearl, R., & Rodkin, P. C. (1999). Social networks and peer-assessed problem behaviour in elementary classrooms. *Remedial and special education, 20*, 244-256.
- Farmer, T. W., & Rodkin, P. C. (1996). Antisocial and prosocial correlates of classroom positions: The social network centrality perspective. *Social development, 5*, 174-189.
- Farmer, T. W., Estell, D. B., Bishop, J. L., O'Neal, K., & Cairns, B. D.

- (2003). Rejected bullies or popular leaders? The social relations of aggressive subtypes of rural African American early adolescents. *Developmental psychology*, *39*, 992-1004.
- Farmer, T. W., Estell, D. B., Leung, M., Trott, H., Bishop, J. L., & Cairns, B. D. (2003). Individual characteristics, early adolescent peer affiliations, and school dropout: and examination of aggressive and popular group types. *Journal of school psychology*, *41*, 217- 232.
- Farmer, T., Irvin, M., Thompson, J., Hutchins, B., & Leung, M. (2006). School adjustment and the academic success of rural African American early adolescents in the deep south. *Journal of research in early education*, *21*, 1-14.
- Farmer, T., Xie, H., Cairns, B. D., & Hutchins, B.C. (2007). Social synchrony, peer networks, and aggression in school. In P. Hawley, T.D. Little, & P.C. Rodkin (Eds.), *Aggression and adaptation: The bright side to bad behavior*. Mahwah, NJ: Erlbaum.
- Fendler, L. (2006). Others and the problem of community. *Curriculum Inquiry*, *36*, 303- 326.
- Fish, M. (2007). *Infancy to middle childhood in rural Appalachia*. Retrieved December 9, 2008, from ftp://ftp.hrsa.gov/mchb/research/documents/finalreports/fish_r40_mc00316_mcbfinal_report.pdf
- Flanagan, C. A., Cumsille, P., Gill, S., & Gallay, L., S. (2007). school and community climates and civic commitments: Patterns for ethnic minority and majority students. *Journal of educational psychology*, *99*, 421-431.
- Fleming, C.B., Oxford, M.L., Harachi, T.W., (2002). A test of Generalizability of the social development model across gender and income groups with longitudinal data from the elementary school developmental period. *Journal of quantitative criminology*, *18*, 423-439.
- Fordham, S., & Ogbu, J. (1986). Black students' school success: Coping with the 'burden of acting White.' *Urban review*, *18*, 176-206.
- Freeman, T. M., Anderman, L. H., & Jensen, J. M. (2007). Sense of belonging in college freshmen at the classroom and campus levels. *The journal of experimental education* *75*, 203-220.

- Gest, S. D., Graham, B., & Hartup, W., W. (2001). Peer experience: Common and unique feature of number of friendships, social network centrality, and sociometric status. *Social development, 10*, 23-40.
- Gest, S. D., Farmer, T. W., Cairns, B., Xie, H. (2003). Identifying children's peer social networks in school classrooms: Links between peer reports and observed interactions. *Social development, 12*, 513-529.
- Gifford-Smith, M., & Brownell, C. (2003). Childhood peer relationships: Social acceptance, friendships, and peer networks. *Journal of school psychology, 41*, 235-284.
- Goodenow, C. (1993). Classroom belonging among early adolescent students: Relationships to motivation and achievement. *Journal of early adolescence, 13*, 21-43.
- Grolnick, W. S., & Ryan, R. M. (1989). Parent styles associated with children's self-regulation and competence in school. *Journal of educational psychology, 81*, 143-154.
- Hamm, J. & Faircloth, B. (2005). The role of friendships in adolescents' sense of belonging. *New development for child and adolescent development: the experience of close friendships in adolescence, 107*, 61-78.
- Hamm, J. & Faircloth, B. (2005). Peer context of mathematics classroom belonging in early adolescence. *Journal of Early Adolescence, August. 25*, 345-366.
- Hamm, J., & Dadisman, K. A., (2008). *The move to middle school as a values transition: Expectations of rural Appalachian parents pre-and mid-transition*. (Unpublished). University of North Carolina at Chapel Hill.
- Howley, A. Larson, W., Andrianaivo, S., Rhodes, M., & Howley, M. (2007). Standard-Based reform of mathematics education in rural high schools. *Journal of research in rural education, 22*, 1-12.
- Howley, C. B., Hobart, H., L., & Leopold, G., D. (Rural scholars or bright rednecks? Aspirations for a sense of place among rural youth in Appalachia. *Journal of Research in rural education, 12*, 150-160.

- Izzo, C., Weissberg, R., Kasprow, W., & Fendrich, M. (1999). A longitudinal assessment of teacher perceptions of parent involvement and school performance. *American journal of community psychology, 27*, 817-839.
- Juvonen, J. (2000). The social functions of attributional face-saving tactics among early adolescents. *Educational psychology review, 12*, 15-32.
- Juvonen, J. & Murdock, T. B. (1993). How to promote social approval: Effects of audience and achievement outcome on publicly communicated attributions. *Journal of educational psychology, 85*, 365-376.
- Juvonen, J. & Murdock, T. B. (1995). Grade-Level differences in the social value of effort: Implications for self-presentation tactics of early adolescents. *Child development, 66*, 1694-1705.
- Keifer, S., & Ryan, A. (2008). Striving for social dominance over peers: The implications for academic adjustment during early adolescence. *Journal of educational psychology, 100*, 417-428.
- Keyes, M., & Gregg, S., (2001). School –community connections: A literature review. (Report No. RC 023 259) Charleston, WV: Office of educational research and Improvement. (Eric Document Reproduction Service No. ED 459 047)
- Kindermann, T., A. (1995). Distinguishing “buddies” from “bystanders”: The study of children’s development within natural peer contexts. In *Development of person-context relations* (Eds.) Kindermann, Thomas, A., & Valsiner, J. Lawrence Erlbaum: New Jersey.
- Kindermann, T. A. (1993). Natural peer groups as contexts for individual development: The case of children’s motivation in middle school. *Developmental psychology, 29*, 970-977.
- Kingery, J., & Erdley, C. (2007). Peer experiences as predictors of adjustment across the middle school transition. *Education and treatment of children, 30*, 73-88.
- LaFontana, K. M., & Cillessen, A. H. N. (1999). Children’s interpersonal perceptions as a function of sociometric and peer-perceived popularity. *The journal of genetic psychology, 160*, 225-242.

- Laursen, B. P., & Hoff, E. (2006). Person-centered and variable-centered approaches to longitudinal data. *Merrill-Palmer quarterly*, *52*, 377-389.
- Lease, M. A., Kennedy, C. A., & Axelrod, J. L. (2002). Children's social constructions of popularity. *Social development*, *11*, 87-109.
- Levitt, M. J., Levitt, J., Bustos, G., L., Crooks, N. A., Santos, J. D., Telan, P., Hodgetts, J., & Milevsky, A. (2005). Patterns of social support in the middle childhood to early adolescent transition: Implications for adjustment. *Social development*, *14*, 398-420.
- Lonsbury, J. H., Marani, J. V. Compton, M. F. (1980). *The middle school in profile: A day in the seventh grade*. Omni Press: Georgia.
- Lord, S. E., Eccles, J. S., & McCarthy, K. A. (1994). Surviving the junior high school transition family processes and self-perceptions as protective factors. *Journal of early adolescence*, *14*, 162-199.
- Luthar, S. S., Cicchetti, D., & Becker, B. (2000). The construct of resilience: A critical evaluation and guidelines for future work. *Child development*, *71*, 543-562.
- Magnusson, D., & Cairns, R. B. (1996). Development science: Toward a unified framework. In R. B. Cairns, G.H. Elder, Jr., & E.J. Costello (Eds.), *developmental science* (pp. 7-30). Cambridge, England: Cambridge University Press.
- Maatta, S., Stattin, H., & Nurmi, J. (2006). Personality and social sciences achievement strategies in peer groups and adolescents' school adjustment and norm-breaking behavior. *Scandinavian journal of psychology*, *47*, 273-280.
- Mcfall, R. (2006). The protective factors of school bonding and school norms for adolescents who are at risk for exhibiting bullying behaviors. *Dissertation abstracts international section A: Humanities and social sciences*, *67*, 837.
- McMillan, D. W., & Chavis, D. M. (1986). Sense of community: A definition and theory. *Journal of community psychology*, *14*, 6-23.
- Mullen, B. & Copper, C. (1994). The relation between group

- cohesiveness and performance: An integration. *Psychological bulletin*, 115, 210-227.
- National Center For Education Statistics (2007). *Status of education in rural America*. Retrieved December 9, 2008, from http://nces.ed.gov/pubs2007/ruraled/chapter1_9
- Newman, B., Lohman, B., & Newman, P. (2007). Peer group membership and a sense of belonging: their relationship to adolescent behavior problems. *Adolescence*, 42, 241- 263.
- Nichols, S. (2008). An exploration of students' belongingness beliefs in one middle school. *The journal of experimental education*, 76, 145-169.
- Nichols, J. D., & White, J. (2001) Impact of peer networks on achievement of high school algebra students. *Journal of educational research*, 94, 267-273.
- Nickerson, A. B., & Nagle, R. J. (2001). Interrater reliability of the devereux behavior Rating scale-school form: The influence of teacher frame of reference *Journal of psychoeducational assessment*, 19, 299-316.
- Osterman, K. F. (2000). Students' need for belonging in the school community. *Review of Educational research*, 70, 323-367.
- Parker, J., Asher, S. (1987). Peer relations and later personal adjustment: Are low-accepted children at risk? *Psychological bulletin*, 102, 357-389.
- Pellegrini, A., Roseth, C., Mliner, S., Bohn, C., Van Ryzin, Vance, N., Cheatham, C., & Tarullo, A. (2007). Social dominance in preschool classrooms. *Journal of comparative psychology*, 121, 54-64.
- Pittman, L. M., & Richmond, A. (2007). Academic and psychological functioning in late adolescence: The importance of school belonging. *The journal of experimental education*, 75, 270-290.
- Pollard, K. (2005). Population growth and distribution in Appalachia: New realities. Population Reference Bureau. Retrieved December 9, 2008, from www.arc.gov/images/reports/demographic/population/population.pdf

- Resnick, M. D., Bearman, P. S., Blum, R. W., Bauman, K. E., Harris, K. M., Jones, J., Tabor, J., Beuhring, T., Sieving, R. S., Shew, M., Ireland, M., Bearinger, L., & Urdy, R. (1997). Protecting adolescents from harm findings from the national longitudinal study on adolescent health. *JAMA*, *278*, 823-923.
- Rodkin, P.C., Farmer, T. W., Pearl, R. & Van Acker, R. (2006). They're cool: Social status and peer group supports for aggressive boys and girls. *Social development*, *15*, 175-204.
- Roeser, R. W., & Eccles, J. S. (1998). Adolescents' perceptions of middle school: Relation to longitudinal changes in academic and psychological adjustment. *Journal of Research on Adolescence*, *8*, 23- 158.
- Roeser, R. W., Midgely, C., & Urdan, T., C. (1996). Perceptions of the school psychological environment and early adolescents' psychological and behavioral functioning in school: The mediating role of goals and belonging. *Journal of educational psychology*, *88*, 408-422.
- Roeser, R. W., Strobel, K. R., & Quihuis, G. (2002). Studying early adolescents' academic motivation, social emotional functioning, and engagement in learning: variable- and person- centered approaches. *Anxiety, stress and coping*, *15*, 345-368.
- Rudolph, K. D., Lambert, S. F., Clark, A. G., & Kurlakowsky, K. D. (2001). Negotiating the transition to middle school: the role of self regulatory processes. *Child development*, *72*, 929-946.
- Sanchez, B., Colon, Y., Esparaza, P. (2005). The role of sense of school belonging and gender in the academic adjustment of Latino adolescents. *Journal of youth and adolescence*, *34*, 619-628.
- Schwartz, D., Hopmeyer Gorman, A., Nakamoto, J., & McKay, T. (2006). Popularity, social acceptance, and aggression in adolescent and school attendance. *Developmental psychology*, *42*, 1116-1127.
- Schumacker, R., & Lomax, R. (1996). *A beginner's guide to structural equation modeling*. Lawrence Erlbaum: New Jersey.
- Supowitz, J. A., MacGowan, A., & Slattery, J. (1997). Assessing agreement: An examination of the interrater reliability of portfolio assessment in Rochester, New York. *Educational assessment*, *4*, 237-259.

- Sullivan, H. S. (1953). *The interpersonal theory of psychiatry*. New York: Norton.
- Towers, H., Spotts, E., Neiderniser, J., Plomin, R., Hetherington, M., & Reiss, D. (2000). Genetic and environmental influences on teacher ratings of the child behaviour checklist. *International journal of behavioral development, 24*, 373-381.
- Walls, T. A., & Little, T. E. (2005). Relations among personal agency, motivation, and school adjustment in early adolescence. *Journal of educational psychology, 97*, 23-31.
- Watling Neal, J. (2007). Why social networks matter: A structural approach to the study of relational aggression in middle childhood and adolescence. *Child youth care forum, 36*, 195-211.
- Wenz-Gross, M., Siperstein, G., & Parker, R. (1997). Stress, social support, and adjustment during the transition to middle school. *Paper Presented at the biennial meeting of the society for research in child development*, 1-17.
- Wentzel, K. R., Caldwell, K. A., & B., McNamara, C. (2004). Friendships in Middle school: Influences on motivation and school adjustment. *Journal of educational psychology, 96*, 195-203.
- Wentzel, K. R. (2003). Sociometric status and adjustment in middle school: A longitudinal study. *Journal of early adolescence, 23*, 5-28.
- Wentzel, K. R. (1999). Social-Motivational processes and interpersonal relationships: Implications for understanding motivation at school. *Journal of educational psychology, 91*, 76-97.
- Wentzel, K. R. (1999). Social influences on school adjustment: Commentary. *Educational psychologist, 34*, 59-69.
- Williams, J. H. (2005). Cross-National variations in rural mathematics achievement: A descriptive overview. *Journal of research in rural education, 20*, 1-18.
- Xie, H., Mahoney, J. L., & Cairns, R. B. (1999). Through a looking glass or a hall of mirrors? Self-ratings and teacher-ratings of academic competence and development. *International journal of behavioral development, 23*, 163-183.
- Zettergren, P. (2003). School adjustment in adolescence for previously

rejected, average, and popular children. *British journal of educational psychology*, 73, 207-221.

Zheng, Z., Huang, A. S., & Wang, W. (2003). School adjustment of first-generation Chinese-American adolescents. *Psychology in the schools*, 40, 71-83.