

What is the Relationship Between Teacher Practices Centering on the Provision of Involvement,  
Structure, and Autonomy Support and Student Engagement?

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Key words: student engagement; teacher practices; involvement, structure, and autonomy support; relationships; student performance; middle school; adolescents; low SES; relatedness, competence, student autonomy; proximal-level variables

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ABSTRACT

This study investigated the hypothesis that there is a relationship between teacher practices that focus on the provision of involvement, structure, and autonomy support and student engagement (Connell & Wellborn, 1991). The Classroom Assessment Scoring System (CLASS) (Pianta, R., Hamre, B., Haynes, N., Mintz, S., & La Paro, K., 2006) was used to assess practices of sixth, seventh, and eighth grade core teachers ( $N=17$ ) in mathematics, English, science, and social studies in an economically-depressed, rural middle school setting. Student perceptions ( $N = 299$ ) of relatedness, competence, and autonomy, and mathematics teachers' ( $N = 5$ ) perceptions of student engagement were assessed using the Research Assessment Package for Schools (RAPS) (IRRE, 1998). While the findings revealed that there were significant relationships between teacher practices that center on involvement, structure, and autonomy support and student engagement, the effect sizes were found to be low.

## DEDICATION

This work is dedicated to Johnny, Jeri, Justin, John, Shelisa, John, III, Jordan, Joel, Joseph, Joshua, Jefferson, Jackson, and Pablo whom I love with all my heart, and to teachers everywhere who strive to make a difference in the life of each of their students.

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## CHAPTER I INTRODUCTION

This study was designed to test the hypothesis that there is a relationship between teacher practices that provide involvement, structure, and autonomy support and students' perceived engagement (Connell & Wellborn, 1991) in an economically-depressed, rural middle school setting. The Classroom Assessment Scoring System (CLASS) (Pianta, Hamre, Haynes, Mintz, & La Paro, 2006) was used to assess and score practices of core teachers of English ( $N = 6$ ), mathematics ( $N = 5$ ), science ( $N = 3$ ), and social studies ( $N = 3$ ) on three instructional teams of sixth, seventh, and eight graders ( $N = 299$ ). Students were surveyed regarding their perceptions of relatedness, competence, and autonomy, and teachers were surveyed regarding their perceptions of student engagement using components of the Research Assessment Package for Schools (RAPS) (IRRE, 1998). Bivariate correlations and multiple regressions were used to examine the relationships between the CLASS domains and student relatedness, competence, and autonomy while controlling for poverty. In addition, there was a qualitative component with context specifics observed using the CLASS in all core content classrooms.

The first chapter provides an introduction to the study, a historical perspective, a statement of the problem, a statement of the question, the theoretical framework and definitions of the constructs, and the significance of the study. The chapter further presents the definition of key terms, suspected limitations, and a summary.

### Historical Perspective

At the same time that U.S. schools are becoming more diverse, the U.S. must maintain its competitive stance in a global economy and demonstrate its ability to produce creative and critical thinkers who maintain leadership in the 21<sup>st</sup> century. Indeed, according to Bell-Rose and Desai (2005), "Preparing today's students for success and eventual leadership in the new global climate is the single most important task facing U.S. education" (p.4). Figuring out how to accomplish the goal of educating all children is not a new challenge.

In a landmark decision, *Brown v. Board of Education* (1954) declared that separate was not equal and that schools across the land should be desegregated. Two years after *Brown*, there was interest in how society was going to meet the needs of all children. Dewey (1956) challenged the schools to do a better job in preparing a vast majority of learners to be responsible

and productive citizens by motivating and engaging these learners in the classroom. Two years after the passage of the landmark Civil Rights Act of 1964 when schools should have been integrated and fully diverse, Congress established a commission to study the educational opportunities available to minority children. This report, *Equality of Educational Opportunity*, also known as the Coleman Report (1966), involved some 570,000 students, 60,000 teachers, and 4000 schools and painted a bleak picture for all children. The overarching finding was that schools have little influence over a child's achievement, meaning that school could not mediate the child's background or prior experience. It appeared that schooling mattered little and that the ill effects of poverty and/or gaps in achievement were inevitable. However, the findings of this report were later challenged, and according to the Equity Research Brief (2003), Coleman later declared that he had underestimated the influence of in-school contexts on achievement. To this day, Dewey's charge has yet to be realized.

The age of reform and standards came to fruition with *A Nation at Risk* (National Commission for Excellence in Education, 1983). This document made the public aware of the mediocrity in performance and achievement in the nation's schools. It also highlighted the inadequacies of the teaching profession and generated concern in the corporate community that the nation's graduates would be lacking in skills to compete in the global marketplace (Wang, Haertel, & Walberg, 1993). While the Excellence Movement, the name used to describe the initiatives associated with *A Nation at Risk*, required more (i.e., more credits, more rigor, more homework, more time in the school calendar, more testing, more teacher efforts, etc.), the reform efforts were not revolutionary (DuFour & Eaker, 1998). And some seven years later, DuFour and Eaker, citing Alsalam and Ogle (1990), related that the United States Department of Education reported that "stagnation at relatively low levels appears to describe the level of performance of American students" (p.4). The Excellence Movement had failed.

Graduation rates and student achievement in most subjects have remained flat or have increased only slightly. Only a small fraction of high school students can read, write or compute, and manage scientific material at the high levels required for today's knowledge-based jobs. According to national assessments, only about 10% of U.S. 17 year olds can draw conclusions using detailed scientific knowledge; only 7% can solve math problems with more than one step; only 7% can read and understand specialized materials and a mere 2% can write well-developed materials. Meanwhile, international

tests continue to show U.S. high school students ranking near the bottom in mathematics and science. (National Commission on Teaching and America's Future, 1996, p.5)

Following not so far behind was *A Nation at Risk was Goals 2000* (United States Department of Education, 1994) with its charge:

. . . to improve learning and teaching by providing a national framework for education reform; to promote the research, consensus building, and systemic changes needed to ensure equitable educational opportunities and high levels of educational achievement for all students; to provide a framework for reauthorization of all Federal education programs; to promote the development and adoption of a voluntary national system of skill standards and certifications. . . . (p.1)

Included among eight lofty goals of *Goals 2000* (United States Department of Education, 1994) were stipulations that by the year 2000:

1. All children in America will start school ready to learn.
  2. The high school graduation rate will increase to at least 90%.
  3. American students will leave grades four, eight, and twelve having demonstrated competency in challenging subject matter, including English, mathematics, science, history, and geography, and every school in America will ensure that all students learn to use their minds well, so they may be prepared for responsible citizenship, further learning, and productive employment in our modern economy.
  4. U.S. students will be first in the world in mathematics and science achievements.
- (Section 102)

While *Goals 2000* has yet to be realized, in 1994 there was also a campaign afoot to politicize this "liberal" agenda of the Congress (DuFour & Eaker, 1998). Also, critics became annoyed with the creation of the National Education and Improvement Council to review and endorse standards. The charge was federalist, with the states losing their autonomy for the business of schooling. Subsequently, by 1996, the critics had won. The standards were now the business of the states. Also, according to DuFour and Eaker, the work was now the charge of professional organizations and specialists for curriculum and instruction.

Paralleling the move for standards was the move for site-based management, giving schools the autonomy they needed to do the jobs of teaching and learning according to their needs. This Restructuring Movement of the early 1990s brought optimism for reform needed to

effect school improvement. DuFour and Eaker (1998) related further, alluding to the director of the Center on Organization and Restructuring of Schools and citing Newmann and Associates (1996), that commonalities of restructuring include site-based management with the schools having autonomy to choose staff, design and implement programs, and budget and exercise shared decision-making, etc. These autonomous efforts did not help to realize the school improvement/improved student performance issues that remain challenges to date. In fact, according to Newmann and Wehlage (1995), the tendency has been for restructured schools to focus first on issues that do not address school improvement/improved student performance (e.g., student success on state standards such as the Virginia Standards of Learning).

According to the United States Department of Education's (2000) Office of Educational Research and Improvement, the National Assessment of Educational Progress (NAEP) has more than 30 years of data tracing student academic performance. Trends in 1999 were encouraging, yet, of concern at the same time. The years included in the 1999 data are 1971-1999 for reading, 1973-1999 for mathematics, and 1969-1999 for science. National Center for Education Statistics (NCES) excerpts from findings that focus primarily on 13-year olds follow (United States Department of Education, 2005).

#### *National Average Trends*

A review of findings reveals substantial gains in many areas; it appears that there is still much to be done in meeting the needs of a vast majority of learners who can become responsible citizens. In mathematics, the average score was six points higher in 1999 than in 1990 and ten points higher than in 1973 when the trends records began. In reading, while there had not been steady progress in 20 years, the average score remained higher in 1999 than in 1971. In science, from 1970 to 1977, the average score declined by eight points. There have been steady increases from 1982 to 1992. While this has resulted in a total increase of eleven points between 1977 and 1992, the decline since 1992 has resulted in an average score that was comparable to 1970.

#### *Performance Level Trends*

In reading, while 92% of 13 year olds performed at or above 200 (next to the lowest level) in each assessment year, only 15% has performed at the 300 level (next to the highest) since 1992. In mathematics, approximately 99% of 13 year olds have demonstrated beginning skills and understandings since 1986. The percentage of students at the 300 level has increased

from 18% in 1978 to 23% in 1999. In science, after increasing six percentage points between 1977 and 1986, the percentage of 13 year olds at or above the 200 level has remained between 92 and 93% during the late 1980s and 1990s. In 1999, 11% of 13 year olds demonstrated being able to perform at the level 300.

### *Subgroup Achievement Trends*

In reading, the average scores reflected slow gains for White students such that the 1999 scores were higher than in 1971 for all ages; however, 1999 scale scores were at the 1988 level. Black student gains from 1971 to 1999 were not consistent. They were higher in 1999 than in 1971; however, of those 1999 scores, the scores for 13 year olds were at the 1992 level. Hispanic scores are not available from 1971; however, the average score for Hispanic students in 1999 was higher than in 1975. Collectively for 13 year olds, the gains were slow but steady.

In mathematics, scores showed overall increases in performance for all age groups of all racial/ethnic subgroups. While Black students' scores started in 1973 at 46 points below those of White students, the difference was only 5 points in 1999. Between 1978 and 1982, there was a 14 point increase in Hispanic performance. Hispanic students started 11 points beyond where Black students started (and 35 points below White students) and were 14 points less than that of Black students in 1999 (and 19 points below that of White students).

Following an initial decline in science, there has been an increase in performance for most ages over the 1971 to 1999 time period. For White students, the average scale score for 1999 was only 3 points beyond that of 1970, with a marked decline for all ages, between 1977 and 1986. For Black 13 year olds, the average scale score for 1999 was 12 points beyond the score in 1970; however, there was a marked decline between 1973 and 1977 and a steady increase thereafter. For Hispanic 13 year olds, the 1999 average score was 14 points beyond the 1977 score. For thirteen year olds, there has been a steady increase from 1977 to 1992, subsequent to which there has been a decline.

Overall, the findings reveal substantial gains in many areas. Yet, it appears that there is still much to be done in meeting the needs of a vast majority of learners who can become responsible and productive citizens (United States Department of Education, 2005).

### *Standards of Learning*

In June 1995, the Virginia Board of Education, paralleling national trends, approved Standards of Learning (SOL) in four core content areas of mathematics, science, English, and history, as well as computer technology. In September 1997, the Board of Education established new Standards for Accrediting Public Schools in Virginia (SOA) that linked statewide accountability tests to the SOL (Virginia Department of Education, 2006). These actions and the federal enactment of the United States Department of Education's (2001) Elementary and Secondary Education Act (ESEA), of which the latest reauthorization is also referred to as The No Child Left Behind Act (NCLB), set forth the requirements of high stakes testing in the Commonwealth. Certain schools that do not make adequate yearly progress (AYP) including student performance by subgroup (i.e., White, Black, Hispanic, students with disabilities, disadvantaged students, and students of limited English proficiency) in the same subject areas for two consecutive years are designated as being in Federal improvement. Schools in improvement may also be accredited with warning because the students did not meet the State SOL benchmarks/required pass rates.

Across the Commonwealth, there remain schools that have not met Federal benchmarks for NCLB or State benchmarks for student performance on the SOL. To provide additional technical support for these schools in 2002, Governor Mark Warner implemented the Partnership for Achieving Successful Schools (PASS) initiative. While many Virginia public schools were on target academically, a number representing poorer urban areas in the Commonwealth were regularly experiencing difficulties in meeting their Standards of Learning goals and other benchmark measures (Commonwealth of Virginia, 2002).

### *At-Risk Schools*

Hannaway (2005), quoting Lewis, Ceperich, and Jepson (2003), focused attention on the fact that the public school population in cities tends to be even more poor and minority than the city population in general. Nationally, she asserted, these schools are more than likely to be “nonwhite (76.8% vs.37.9%), eligible for free lunch subsidy (62.3% vs. 37.9%), and have a higher enrollment of English-language learners (18.1% vs. 8.8%)” (p.5). These are all risk factors for not succeeding in school. Accordingly, Hannaway related that there is a problem between the “haves and the have nots” and that urban school leaders have identified “closing

achievement gaps as second only to academic achievement” (p.3) in terms of the ten most pressing issues.

Exacerbating Hannaway’s demographic representations of the have nots is Haberman’s assertion (1991):

An observer of urban classrooms can find examples of almost every form of pedagogy: direct instruction, cooperative learning, peer tutoring, individualized instruction, computer-assisted learning, behavior modification, the use of student contracts, media-assisted instruction, scientific inquiry, lecture/discussion, tutoring by specialist ... In spite of this broad range of options, however, there is a typical form of teaching that has become accepted as basic.... (p.1)

This is a problem because Haberman contended that there is a “basic menu of urban teacher functions” (p.1) that permeates the learning environment. The menu includes “giving information, asking questions, giving directions, making assignments, monitoring seatwork, reviewing assignments, giving tests, reviewing tests, assigning homework, reviewing homework, settling disputes, punishing noncompliance, marking papers, and giving grades” (p.1). Haberman added that these acts “constitute the pedagogy of poverty” (p.1) when they are the order of the day to the exclusion of higher order thinking processes including analysis and problem solving and metacognition.

#### Statement of the Problem

Across the Commonwealth and, indeed, across the U.S. there is continued concern for “schools in improvement” and student performance. There is hardly another challenge as critical to U.S. society and economics as the challenge to close academic achievement gaps between children of poverty and majority populations and minorities and majority populations (National Partnership for Teaching in At-Risk Schools, 2005). Chaired by Virginia Governor, Mark R. Warner, the partnership in its 2005 inaugural report to the nation related:

Black and Hispanic 12th graders perform at the same level in reading as white 8<sup>th</sup> graders. The high school graduation rate for Hispanics and blacks is roughly 55 percent compared with 78 percent for White students. By the age of 24, nearly half of young adults raised in affluent families have graduated from college, compared with only 7 percent of young adults raised in low-income families; while 34 percent of white adults obtain either a two year or four-year college degree by age 25, only 20 percent of black adults and 15 percent of Hispanic adults

receive a college degree by that age. Eighty percent of inmates under the age of 25 in U.S. prisons lack a high school diploma, and 40 percent are functionally illiterate. According to the Center on Crime, Communities and Culture (1997), fifty percent of black high school drop-outs have been incarcerated; in 2000, there were more black males in prison (791,600) than in college (603,000). According to the 2000 Census, the median annual household income was \$33,000 for Hispanics and \$29,000 for blacks, compared with \$47,000 for whites. By 2020, there will be a shortage of workers qualified to fill the estimated 14 million-white collar jobs that will be vacated by baby boomers reaching retirement age. (p.2)

Overcoming a plethora of disadvantages associated with low SES, handicapping conditions of substandard and unequal educational opportunities, and finally, the disparity in the quality of their teachers will be crucial in effecting educational attainment for these children of poverty who are often minorities in inner cities, the report continues. Poor is not just reserved for the urban areas (Annie E. Casey Foundation, 2007), nor is Haberman's pedagogy of poverty, according to the implications of NCES data (United States Department of Education, 2005). Indeed, Virginia ranks 32 out of 50 states with 32% of its rural school students who qualify for free/reduced lunch (FRL) (Johnson & Strange, 2005).

Some 36 years after Coleman's initial findings, empirical evidence from Wenglinsky (2002) asserted that teacher classroom practices can have an effect on student achievement equal to or exceeding that of SES. Darling-Hammond (1996) related in the report of the National Commission on Teaching and America's Future that what teachers know and can do is one of the most important influences on what students learn. Other studies (Knapp, Shields, & Turnbull, 1995; LoGerfo, 2006; Marks, 2000; Sanders & Rivers, 1996; Wenglinsky, 2002) have reported similar findings and conclusions.

Just as in 1983, our nation remains "at risk." It is not only because of our need to be competitive in the global marketplace because we are still at war with the inequities of our educational system, caused by low expectations for our children of poverty and a whole array of other reasons related to social, psychological, and educational phenomena involving all children (Yahir, 2000).

Studies on tracking and ability grouping, teachers expectations, curricular differentiation and counseling of students have repeatedly disclosed unintended consequences, among which is the exacerbation of racial, ethnic, and socio-economic inequalities in students'

academic achievements, educational and occupational aspirations and future attainments... Reflecting the credo of opportunity, these studies have assumed that social inequalities in students' outcomes are intensified by the provision of unequal educational opportunities and have unearthed many such mechanisms... They have found that tracks, curricular sequences and teaching practices all construct divergent learning trajectories for socially different students, enlarging small inequalities to socially significant ones. Notwithstanding the vast knowledge they have accumulated about mechanisms of reproduction in education, most empirical studies in this domain have remained distanced one step from the arena in which actual learning takes place: student's engagement versus alienation from instruction. (Yahir, 2000, p. 247)

#### Statement of the Research Question

Student engagement may hold the key to achievement and performance that is needed to maintain and/or recapture the competitive position of the U.S. in the global marketplace and to prepare our students for success and eventual leadership in the new global climate of which Bell-Rose and Desai (2005) speak. This is the same achievement and performance needed to close the gaps in achievement among our children, whether impoverished, urban, rural, limited English proficient, minority, disabled, or otherwise categorized. According to Fredricks, Blumenfeld, and Paris (2004), behavioral engagement is correlated with higher achievement across various samples and ages. While there is a body of literature that addresses the success of restructuring and reform efforts (Reeves, 2005; Virginia Department of Education, 2000) and what Wang et al. (1993) referred to as distal variables, (i.e., state, school division, and school policies, procedures, and demographics) in improving school performance, there are critics who tout their disappointment with restructuring efforts.

Echeverria (2006), alluding to Fullarton (2002), related that in the restructuring process, there has been less attention on how to engage students in the learning process, and how they are motivated. There has been some attention given to studying student engagement in the reform/restructuring process though. As an example, the First Things First model of the Institute for Research and Reform in Education (IRRE) is designed to increase alignment, rigor, and student engagement in schools (Fredricks, Blumenfeld, & Paris, 2004). The First Things First model centers on what teachers do. Others make the case also that what teachers do matters more

than any reform initiatives adopted by districts (Ferguson, 1991; National Commission on Teaching for America's Future, 1996).

There is also a body of literature that asserts that proximal variables (i.e., psychological and instructional variables and variables pertaining to the home) exert more influence on learning than do distal variables. Classroom practices that focus on student and teacher interactions provide an example of proximal variables (Wang et al., 1993). Moreover, the literature asserts that (a) there are positive student outcomes, such as in student performance/achievement, associated with student engagement; and (b) a teacher whose practices include the provision of involvement, structure, and autonomy-support can effect student engagement that, in turn, can mediate the effects of socio-economic status and prior experience (Connell & Wellborn, 1991; Marks, 2000; Skinner, Wellborn, & Connell, 1990; Yahir, 2000).

As such, the research question follows: Is there a relationship between teacher practices focusing on the provision of involvement, structure, and autonomy-support and student engagement? If so, then, which domain of practices (i.e., Emotional Support, Classroom Organization, or Instructional Support) exerts the most influence? The proposed research study addressed those issues and centered on what Pianta et al. (2005) refer to as proximal-level interactions (between teachers and students).

### Research Questions

In an economically-depressed, rural middle school setting:

1. What is the relationship between teacher practices centering on the provision of involvement, structure, and autonomy support and student engagement?
2. Of the Classroom Assessment Scoring System (CLASS) Domains including Emotional Support, Classroom Organization, and Instructional Support, which one best predicts student engagement?
3. Based on the percentage of students identified as disadvantaged and JJRMS administrative assumptions, does poverty play a mitigating role in the relationship between teacher practices and student engagement?
4. Using CLASS as the measuring instrument, do core content teachers demonstrate involvement, structure, and autonomy support as operationalized by Emotional Support, Classroom Organization, and Instructional Support respectively?

## Theoretical Framework for the Problem

The theoretical framework for the study came from Connell and Wellborn's (1991) motivational analysis of a student's self-system processes that includes the student's perception of (or perception of the lack of) relatedness, competence, and autonomy in the classroom. The research study focused on the teacher practices of involvement, structure, and autonomy support that are believed to foster student relatedness, competence, and autonomy respectively and affect student engagement which, in turn, influence skills, abilities and adjustments as summarized in Figure 1 (Connell & Wellborn, 1991). A discussion of each component follows.

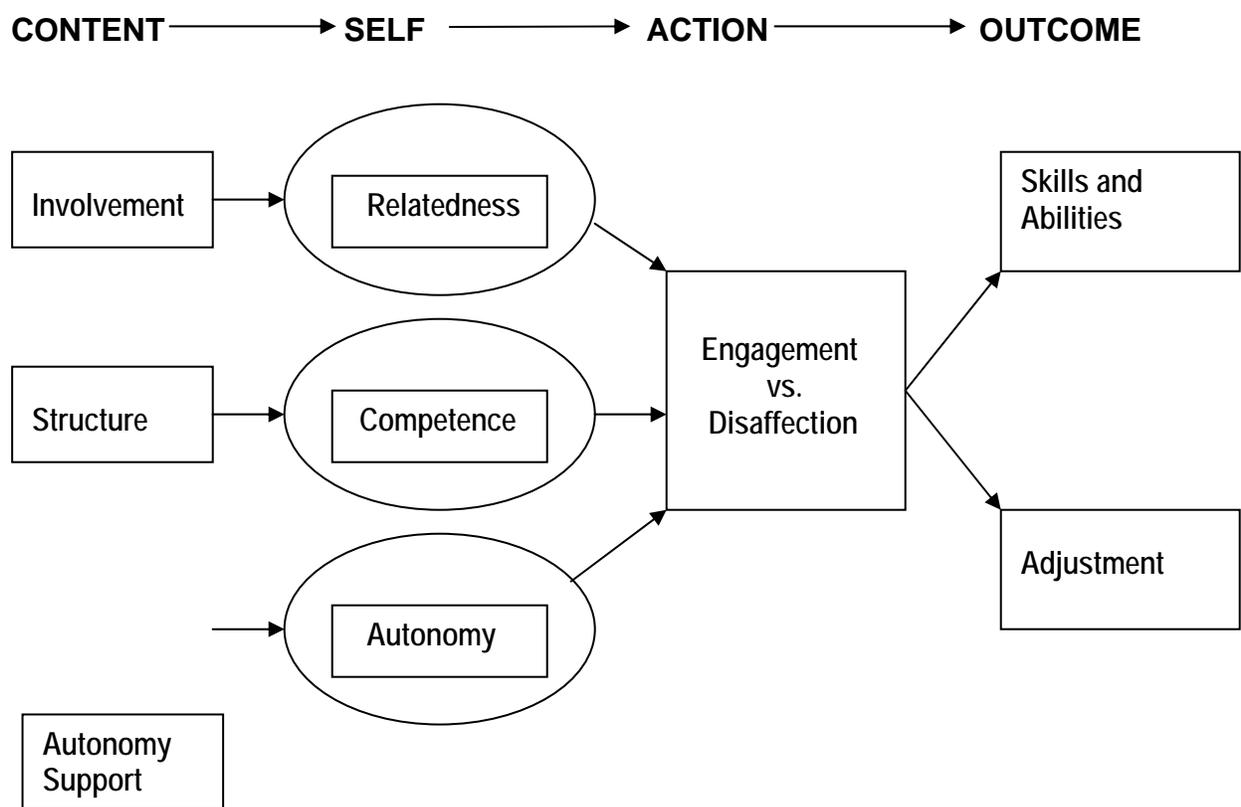


Figure 1. A motivational model of the effect of children's psychological needs on their engagement.

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From "Competence, Autonomy, and Relatedness: A motivational analysis of Self- System Processes" [p.51] by J. P. Connell and J. G. Wellborn, 1991, in M. R. Gunnor and L. A. Stroufe [Eds.], *Self Processes in Development: Minnesota Symposium in Child Psychology* [Vol. 23]. Hillsdale, NJ: Erlbaum. Copyright 1991 by Erlbaum. Reprinted with permission from IRRE

### *Involvement*

The reference of teacher involvement addressed teacher-student relationships that promote student relatedness (e.g., the student's sense of belonging in the classroom); teacher involvement fosters social connectedness in the classroom. Klem and Connell (2004) further posited that being socially connected gives students the feeling of being respected. Students perceived a caring environment and felt as if they were valued members of the classroom. While Newmann (1992) alluded to the student's feeling of worth and dignity that fosters membership, Skinner and Belmont (1993) referred to quality of relationships when addressing involvement. According to Skinner and Belmont, if there were no teacher involvement, students would not have a sense of belonging or feeling of relatedness. Moreover, teachers could provide involvement to the extent that they expressed warmth for their students, demonstrated that they enjoy interacting with their students, were attuned to their students, and dedicated resources to them (Pianta et al., 2006).

While engagement is not influenced by relatedness alone, relatedness will address the student's need to belong and feel connected. Moreover, it will buy time for the teacher to provide structure that will incorporate opportunities for repeated student academic success and the building of student self-competence (Klem & Connell, 2004). According to Connell and Wellborn (1991), teacher involvement influences student relatedness.

### *Structure*

Structure incorporates the idea of an instruction-rich environment in which the student is aware of and comfortable in his/her security to learn. It fosters student competence in the classroom. Klem and Connell (2004), referencing the student engagement report of the National Research Council and Institute of Medicine (2004). The report related that students who experience academic success and feel that they can experience academic success do indeed control that competence. These beliefs lead to emotions that promote student engagement. They posited further that repeated success, in turn, engenders intrinsic motivation. Newmann (1992) also stated that one of mankind's most compelling needs is the need for competence. At the same time, competence is dependent upon membership or the sense of belonging and the provision of authentic instruction (Knapp et al., 1995; Marks, 2000; Newmann, 1992; Oldfather, 1993). In reference to structure, Skinner and Belmont (1993) addressed how the context of the class needs

to communicate to students how to achieve competence or academic success. A class that is rich in structure would also include opportunities for students to learn to exercise metacognitive skills as they analyzed how they best learn. According to Skinner and Belmont (1993), a context that does not provide structure is chaotic. Further, Skinner and Belmont stated that teachers could provide structure by being predictable in their interactions (i.e., communicating expectations and responding to student needs, whether academic or social). Teacher structure influences student competence (Connell & Wellborn, 1991).

### *Autonomy Support*

Autonomy support incorporates the idea of an environment in which there is student choice, within parameters, along with high expectation. Klem and Connell (2004) posited further that the ensuing autonomy must be exercised in an environment in which there is structure. Newmann (1992) suggested that students must have opportunities to “own their work,” meaning that they must be able to construct knowledge as it is relevant to their realities and in their own words. In reference to autonomy support, Skinner and Belmont (1993) addressed the amount of freedom that is allowed for students to exercise choice within appropriate bounds. According to Skinner and Belmont, a context that does not provide autonomy support is one that is coercive. Further, teachers can provide autonomy support by allowing students choices in learning activities, linking classroom activities and students’ interests, and by avoiding external control, and pressure (Pianta et al., 2006). Giving voice to students on decisions related to the classroom increased student commitment to and investment in learning (McCombs & Whisler, 1997; Oldfather & McLaughlin, 1993). Teacher autonomy support influences student autonomy that is also referred to as identified self regulation by IRRE researchers (IRRE, 1998).

### *Engagement versus Disaffection*

Within the confines of the study, student engagement and disaffection are both “meta-constructs” (Guthrie & Wigfield, 2000) that incorporate the psychological, social, and emotional domains of student behavioral outcomes affected by the classroom context. Engagement may be defined as students being actively involved emotionally, behaviorally, and cognitively in their academic work (Connell & Broom, 2004). To influence engagement, the requisite needs to be fulfilled include teacher involvement, structure, and autonomy support. As noted by Decker, Dona, and Christenson (2007), the terms disaffected, disengaged, and alienated may be used to

describe the child who is not engaged, noting that the disaffected child (e.g., disengaged from the lesson or alienated from the teacher and/or peers) perceives the lack of positive affect of teacher involvement, structure, and autonomy support. Engagement versus disaffection refers to a student's resultant actions in Connell and Wellborn's (1991) motivational model of the effects of children's psychological needs on their engagement (Figure 1). Engagement versus disaffection can be measured by teacher report with a 20-item scale (Skinner & Belmont, 1993) used by Decker et al. (2007). An example of one of the items is, "In my class, this student works as hard as he or she can" (p.90). Engagement versus disaffection may also be measured by student self report with an 84 item scale (IRRE, 1998).

### *Skills and Abilities*

According to Newmann (1981), skills and abilities refer to a potential outcome (e.g., crafts that the student has acquired as a result of academic work or class/teacher assignments) that may be influenced by a student's engagement in Connell and Wellborn's (1991) motivational model (Figure 1). Within the context of the study, skills and abilities include those grade-level proficiencies students are required to perform by Virginia SOL achievement tests. An example of the Oral Language Strand of Virginia English SOL 6.1 includes the student will "...(a) analyze oral participation in small group activities; (b) communicate as leader and contributor (c) evaluate own contributions to discussions; (d) summarize and evaluate group activities; and (e) analyze the effectiveness of participant interactions" (Virginia Department of Education, 2007, p.2). From this SOL excerpt, it is obvious that the student needs to demonstrate higher order thinking skills in order to perform, as indicated by the verbs analyze, summarize, and evaluate.

### *Adjustment*

As noted in Connell and Wellborn's (1991) motivational model (Figure 1), adjustment refers to an outcome that may be influenced by a student's engagement. Student disengagement or disaffection would influence the lack of adjustment to the classroom context and the social setting of the classroom, inclusive of teachers and peers.

The theoretical framework advanced by Connell and Wellborn (1991) indicated that the teacher practices that focus on the provision of involvement, structure, and autonomy support foster student relatedness, competence, and autonomy respectively. Depending on the student's

self-system beliefs (e.g., perceptions of being/not being a valued member of the class; perceptions of the ability to be/not to be successful in learning, coupled with perceptions of the teacher's beliefs about ability to learn; perceptions that there are choices that are/are not meaningful and relevant to the student's realities of life), the teacher (according to the student's perceptions) will influence student actions of engagement or disaffection. In summary, engagement or disaffection influences student outcomes whereby the student will either be able or not able to demonstrate skills and abilities and/or adjustment or the lack thereof. The hypothesis is that while the child's prior experience cannot be changed, engagement can be influenced and can influence a child's performance in the classroom.

### Significance of the Study

The literature is replete with studies of student engagement and the achievement and performance outcomes associated with it (Klem & Connell, 2004; Marks, 2000; Newmann, 1992; Newmann et al., 1992; Skinner & Belmont, 1993; Tucker et al., 2002; Yahir, 2000). At the same time, there is a gap in the literature regarding the nature of the teacher practices that foster student engagement (e.g., involvement, structure, and autonomy support). As discussed in his study pertaining to students and learning, Yahir (2000) asserts, "... most empirical studies in this domain have remained distanced one step from the arena in which actual learning takes place: student's engagement versus alienation from instruction..." (pp.247 & 248).

If student engagement is a mediator of SES and prior experience, and if engagement can minimize the probability of student dropouts and maximize the probability of school completion (IRRE, 1998), then the profession would benefit from knowing how to manipulate classroom contexts to promote student engagement. Such findings would also address Dewey's charge of motivating and engaging a vast majority of students. And, again, such studies would address the national mandate to prepare students for the 21<sup>st</sup> century leadership of which Bell-Rose and Desai (2005) spoke.

With the plethora of data focusing on the achievement gaps in the U.S., other data indeed suggest that there is an engagement gap in U.S. schools (Center for Evaluation and Education Policy, 2005). While the U.S. is not alone in its predicament, that observation is not a source of consolation as Goals 2000 and immediate priorities come into focus. According to the Programme for International Student Assessment (2000), schools world-wide and affiliated with the Organisation for Economic Co-Operation and Development (OECD) have data relevant to

the lack of school engagement (i.e., the student's sense of belonging and his/her participation in reading, mathematics, and science). Canada, France, Germany, the U.S., and the United Kingdom are included among the 30 countries listed as members of OECD that are experiencing student engagement gaps.

Researchers from across the globe have reported that the engagement gap increases as students progress through the grades from elementary school to middle school to high school (Black, 2006; Klem & Connell, 2004; Murray, Mitchell, Gale, Edwards, & Zyngier, 2004). At the same time that the gap is of international concern, the gap covers cross sections of demography, including urban, suburban, and rural. Black (2006) stated:

Student disengagement in the middle years of schooling (years 5 to 9) is associated with low academic achievement, early leaving and poor future learning and work prospects. It is a strong predictor of lifelong socio-economic disadvantage. Worryingly, it is far more prevalent amongst students growing up in already disadvantaged families and communities. A major factor in this disengagement is student dissatisfaction with traditional pedagogy, an irrelevant curriculum and poor relationships with teachers and other students. While it cannot be the sole answer to the complex issue of entrenched disadvantage, changing the learning experience can be expected to ameliorate the effects of disadvantage and provide a way out of it....(p.1)

Subsequently, these data also suggest that it is not just the urban classroom that might suffer from Haberman's pedagogy of poverty or the lack of appropriate structure to promote student engagement. There are myriad reasons why students are not engaged. If they have not dropped out of school by high school, 40 to 50% of urban, rural, and suburban students are chronically disengaged (Klem & Connell, 2004). The present study hypothesized that these reasons incorporate the lack of relatedness, competence, and autonomy.

### Definitions of Key Terms

Since there are many ways to view student engagement, for purposes of the study, the working definition of engagement is limited to behavioral, emotional, and cognitive engagement in the context of the classroom. Engagement is sometimes referred to as student engagement, sometimes as school engagement, and sometimes as motivation in commentary literature.

### *School Engagement*

School engagement is a “meta-construct” that incorporates psychological, social, and educational domains according to Guthrie and Wigfield (2000). Newmann (1992) posited further, “engagement in academic work is the student’s psychological investment in and effort directed toward learning, understanding, or mastering the knowledge, skills, or crafts that academic work is intended to promote” (p. 17).

...It involves participation, connection, attachment, and integration in particular settings and tasks...engagement is the opposite of alienation, separation, detachment, and fragmentation. Persons are engaged to a greater or lesser degree with particular other people, tasks, objects, or organizations. Thus, engagement helps to activate underlying motivation and can generate new motivation. (Newmann, 1989, p.34)

Basing their connotation of engagement partially on the works of Finn, Pannozzo, and Voelkl (1995), Norris, Pignal, and Lipps (2003) defined school engagement as “children’s behavioural involvement in and emotional identification with the social and academic realms of school” (p.25). Again, the focus of the study was within the context of the classroom.

### *Behavioral Engagement*

According to Finn (1993), behavioral engagement reflected positive student conduct such as following classroom rules and regulations as well as the absence of behaviors beyond the norm such as skipping class. From the academic point of view, behavioral engagement centers on involvement in learning and academic tasks. For example, Skinner and Belmont (1993) indicated that contributing to the class by participating in discussions and group work is evidence of behavioral engagement. The operant word in reference to behavioral engagement is participation.

### *Emotional Engagement*

Murray et al. (2004) at the Center for Childhood Studies in Australia summarized connotations of engagement, including those of Connell and Wellborn (1991) and Skinner and Belmont (1993). They related that affective engagement is akin to “commitment” and that “values and beliefs (such as enthusiasm, optimism and confidence) play a role in the individual’s actions” (Murray et al., 2004, p.4). Commitment, a recurring theme of emotional engagement,

evolves from relatedness and a sense of belonging. This notion was supported by the work of Finn (1989) who related identification with school to a sense of belonging.

### *Cognitive Engagement*

One set of definitions for cognitive engagement focuses on the psychological aspects of learning. These may include investment in challenging work and exceeding requirements (Connell & Wellborn, 1991; Newmann, Wehlage, & Lamborn, 1992). This type of engagement involves intellectual investment where students may lose track of time in the process of learning. This may be because of persistence in higher order thinking, for example (Murray et al., 2004). Fredricks et al. (2004) add that the higher order thinking skills enhance cognitive skills. Metacognition or thinking and learning about learning are examples of a cognitive skill.

### *Disengagement*

Disengagement is opposite to engagement. Students who are alienated from instruction or school are disengaged. Students who are disengaged and/or alienated may also be described as disaffected, i.e., perceiving a low level of positive affect in the classroom (Decker et al., 2007). Disengaged, disaffected, and alienated are sometimes used interchangeably.

## Summary of Chapter I

Chapter I provided an introduction to the study of student engagement and a historical perspective regarding the issues. A statement of the problem, a statement of the questions, the theoretical framework and construct definitions, and the significance of the study have been presented. The chapter further provided the definition of key terms used in the study, definitions of key terms, and a summary and an organization of the study.

## CHAPTER II

### LITERATURE REVIEW

Chapter II contains a description of the search and selection process of the literature review. Next, the interface of the psychological domain and the educational domain that undergird student engagement is described. Following is the review of the empirical and commentary literature relevant to student engagement and learning across grade levels with an emphasis on the middle years. The chapter concludes with a summary.

#### The Search and Selection Process

With the primary question being what student engagement looks like in the classroom, relevant keywords in the search and selection process included academic engagement, school engagement, teacher practices, student performance, and engagement. In addition, searches of studies on high performing schools and schools of poverty were conducted. Having found several studies and a plethora of commentary literature, the literature review was extended by searching the references listed in those literatures for other relevant studies. Data bases including EBSCOhost; Education Research Complete; ERIC, from EBSCOhost; ERIC, from the U.S. Department; and JSTOR were used in the search. Criteria for selection of both qualitative and quantitative studies included those that provided empirical evidence regarding effective/high performing schools, instructional strategies and best practices; proximal-level interactions between student and teacher, student learning, engagement, and motivation; teacher efficacy; student efficacy; race groups and achievement; at-risk students; and measuring engagement, all relevant factors in exploring what student engagement looks like. With the discovery of Connell and Wellborn's motivational model (1991) and their constructs of teacher involvement, structure, and autonomy-support that are hypothesized to effect engagement as an outcome, literature focusing on teaching and those constructs was also included. The common threads that emerged from the literature review were synthesized into subcategories organized around: (a) the interface of the psychological and educational domains, (b) proximal variables associated with learning, and (c) distal variables associated with learning.

## The Interface of the Psychological and Educational Domains

Operating at the interface of the psychological and educational domains, student engagement is a multifaceted phenomenon in both the psychological and the educational literatures (Skinner & Belmont, 1993). While numerous studies have linked teacher- student relationships with motivational outcomes (Connell & Wellborn, 1991; Klem & Connell, 2004; Marks, 2000; Pianta, 1992; Skinner & Belmont, 1993,) additional research is still needed (Wentzel, 1997).

From the psychological perspective, the literature contains reports of investigations of students' self-system processes regarding their beliefs about self (Connell & Wellborn, 1991; Decker et al., 2007; Klem & Connell, 2004). These beliefs, whether initially positive or negative may be affirmed or destroyed, respectively, in the context of the classroom, recognizing the influence that teachers have over the way in which students perceive themselves as learners. Exacerbating the psychological and fundamental human needs of relatedness, competence, and autonomy (Klem & Connell, 2004; Newmann, 1992; Skinner & Belmont, 1993) at the middle school level are the internal conflicts of adolescents who are at the crossroads of childhood and young adulthood (Education Foundation Australia, 2007). According to Wentzel (1997), "...perceptions of caring from teachers might be a critical factor that motivates middle school students to engage in the social and academic activities of the classroom" (p.411). The findings reported in the literature suggested that all middle schoolers may be at risk of disengagement because their inner turmoils are at odds with traditional "schooling" (Education Foundation Australia, 2007; Murray et al., 2004; Wentzel, 1997). Citing Steinberg (1990) and Steinberg (1993), Simons-Morton et al. (1999) related:

Cognitively, adolescents' abilities to deal with relative, abstract and social concepts gradually advances (sic)...Socially, the quality of relationships between early adolescents and their peers and adults becomes increasingly important in middle school.

Psychosocially, adolescents continue to deal with lifelong issues of achievement and competence, while identity, autonomy, intimacy, sexuality, and social status emerge as other dominant concerns. (p.101)

However, because middle level education is based in part on the recognition of the value of relationships (Simons-Morton et al., 1999), student engagement may be predicted by the teacher's provision of involvement, structure, and autonomy-support (Klem & Connell, 2004;

Newmann, 1992; Ryan, Stiller, & Lynch, 1994; Skinner & Belmont, 1993). When meeting a student's basic psychological needs, teachers facilitate intrinsic motivation. Accordingly, Klem and Connell (2004) related that with highly supportive teachers, it is three times more likely that middle school students will self report being engaged.

While academic objectives cannot be met unless teachers provide caring classrooms, structure is needed to build competence and foster autonomy (Newmann, 1992). Caring alone does not get the job done. As evidenced in the literature, this is where the psychological and educational aspects of the classroom merge.

### Proximal Variables Associated with Student Learning

To identify and estimate the influence of educational, psychological, and social factors on "learning," Wang et al. (1993) through content analysis of 179 handbook chapters and narrative reviews, results from meta-analyses, and the ratings of experts identified and categorized 228 variables associated with student learning. There are two overarching categories of these variables; (a) proximal variables (e.g., psychological and instructional variables and variables pertaining to the home); and (b) distal variables (e.g., those variables related to on demographic policies and school organization that are at least once removed from the student). Generally, proximal variables have been found to exert more influence on learning than do distal variables (Marks, 2000; Pianta et al., 2005; Ryan et al., 1994; Wang et al., 1993).

A subcategory of proximal variables is classroom practices (e.g., student and teacher interactions). An illustrative example is "Student responds positively to questions from other students and the teacher" (Wang et al., 1993, p. 255). The teacher-student interaction also typifies a dyadic relationship between teacher and student that has reciprocal benefits. The teacher has fostered engagement in the student, and in turn, the student who responds positively fosters teacher engagement (Skinner & Belmont, 1993). Another example cited in this subcategory is classroom management such as group alerting where the "teacher uses questioning/recitation strategies that maintain active participation by all students" (Wang et al., 1993, p. 255). Marks (2000) demonstrated the power of proximal-level findings and structure as she related:

...the relative absence of personal background effects on engagement in the presence of authentic work and systems of social support is an important finding. Notably, race and

ethnicity did not differentiate the levels of engagement in instructional activity that students experienced in their classrooms. (p.174)

### *Classroom Practices*

Fredricks et al. (2004) indicated that the goal of some current reforms is to increase engagement. Based on their work with First Things First (FTF), an education reform initiative, and based on their experiences working with urban educators to try to change classroom and system practices, Connell and Broom (2004) related that three overarching instructional goals emerged, engagement, alignment, and rigor:

Engagement – defined as students being actively involved – emotionally, behaviorally, and cognitively – in their academic work; Alignment – defined as students being asked to and doing work that reflects academic standards deemed to be important by their district and state and having opportunities to master the methods used on their state’s high stakes assessments; and Rigor, which reflects the common sense notion that students will only achieve at high levels if that level of work is expected and inspected for all students. (p.5)

Teacher focus on proximal-level processes is evident in the FTF reform initiatives.

Knapp et al. (1995) investigated instructional practices in 140 classes (grades 1-6) in 15 elementary schools with large numbers of low SES students in six different districts and three different states. According to Knapp et al., about a third of the mathematics, reading, and writing classrooms “put advanced skills at the center of the learning opportunities afforded all children, and in so doing they placed emphasis on meaning” (p.771). The researchers further related that “teaching for meaning” includes

instruction that:

1. Helps students perceive the relationship of parts (e.g., discrete skills) to wholes (e.g., the application of skills to communicate, comprehend, or reason);
2. Provides students with the tools to construct meaning in their encounters with academic tasks
3. Makes explicit connections between one subject area and the next and between what is learned in school and children’s home lives. (p.771)

With a steady diet of meaningful instruction for one school year, children performed between six and seven normal curve equivalents (NCE) higher on mathematical skills than students who had just studied arithmetic. While there is evidence to allege that student performance persisted over

summer months, the researchers stated that the evidence was inconclusive because their analysis of effects was hampered by the loss of more than half of the first year students from the second year sample. With their findings, Knapp et al. (1995) joined Haberman (1991) in denouncing the pedagogy of poverty when they related that their findings

...dispel the myth that, because of their presumed or apparent deficiencies in relevant skills, children in high-poverty classrooms should not engage in academically challenging work until they are 'ready' – that is until they have mastered all relevant basic skills (if that time ever arrives). (p.775)

Moreover, there are positive implications for the residual effects of teaching that Sanders and Rivers (1996) address. As cited by Taylor, Pearson, Clark, and Walpole (2000), the teachers that Knapp et al. (1995) observed teaching wanted to give children more responsibility in learning, to provide academic tasks that asked more of students, and wanted to sustain engagement in learning among children. In reference to the motivational model of Connell & Wellborn (1991) focused on involvement, autonomy, and structure, the argument could be made that each is apparent in the effective classrooms of the study of Knapp et al. Meaningful instruction provided choices/options representing autonomy. It provided teacher involvement that is hypothesized to influence student relatedness in the sense that connections/applications were made to the realities of the students. Finally, it provided structure via predictable teacher behaviors.

Unlike Klem and Connell (2004), Tucker et al. (2002) asserted, based on their findings, that self-systems are not necessary to mediate engagement; teacher influence can directly influence the student's engagement and not have to go through the student's self-systems. Their study found that to the extent that the psychological needs of a student for competence, autonomy, and relatedness (Klem & Connell, 2004; Skinner & Belmont, 1993) are met, the student can engage himself in learning. Students who reported that their teachers were more interested and involved in their lives were more likely to report higher levels of engagement in learning. Tucker et al. related that given the influence of teacher involvement on student engagement for low income African American students, this phenomenon warrants more attention. Again teacher structure directly influenced student-perceived competence, and teacher autonomy support directly influenced student self-perceived autonomy.

In advancing his findings, Yahir (2000) joined Decker et al. (2007) and Klem and Connell (2004) who recognized the potential power of teachers in engaging their students. Yahir posited:

The interaction between instruction and environment affects students' consciousness of the available opportunities to learn and, consequently, their own learning and long-term outcomes...Expanding on this general perspective and focusing on instructional encounters, the findings concur with psychological perspectives that learning can take place only when students are actively engaged with classroom instruction. (p.262)

Yahir's theory appeared to be akin to that of Knapp et al. (1995) who touted meaningful instruction as the medium through which children of poverty can increase their engagement and performance. It is through that meaningful instruction that teachers can mediate the effects of home and other outside factors that are always competing for attention in the classroom. The researcher distinguishes among three distinct sets of sources of influence on student engagement and alienation from instruction: (a) instructional factors including methods, strategies, and subject matter; (b) students' experience in stressful, non-school environments including home; and (c) students' personal background and characteristics such as race, SES, gender, and previous achievements. The sample in his study included 33 elementary schools across 12 sites with randomly selected students. To capture what the students were doing, where they were, and with whom they were interacting, the researcher used an experience sampling method. Originally, there were 865 students providing data from 28,193 daily experiences. Through a series of regressions using variables from the three sets of influences on engagement and descriptive statistics, Yahir found:

(a) students are engaged only about 54% of the time with teacher lectures, (b) external factors captured student attention 35.8% of time, (c) race is a strong predictor of engagement with instruction the major effect of race is on external, non-school preoccupations to which African Americans and Hispanics were strongly prone), (d) student engagement significantly varied with method of instruction, and (e) students' engagement was socially stratified. (pp. 255-256)

The highest rates of engagement were from group work, discussions, and hands-on work (i.e., in laboratories). The lowest were for teacher lectures and television and video presentations. As Yahir observed, when instruction is boring and non-relevant, this presents additional

opportunities for stratification of achievement. By using teacher-centered strategies with Black and Hispanic children who bring more outside influences to the classroom, teachers limit themselves in mediating those external influences. Yahir's work has implications for what Haberman (1991) posited in reference to the pedagogy of poverty.

In investigating engagement in instructional activity in mathematics ( $N = 1765$ ) and social studies ( $N = 1904$ ) through hierarchical regressions at the elementary ( $N = 1348$ ), middle ( $N = 1151$ ) and high school ( $N = 1170$ ) levels, Marks (2000) raised three questions in her study. Part of the focus of the first question was whether or not there was any consistency in elementary, middle, or high school in reference to the estimated influence of personal background on engagement. Personal background was operationalized by gender, SES, and prior achievement. With her regression model's accounting for 6.2%, 7.8%, and 4.3% of the variance at elementary, middle, and high respectively, the answer was "a relative absence of personal background influence" (p.167).

Marks' (2000) second question delved into the extent to which certain practices influenced engagement. Included was providing authentic or meaningful instruction, i.e., work that is not rote and routine, but challenging and relevant to students' realities (Haberman, 1991; Knapp et al., 1995; Newmann, 1992; Yahir, 2000). Also included was providing an environment that is socially and emotionally supportive (Connell & Wellborn, 1991; Klem & Connell, 2004; Newmann, 1992; Oldfather, 1993; Pianta et al., 2006; Skinner & Belmont, 1993; Wentzel, 1997). According to Marks' regression model that explained 18%, 22%, and 21% of the variance respectively at elementary, middle, and high school, "authentic instructional work is a powerful contributor to engagement" (p.169). Insofar as a supportive classroom environment was concerned, the model accounted for 18%, 22%, and 25% of the variance for elementary, middle, and high school respectively. Of note is that the amount of variance increased from elementary to middle to high school.

The degree of influence of the subject matter (mathematics or social studies) was the focus of the third question Marks (2000) posed in her study. While mathematics exerted the most influence on engagement in the elementary and high school classrooms, that was not the case with middle school. Certainly, Connell's motivational model that expresses that engaged learners need structure, relatedness, and autonomy support are represented in Marks' findings.

There is a long list of researchers making the case that school matters because of the potential for teacher effect on students' performance (Connell & Wellborn, 1991; Decker et al., 2007; Klem & Connell, 2004; Knapp et al. 1995; LoGerfo, 2006; Marks, 2000; Reeves, 2005; Sanders & Rivers, 1996; Wenglinsky, 2002; Yahir, 2000). These findings are in opposition to the original findings of Coleman (1966). Wenglinsky looked at three aspects of teacher quality in the mathematics classroom including classroom practice, professional development in higher order thinking skills, and background characteristics of teachers. He found that teacher classroom practices had the largest effect on student performance and that those practices can have an effect on student achievement equal to or exceeding SES.

Oldfather (1993) who conducted research on student's motivation for literacy and constructivism in teaching and learning shared a portrait of students at Willow School in southern California. While the school is situated in an academic community and has open enrollment, most classes were intentionally structured to include multigrade and multiage levels. This particular English class had almost one third of its students eligible for special services through the resource teacher, ESL, speech and language. Thirty percent of the students in Susan Holmes's fifth- and sixth-grade classroom were of African-, Mexican-, or Asian American backgrounds.

Bleak pictures were painted by Haberman (1991) as he described a pedagogy of poverty in urban schools and the data presented by the Chair of the National Partnership for Teaching in At-Risk Schools, Virginia Governor Warner, in his inaugural report to the nation referencing schools at risk (National Partnership for Teaching in At-Risk Schools, 2005). However, Oldfather (1993) painted a picture of hope for student engagement as observed Susan Holmes' classroom when she reported evidence of Connell and Wellborn's (1991) constructs of relatedness, competence, and autonomy. In his description referring to his classroom, Paul, a sixth grader, operationalized teacher involvement that fostered the student relatedness (sense of belonging and membership) construct:

Students at Willow are different. Instead of not wanting to read, they'll read. Instead of not wanting to write, they'll write. They want to write. One of the things I love in school is what we're trying to learn – not just the right answer. That's really good. You want to get the right answer but you still learn. You do better because learning is more important than getting the right answer. (p.674)

As Oldfather (1993) continued her rich description, she related that the responsive teacher is one who shares power and responsibility and negotiates a balance between student choice and structure. By helping to design criteria for assessment purposes and having a say in which activities they wanted to be involved, these student participated in setting the rules of the classroom. This scenario represented another of Connell's constructs, autonomy. Oldfather (1993) posited further, "...Ultimately issues of student motivation for literacy have to do with empowerment. For students to take personal ownership..., they need to feel that they have been able to have some say about what happens in the classroom" (p.608). Because Susan Holmes practiced these classroom behaviors, she was effective also in honoring her students through involvement that influences relatedness, through structure that influences competence, and through autonomy support that influences student ownership and autonomy. Holmes was effective in engaging her students (Decker et al., 2007; Klem & Connell, 2004; Knapp et al., 1995; Marks, 2000; Newmann, 1992; Yahir, 2000; Wang et al., 1993).

The findings of Arhar and Kromrey's (1993) study focused on middle schools, interdisciplinary teaming, and bonding or the building of student-teacher relationships in low SES contexts. While they suggested that this type teaming may reduce student alienation from teachers in low SES contexts, the same was not found to be true for higher SES contexts. Citing the work of Comer (1988), Arhar and Kromrey addressed the resultant student mistrust and alienation caused by student perceptions of "non- expectations" from teachers whose family structure, ethnicity, and social class were different from their own. Facilitating for low SES students the school "membership" of which Newmann (1992) spoke includes providing for them clarity of purpose, fairness in interactions, personal support, opportunities for success, and caring. This is accomplished better in smaller organizational arrangements, i.e., instructional teams. Building on what Newmann also asserted (1992), the ensuing instruction has to center on authentic work providing, but limiting for students extrinsic rewards; to develop their intrinsic interests; to facilitate for them the sense of ownership in their work; to make real-life connections; and to make the work fun! In accord with LoGerfo (2006), Arhar and Kromrey related that teachers who are supported in their efforts by their administrators are more likely than not to, in turn, provide caring (relational and academic) support for their students. The study supported the contention of Reeves (2005) who addressed the singular importance of the teacher, as opposed to distal variables, in addressing student needs. It also addressed proximal-level

interactions of which Pianta et al. (2005) noted. Arhar and Kromrey are in accord with the Virginia Department of Education study (2000) that addresses, but is not limited to, the importance of the instructional leadership in an effective school's culture.

### *Teacher Effect*

Corcoran and Goertz (1995), citing Peterson, McCarthy, and Elmore (1995) and Darling-Hammond (1990), related that the structural changes of site-based management could possibly help instruction regain its primary focus. These structural changes could also prove to be more efficient in the use of resources; however, Corcoran and Goertz posited that the changes that directly affect human capital are more powerful in the learning process.

As cited in the National Research Council and Institute of Medicine's (2004) report on student engagement in high schools, Cohen and Ball (1999) contended:

Although learning involves cognitive processes that take place within and between individuals, motivation to learn depends on a student's involvement in a web of social relationships. The likelihood that students will be motivated and engaged in learning is increased to the extent that their teachers, family, and friends, as well as others who shape the instructional process, effectively support their purposeful involvement in learning.

Thus the focus on motivation and engagement calls attention to the interface between the learner and the social context in which learning takes place. (p.17)

The relationship that Cohen and Ball described is one which may be labeled as being dyadic. The dyadic relationship can be seen in this study and some others that follow.

LoGerfo (2006) surveyed teachers of kindergarteners who had been surveyed in 1998 during the first year of the Early Childhood Longitudinal Study Kindergarten Cohort. She analyzed test data of these teachers' students and found that (a) reading performance was higher in classrooms where teachers felt responsible for their students' education, (b) teachers who reported that their school's leadership was supportive of their efforts in the classroom had a much greater sense of responsibility, and (c) teachers of disadvantaged students were more likely than not to feel less responsible for those students. The latter statement of findings that focuses on students of low SES specifies that "there is a decrease of 0.18 standard deviations in responsibility for each standard deviation decrease in family income" (p. 73). LoGerfo related that her study addressed the achievement of individual student gains while the student was in a specific teacher's classroom; however, she claimed no causal relationship and stated that her

findings may be generalized to teachers of a nationally representative sample of first grade students, but not a nationally representative sample of first grade teachers. She asserted that (a) a responsible teacher is almost as important to student outcomes as the student characteristics/personal background effects of which Marks (2000) spoke and (b) “teachers who think that they should make a difference, do...” (LoGerfo, 2006, p. 68).

Sanders and Rivers (1996), with Tennessee Value-Added Assessment System (TVAAS) data, looked at assignment sequences in which teachers were comparable in terms of effectiveness and found it possible to see the residual effects of teachers from prior years. Upon further examination of the data, they found that teachers who were ineffective were ineffective across students’ prior levels of achievement; however, lower achieving students would be the first to benefit from increased teacher effectiveness. Sanders and Rivers reported on a specific situation in a specific school system. Black students had been disproportionately assigned to teachers who had been placed in the students’ disadvantaged neighborhoods after complaints were lodged from parents in more affluent neighborhoods. When assigned to effective teachers, the Black students made comparable gains as compared to other ethnic groups with the same level of prior achievement.

Expanding on that TVAAS data, Wright, Horn, and Sanders (1997) found that teacher effect was of singular importance in affecting student academic gain. The findings also demonstrated that students assigned to ineffective teachers suffer residual effects of such teachers even after having effective teachers in subsequent years. Although an effective teacher can facilitate excellent academic gain in students who are assigned to them, the study found that the residual effects of ineffective and effective teachers were mirrored in student achievement scores and could be measured after two years.

Klem and Connell (2004) identified optimal and risk thresholds for student commitment and engagement through analysis of data from four Rochester Assessment Package sources, RAPS-S (getting student’s perspectives on their engagement), RAPS-T (getting teachers’ perspectives on the engagement of each of their individual students), and RAPS (for school records) and the use of the Student Performance and Commitment Index that addresses attendance and test scores. Their work was based on Connell’s Reduced Self-Systems Model, a motivational model focusing on involvement that influences relatedness, structure that centers on predictable teacher behaviors and expectations, and autonomy support that influences autonomy

that allows students options in the classroom. Path analyses were used to demonstrate linkages from student-teacher interactions in the classroom context to the student's self-system processes (i.e., choices the student will make based on how involvement, structure, and autonomy support influence him/her) and student outcome/engagement. The key findings (Klem & Connell, 2004) espoused relationships (that may be termed dyadic) between teachers and students. If teachers report high engagement on the part of individual students, those students will report engagement in the class as well. Learners need the support of a well-structured classroom where their expectations are that teachers will be fair and consistent. They need to have a sense of school membership (Newmann, 1992), feeling that they belong. Skinner and Belmont's study (1993) some 11 years earlier provided findings that were parallel to those of Klem and Connell. In addition in their discussion, Skinner and Belmont related how teachers tend to compensate for negative emotional engagement, yet teachers respond negatively to the lack of engagement. The conjecture is that while the predominant negative emotional behaviors reported were boredom and anxiety, being passive was worse and may make teachers feel incompetent. Again, there is evidence of the dyadic relationships between individual teachers and individual students. Focusing on middle school students in their sample, Klem and Connell found that they were "68% more likely to be disengaged from school" if they did not perceive high levels of teacher support (p.269).

Just as Klem and Connell (2004) reported relationships (dyadic in nature) between students and teachers, so did Decker et al. (2007) in this exploratory study focusing on African American students at risk for special education because of behavior problems. When students self-reported their engagement as being high, teachers more than likely would report their engagement as being high as well. Students who were at-risk for special education fared better if they had positive relationships with their teachers. Accordingly, Decker et al. (2007) related that "engagement may be one pathway by which perceived relatedness with teachers may help to promote positive outcomes for students" (p.86).

#### *Distal Variables Associated with Learning*

With a focus on variables such as demographics, policies, school organization, etc., distal variables are at least once removed from the classroom and teacher-student interactions (Wang et al., 1993). The findings of Salisbury, Palombaro, and Hollowood (1993) related the positivisms of an inclusive culture in a reformed school. Functional criteria including the belief that all

children can learn had an impact in growing the school's new inclusive culture. An evolution in the change process documented evidence as to how cooperation followed resistance and gradually became overt support. This support included shared-planning time, pedagogical changes (i.e., the use of cooperative learning groups) and other qualitative changes in perspective from teachers to students, and eventually, to the school community.

Reeves (2005) coined the term "90/90/90 schools" in 1995, referring to schools with 90% minority population, 90% F/RL, and 90% passing high stakes testing. Reeves related that today the term is generic for high performing schools. He contended that an observer at a 90/90/90 school would see academic focus with clear curriculum choices, sufficient allocation of time to teach, routine monitoring and assessment of student progress, evidence-driven instructional decisions, multiple opportunities for increasing proficiency, and a multitude of other professional practices. Reeves asserted further, however, "The keys to improved academic achievement are professional practices of teachers and leaders, not the economic, ethnic, or linguistic characteristics of the students" (p.374). While Reeves touted the distal-level variables of high-performing schools, he also acknowledged the influence of proximal variables.

In other effective schools commentary literature, Newmann (1981) related that educational reform had neglected teachers' questions regarding student engagement. He posited further that students have basic needs for competence, extrinsic rewards, intrinsic interest, social support, and sense of ownership, and that fulfilling those needs would engender motivation. Newmann's observations about effective schools broach the focus of the psychological and social aspects of engagement literature. His discussion downplayed the role of distal-level variables per the findings of Wang et al. (1993).

## Summary of Chapter II

Unlike the bleak picture painted some 40 years ago by Coleman (1966), there is empirical evidence that says that there is hope for our children of poverty and their learning. "Student engagement has been found to be one of the most robust predictors of student achievement and behavior in school, a conclusion which holds regardless of whether students come from families that are advantaged or disadvantaged economically or socially" (Klem & Connell, 2004, p.5). Based on Connell and Wellborn's (1991) motivational model of the effect of children's psychological needs on their engagement and the evidence presented in Chapter II, it appears that even with the gaps (i.e., achievement between haves and have nots, minorities and

others; engagement between the connected and non-connected students, etc.) plaguing schools worldwide, students can be engaged in learning and demonstrate success if:

1. They attend an “effective” school where focused leadership and student motivation are deemed top priorities in effective practices leading to student success (Virginia Department of Education, 2000).
2. The school climate is inclusive (Salisbury et al., 1993) and supports teacher collaboration, constructive use of student performance data, aligning teacher assignments to teacher preparation (Reeves, 2005).
3. The effective school supports and helps maintain effective/efficacious teachers because a teacher who believes that she/he can affect student performance can do so LoGerfo (2006).
4. The effective teacher chooses to consider the psychological, social, and educational needs that will provide the structure, relatedness, and autonomy-support students need to become behaviorally and emotionally involved (Klem & Connell, 2004; Skinner & Belmont, 1993; Wentzel, 1997).
5. The effective teacher delivers instruction that is beyond the pedagogy of poverty (Haberman, 1991; Knapp et al., 1995; Newmann, 1992; Oldfather, 1993; Sanders & Rivers, 1996; Wang et al., 1993; Yahir, 2000) and incorporates higher-level thinking skills that will lead to cognitive engagement if there is structure, relatedness, and autonomy-support for the individual student (Connell & Wellborn, 1991; Klem & Connell, 2004; Newmann, 1992).
6. The children of poverty – White, Black, yellow, brown, or otherwise – are in attendance at the “effective school” in the “effective teacher’s classroom” to become behaviorally, emotionally, and/or cognitively “engaged” learners – so they will no longer be part of U.S. statistics relevant to closing the achievement gap among the poor and minorities (Annie E. Casey Foundation, 2007; Hannaway, 2005; Johnson & Strange, 2005; Knapp et al., 1995; Marks, 2000).

Overwhelmingly, the proximal variables of Wang et al. (1993) and the quality proximal-level interactions of Pianta et al. (2005) play a major role in the dyadic roles of teachers and their students. At the 46<sup>th</sup> annual ASCD conference, Hilliard (1991) told his audience:

To restructure we must first look deeply at the goals we set for our children and the beliefs we have about them...The risk for our children in school is not a risk associated with their intelligence. Our failures have nothing to do with IQ, nothing to do with poverty, nothing to do with race, nothing to do with language, nothing to do with style, nothing to do with the need to discover new pedagogy...nothing to do with the children's families...We have one and only one problem: Do we truly will to see each and every child in this nation develop to the peak of his or her capacities...(p.36)

Hilliard summarized, "If we embrace a will to excellence, we can deeply restructure education in ways that will enable teachers to release the full potential of all children" (p.31).

Student engagement researchers tell us that most important is the need for inquiry into the source of differences among teachers in the provision of involvement, structure, and autonomy-support (Decker et al., 2007; Skinner & Belmont, 1993). They also would like to see inquiry into how teacher cultural competency and the role of ethnicity would be associated with the quality of relationships in more diverse and disadvantaged samples (Decker et al.). The present study was undertaken to investigate whether or not there is a relationship between teacher practices that focus on the provision of involvement, structure, and autonomy support and student engagement. In conclusion, Fredricks et al. (2004) related, "An important issue for future study is which aspects of the school and classroom context can promote engagement" (p.13). Classroom context is the focus of the present study.

## CHAPTER III

### METHODOLOGY

This study investigated the hypothesis that there is a relationship between teacher practices that focus on the provision of involvement, structure, and autonomy support and student engagement (Connell & Wellborn, 1991) in an economically-depressed, rural middle school setting. The data were collected and analyzed as part of the school division's internal review and programmatic evaluation process. Chapter III begins with a brief introduction of the research problem for the study. Next, a description of the population to be studied is presented. A description of the instrumentation, the data collection process, and the data analysis process follows. A summary statement completes the section.

#### Population

The primary participants of the study were five Rousseauville County core mathematics teachers and their 299 sixth, seven, and eighth grade students at Jean Jacques Rousseau Middle School (JJRMS). JJRMS is an alias to protect the identity of the school and its population. The teachers completed the Research Assessment Package for Schools (RAPS TM) and students completed the RAPS SM to assess student engagement and related factors. The middle school teachers' version is the RAPS TM. Since this study was part of an overall evaluation of the school, the school division administration wanted all teachers (i.e., the mathematics teachers and the 12 additional core teachers of English, science, and social studies) to be observed in their classrooms using the CLASS to assess teacher practices.

JJRMS is located in an economically-depressed school division where agriculture has been the major industry. Rousseauville County is plagued by those indicators associated with poverty, including high numbers of single parent families, low literacy, and low-paying jobs (Annie E. Casey Foundation, 2007; Johnson & Strange, 2005). Forty-two percent of the households headed by females (with children under the age of five) live beneath the poverty line (United States Census Bureau, 2000). According to the school division, of the 98 children who were screened in 2003 during the spring kindergarten registration, 54 failed to meet the cut score for kindergarten readiness. That number represented 55% of the children who entered kindergarten in fall of that year. Of great concern to the administrators in the county's schools (i.e., one elementary school, one middle school, and one high school) are those indicators of

poverty and how they manifest themselves in the classroom (Black, 2006; Cooper & Jackson, 2005; Darling-Hammond, 1996; Decker et al., 2007; Haberman, 1991; Hannaway, 2005; Johnson & Strange, 2005; Newmann, 1992). JJRMS did not make AYP based on the 2006-2007 SOL performance of its disadvantaged students in mathematics.

### Instrumentation

While the education literature is rich with articles suggesting that student engagement is an outcome associated with the teacher's provision of involvement, structure, and autonomy support (Klem & Connell, 2004; Marks, 2000; Newmann, 1992), few instruments have been identified that capture how well the teacher demonstrates best practice behaviors (Brophy, 1986). Three instruments that have been employed to investigate student engagement and teacher behaviors that support student engagement are the Research Assessment Package for Schools (RAPS) for teachers (IRRE, 1998), the RAPS for students (IRRE, 1998) and the Classroom Assessment Scoring System (Pianta et al., 2006). These instruments were used in this research study. The description of each instrument along with its associated reliability and validity evidence follows.

#### *RAPS SM Instrumentation*

To measure the sixth, seventh, and eight grade students' self-perceptions of engagement, the middle school student component of the Research Assessment Package for Schools (RAPS SM) was used as a part of the on-going evaluative process at JJRMS. The process generated anonymous data that were made available to the researcher for description and analysis. In the early 1990s, this assessment package was known as the Rochester Assessment Package for Schools (Skinner, Wellborn, & Connell, 1990). There are 84 items within three domains including Engagement with the subdomains of Ongoing Engagement, Reaction to Challenge Engagement, and the Domain Summary Score; Beliefs about Self including the subdomains of Perceived Competence, Perceived Autonomy, Perceived Relatedness, and the Domain Summary Score; and lastly, Experience of Interpersonal Support including the subdomains of Parental Support, Teacher Support, and the Domain Summary (IRRE, 1998). Parental Support, with 17 items, was not a primary focus of this study; therefore, the original items 4, 7, 10, 13, 19, 20, 33, 36, 52, 58, 61, 65, 70, 75, 76, 77, and 79 of the Parental Support subdomain were not scored along with three additional items (8, 30, and 47), which focus on the Construct Level Composite:

Parental Emotional Security. See Appendix A for a sample of the RAPS SM. Appendix B, Middle School Options I: Composite Scores provides additional domain, subdomain, and construct details. See Appendix G for the researcher's agreement with the developers of RAPS.

*RAPS SM scoring.* The student response scale includes 4 (Very Important), 3 (Sort of Important), 2 (Not Very Important), and 1 (Not At All Important) (IRRE, 1998, p.III-35). For each student domain, subdomain, and construct, the scale responses were obtained by calculating the mean of the subdomain, after negative items were reversed (i.e., reversal in this case required subtracting the specified item score from 5; 4 became 1, 3 became 2, 2 became 3, and 1 became 4). The detailed procedures used to determine summary scores for the domains, subdomains, and constructs can be found in Appendix B, Middle School Options I: Composite Scores.

*RAPS TM instrumentation.* To measure the individual teacher's perceptions of the engagement of each of his/her students, the teacher's component of the RAPS instrument (i.e., RAPS TM) were used. The RAPS TM surveys were administered after the instructional day. Students were assigned arbitrary codes, by school officials, which teachers used to code student data, thereby assuring student anonymity.

*RAPS TM scoring.* The three items of the RAPS TM (IRRE, 1998) that teachers completed included: (a) In my class, this student seems tuned in; (b) This student comes to my class unprepared; (c) This student does more than required. The teacher response scale included 4 (Very True), 3 (Sort of True), 2 (Not Very True), and 1 (Not At All True). For teacher reporting of student engagement via the RAPS TM, the mean of the three items constituted the composite score for each student (IRRE, 1998) for each teacher except that Item 2 was reversed (i.e., in reversing a score, the score is subtracted from 5; 4 became 1, 3 became 2, 2 became 3, and 1 became 4). The average of the four core teacher (i.e., math, science, language arts, and social studies) composite scores constituted the teacher assessed overall student engagement score for each student. Additional information on the RAPS TM scoring may be found in Appendix B, Middle School Options I: Composite Scores.

*RAPS reliability and validity.* The reliability of the three items that comprise the RAPS TM Student Engagement composite has been reported to have an alpha reliability of .87 and an average interitem correlation of .69 (IRRE, 1998). The approach to assessing the validity of the RAPS components centered on the implications of the IRRE motivational model where classroom context affects students' self-systems beliefs that in turn influence their engagement;

and engagement influences performance and other positive outcomes or vice versa. Based on that theoretical framework, criterion variables were correlated with continuous variables to assess validity. Developers of RAPS report validity of the Student Engagement composites (e.g. RAPS SM and TM) and the validity of the High Risk and Optimal Risk indicators based on the strength of the association between the criterion variables of the Student Commitment and Performance Index (a RAPS component that evidences student attendance and standardized test scores) for middle schools (SCPI-M) and continuous variables of the RAPS SM and RAPS TM. Table 1 presents SCPI risk indicators and criteria. According to IRRE (1998), “The validity of Student Engagement composites ... is assessed by examining the strength of the associations of these measures with middle and high school performance...” (IRRE, 1998, p.V-15). For the Beliefs about Self components, “the validity is primarily evaluated with respect to strength of the associations the components demonstrate with both the RAPS TM and the RAPS SM Engagement High Risk and Optimal indicators” (IRRE, 1998, p.V-15).

Table 1

*Outcome Indices*

Indicator:	Threshold Criteria
SCPI-M	
High Risk	<ul style="list-style-type: none"> <li>(a) Middle school attendance rate below 79% or</li> <li>(b) Standardized reading achievement test percentile below 25%, or both.</li> </ul>
Optimal Risk	<ul style="list-style-type: none"> <li>(a) Middle school attendance rate of 93% or higher and one or both of the following:</li> <li>(b) Standardized reading achievement test percentile score of 70% or higher, or</li> <li>(c) Standardized math achievement test percentile score of 65% or higher.</li> </ul>

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Note: From “Research assessment package for schools (RAPS) manual,” [p. V-13] by IRRE, 1998. Philadelphia: Institute for Reform and Research in Education. Copyright 1998 by IRRE. Reprinted with permission from IRRE.

*The CLASS instrumentation*

Informed by developmental theory and other pertinent literatures, the CLASS focuses on proximal-level (teacher-student) interactions to measure teacher practices in the classroom (Pianta et al., 2006). The instrument has four domains: (a) Emotional Support that operationalized Teacher Involvement includes the dimensions of Positive Climate, Negative Climate, Teacher Sensitivity, and Regard for Student Perspectives; (b) Classroom Organization that operationalized Teacher Structure includes the dimensions of Behavior Management, Productivity, and Instructional Learning Formats; (c) Instructional Support that operationalized Teacher Autonomy Support includes the dimensions of Procedures & Skills, Content Understanding, Analysis and Problem-Solving, & Quality of Feedback; and (d) Student Outcomes (Dimension: Student Engagement). As a global measure of student engagement, the fourth domain does not focus on teachers and was not be used in the study. The CLASS domains and dimensions are included in Appendix C.

*The CLASS scoring.* Researchers/observers who use the CLASS must complete training in its use and demonstrate reliability in its scoring. It is essential that the observer have a holistic understanding of the CLASS dimensions for reliable scoring. Teacher practices are scored [within a seven point range from low (1) to high (7)] based on the relevant indicators in the dimension. For example, Positive Climate is a dimension in the Emotional Support Domain. One of the indicators of Positive Climate is Relationships. The low range (1-2) of the scoring scale indicates, “There are few, if any, indications that the teacher enjoys warm, supportive, and respectful relationships with students” (Pianta et al., 2006, p. 20). The high range (6-7) of the scale indicates, “There are many indications that the teacher enjoys warm, supportive and respectful relationships with students” (Pianta et al., 2006, p.20). The mid-range is from 3-5, noting “some” indications... To get a composite score for the dimension, Positive Climate, the observer averaged the scores obtained for four observation cycles “to arrive at a single score for each dimension across the observation period” (Pianta et al., 2006, p.13). For Negative Climate, a score in the Low range, however, is desirable. To calculate the score for Negative Climate (the absence of negativity), the mean had to be reversed by subtracting it from 8 (Pianta et al., 2006). The scoring scale for the CLASS is included in Appendix D.

*The CLASS reliability and validity.* Reliability is defined as “freedom from measurement (or random) error” (Vogt, 2005, p.274). To minimize random error in the use of the CLASS, potential observers underwent training as to the instrument’s purpose and procedures. Trainees watched a series of videos of classroom clips that had already been “consensus coded” relevant to teacher-student interactions. Upon conclusion of the CLASS training, trainees had demonstrated reliability in the use of the instrument. The CLASS has achieved “an average inter-rater reliability (within one point of the master codes) of 87 percent” (Pianta et al., 2006, p.108). This researcher was trained by the CLASS developers so that she could use the instrument in research and did attain reliability as specified by the CLASS procedures.

An instrument is deemed valid if it measures what it is designed to measure (Vogt, 2005). The CLASS reports face validity, criterion validity, and predictive validity (Pianta et al., 2006). Teacher effectiveness experts and those in classroom quality have agreed that CLASS measures relevant aspects of the classroom to assess classroom quality and student performance (Pianta et al., 2006), suggesting face validity. In comparison to the Snapshot, a time-sampling method that assesses the percent of time spent on classroom activities, there were lower associations between

the CLASS instructional support and time spent in literacy and math. This was to be expected as CLASS focuses not on quantity of instruction, but rather on quality of instruction. These findings suggest criterion validity (Pianta et al, 2006). Insofar as predictive validity was concerned, CLASS developers reported that “the most consistent and robust classroom quality dimension for predicting growth across time was Instructional Support of the classroom as assessed by the CLASS” (Pianta et al., 2006, p. 116).

When asked via telephone in July 2007 if CLASS (that was first developed as an assessment for the elementary classrooms) would be appropriate for use in research at the secondary level to measure teacher involvement, teacher structure, and teacher autonomy support (Connell and Wellborn), R. C. Pianta, the lead developer for CLASS readily assured this researcher that it would. He then referred the researcher to contacts at the University of Virginia Center for Advanced Study in Teaching and Learning (CASTL). While CLASS developers report face validity, criterion validity, and predictive validity in their manual, they acknowledge that they are seeking further validation of CLASS at the secondary level (Pianta et al., 2006). Further, M. Stuhlman, a CASTL researcher and CLASS trainer for administrators and other researchers using the instrument, related to this researcher (in a personal communication dated August 20, 2007), “Your findings will be among the first with the older students.”

#### Data Collection

Data collection was implemented over a four-week period under the supervision of the school division’s administration, starting in November and ending in December 2007. Procedures included (a) the school’s administration of the RAPS SM to sixth-, seventh-, and eighth-graders in their health and physical education classes; (b) the teachers’ completion of the RAPS TM; and (c) the researcher’s observation and scoring of teacher practices, using the CLASS.

#### *RAPS SM*

JJRMS administered the RAPS SM to its students as a part of its ongoing instruction evaluative process. Some 340 RAPS SM student surveys were administered by school officials during health and physical education class periods as a way to minimize disruptions to the instructional day. Specifically, students completed the RAPS SM in grade-level, classroom groups under the supervision of two Rousseauville County Public Schools (RCPS) Central

Office designated personnel and health and physical teachers. In accordance with RAPS SM guidelines (IRRE, 1998), students (a) were not administered the RAPS by their math teachers about whom they were being surveyed, for example; (b) were read the questions aloud as students completed the surveys; and (c) were allowed to skip any question for which they might have felt anxiety. The RCPS designated personnel who administered the survey were trained to insure that they responded the same way to questions from students. If students had difficulty with word meanings or questions, time was allowed for explanations to... “repeat question, reorder words in question, define words” (IRRE, 1998, p.III-39). Each administration of the RAPS SM was completed during a 50 minute class period (IRRE, 1998).

### *RAPS TM*

At a faculty meeting called specifically for the purpose of training core teachers, the researcher: (a) reviewed the purpose of the research study and (b) provided training on the RAPS TM and the CLASS. The researcher explained further that student anonymity was of paramount importance, and to that end school officials would (a) code student identities; (b) link the student identities to appropriate teachers; (c) distribute the encoded RAPS TM survey questions to the individual sixth, seventh, or eighth grade core teachers at this training session; (d) collect the RAPS TM completed by the teachers; and (e) give the completed surveys to the researcher for data analysis.

### *CLASS*

According to CLASS protocol the observer: (a) included two cycles of observations for each teacher with two observations per cycle (e.g. four observations totally); (b) observed each teacher individually for 20 minutes; (c) left the classroom and scored that observation; (d) came back and observed for another 20-minute period, and (e) then left the classroom and scored the second observation to complete the first observation cycle. To complete the second cycle, the observer repeated the same procedure with each of the 17 teachers at JJRMS. Since these data were not for teacher evaluative purposes, the researcher did not discuss CLASS domain scores with the teachers.

## Data Analysis

Excel and the Statistical Program for the Social Sciences (SPSS) software were used to generate descriptive statistics and correlation and regression analyses to examine, capture, and document the proximal-level process quality of teacher practices in sixth, seventh, and eighth grade classrooms. In particular, data analyses were conducted using student-perceived engagement as the dependent/criterion variable and the CLASS Domains/Dimensions as the independent/predictor variables to determine the relationship between the teacher provision of involvement, structure, and autonomy support and student-perceived engagement, relatedness, competence, and autonomy. Further, to predict which dimensions of the CLASS (e.g., teacher-student interactions and teacher practices) had greater influence on student relatedness, structure, and autonomy, the dimensions of each of the CLASS Domains (except Student Outcomes) were regressed on Connell and Wellborn's constructs (1991) of relatedness, competence, and autonomy, as self-reported by students. To examine poverty as a mitigating factor in the relationship between teacher practices and student engagement, partial correlations were used to statistically control poverty (as assessed by F/RL). While these analyses describe associations between and among variables, they did not assess causal relationships. To document core teacher-student interactions in the classroom, data resulting from CLASS observations of all core teachers were analyzed and are presented in context specific descriptions.

## Summary of Chapter III

Chapter III began with a brief introduction of the research problem for the study. Next, the population to be studied was identified followed by a description of the instrumentation, the data collection process, and the data analysis process. A summary statement completed the section.

## CHAPTER IV

### RESULTS

This study addressed four research questions related to student engagement and teacher practices for middle school mathematics teachers:

In an economically-depressed, rural middle school setting:

1. What is the relationship between teacher practices centering on the provision of involvement, structure, and autonomy support and student engagement?
2. Of the Classroom Assessment Scoring System (CLASS) Domains including Emotional Support, Classroom Organization, and Instructional Support, which one best predicts student engagement?
3. Based on the percentage of students identified as disadvantaged and JJRMS administrative assumptions, does poverty play a mitigating role in the relationship between teacher practices and student engagement?
4. Using CLASS as the measuring instrument, do core content teachers demonstrate involvement, structure, and autonomy support as operationalized by Emotional Support, Classroom Organization, and Instructional Support respectively?

#### Organization of the Chapter

Chapter IV is organized in six major sections. In the first section, relevant data pertaining to the population being studied are presented. In the second section, the results of the data analyses are reported as they relate to Research Question One. These data detail the associations between the involvement, structure, and autonomy support teaching practices of mathematics teachers and students' perceptions of their own engagement. Analyses of data that address Research Question Two are presented in the third section. These analyses examine the relationships among the CLASS domains of Emotional Support, Classroom Organization, and Instructional Support of mathematics teachers' and students' perceptions of the students' engagement. The fourth section contains the results of various analyses conducted to examine the relationship between mathematics teacher practices and students' perceptions of their engagement while statistically controlling for poverty. The fifth section presents a qualitative summary of CLASS observations of all core teachers (i.e., mathematics, English, science, and social studies) at JJRMS, through a brief overview of each CLASS domain followed by a

description of teacher and student interactions. The chapter ends with a summary of the major findings.

### Population Being Studied

JJRMS students who comprised the population of study ( $N = 299$ ) were almost exactly split 50/50 male/female with a larger percentage being White (versus Black) and non-disadvantaged (versus disadvantaged). The descriptive data relevant to the students are presented in Table 2. For the purposes of this study, there were 49 students who were not included in the study. Among the 49 students not included were students identified as disabled who did not participate in collaborative classes (i.e., core content classes with a core content teacher and special education-trained staff who “collaborated” in teaching); students other than White or Black ( $N = 12$ ) who participated in the RAPS assessment; and students who were absent or assigned to in-school suspension. The study did not include disabled students in self-contained classes; the 12 students who were other than Black or White would not have provided sufficient data to be significant.

Table 2

*Distribution of JJRMS Male and Female Students, White and Black Students, and Disadvantaged and Non Disadvantaged Students at Grades 6, 7, and 8*

Disadvantaged	Males		Females		Total
	Black	White	Black	White	
Yes	25	38	32	27	122
No	18	68	26	65	177
Total	43	106	58	92	299

( $N = 299$ )

### *Research Question One*

In an economically-depressed, rural middle school setting: What is the relationship between teacher practices centering on the provision of involvement, structure, and autonomy support and student engagement?

#### *Student Self Assessment of Engagement versus Teacher Assessment of Engagement*

Students' self-reported perceptions of their engagement as assessed by the Research Assessment Package for middle school students (RAPS SM) and their teachers' judgments of engagement as assessed by the Research Assessment Package for middle school teachers (RAPS TM) were examined. The two measures of student engagement were found to be significantly, though moderately, correlated,  $r(299) = .404$ ,  $p < .01$ ,  $r^2 = .163$ . This would indicate that there was a tendency for students and their teachers to agree regarding student levels of engagement, though the relationship is not a particularly strong one. Both measures of student engagement are reported in subsequent analyses relating student engagement to other factors such as teacher practices.

#### *Teacher Practices and Teacher Perceptions of Student Engagement*

The associations between teacher practices as assessed by CLASS and teacher perceptions of their students' engagement as assessed by the Research Assessment Package for middle school teachers (RAPS TM) were examined. These correlations are presented in Table 3 and were generally found to be small, ranging from .230 to .246, and to account for relatively little variance with  $r^2$  values ranging from .053 to .061. Because of the large sample size (i.e.,  $N = 299$ ), the correlations were all deemed significant at  $\alpha = .01$  but are not particularly meaningful because the associated  $r^2$  values were all very low (i.e.,  $r^2 = .061$  or smaller). Collectively, these correlations would indicate that there was some tendency for teacher perceived student engagement to be associated with teacher practices, though the relationships are not strong.

Table 3

*Correlations ( $r$ ) and Variances Accounted for ( $r^2$ ) Between Teacher Practices (CLASS) and Teacher Perceptions of Student Engagement (RAPS TM) (Question One) ( $N = 299$ )*

CLASS Variables	Student Engagement TM	
	$r$	$r^2$
Positive Climate	.230**	.053
Negative Climate	.231**	.053
Behavior Management	.242**	.059
Productivity	.246**	.061
Classroom Organization	.245**	.060
Procedures and Skills	.231**	.053

*Note.* \*\* $p < .01$ .

*Teacher Practices and Student Perceptions of Student Engagement and Beliefs about Self*

In order to investigate the associations between teacher practice variables and student perception variables, bivariate correlations were examined. Specifically, teacher practices of positive climate, negative climate, teacher sensitivity, behavior management, productivity, instructional learning formats, classroom organization and analysis and problem solving were correlated with self reported student engagement (SM) and Beliefs about Self (SM) that encompass perceived relatedness, competence, and autonomy. These correlations are presented in Table 4 and were found to be small (i.e.,  $r(299) = .270$  or smaller) and to account for relatively little variance (i.e.,  $r^2 = .073$  or smaller). Because of the large sample size (i.e.,  $N = 299$ ), the correlations were all deemed significant at  $\alpha = .05$  or  $.01$ , but are not particularly meaningful because the associated  $r^2$  values were all found to be very low (i.e.,  $r^2 = .073$  or smaller). Considered together, these correlations would indicate that there was some tendency for teacher practice variables to be associated with self reported student engagement and perceived relatedness, competence, and autonomy, though the relationships are weak.

Table 4

*Correlations Among CLASS Teacher Practice Dimensions of Positive Climate, Negative Climate, Teacher Sensitivity, Behavior Management, Productivity, Instructional Learning Formats, CLASS Domain Classroom Organization, CLASS Dimension Analysis & Problem Solving, and Student Perceptions (RAPS SM) of Student Engagement and Beliefs About Self (Question One) (N = 299)*

Teacher Practices CLASS	RAPS SM			
	Student Engagement SM		Beliefs About Self SM	
	<i>r</i>	<i>r</i> <sup>2</sup>	<i>r</i>	<i>r</i> <sup>2</sup>
Positive Climate	.148*	.022	.149*	.022
Negative Climate	.262**	.069	.255**	.065
Teacher Sensitivity	.154**	.023	.122*	.015
Behavior Management	.184**	.034	.141*	.020
Productivity	.270**	.073	.226**	.051
Instructional Learning Formats	.163**	.027	.126*	.016
Classroom Organization	.199**	.040	.157**	.025
Analysis & Problem Solving	.175**	.031	.149**	.022

*Note.* \*\*  $p < .01$ . \*  $p < .05$ .

### *Teacher Practices and Other Student Perception Variables*

Bivariate correlations were calculated in order to investigate the relations between teacher practice variables and student perception variables. Specifically, CLASS teacher practices (i.e., positive climate, negative climate, teacher sensitivity, behavior management, productivity, instructional learning formats, classroom organization, and analysis and problem solving) were correlated with self reported student perceptions regarding Maximize Competence, Identified Self Regulation/Autonomy, and Relatedness. These correlations, presented in Table 5, were found to be small. Many were not significant and accounted for relatively little variance. For example, negative climate and maximize competence were found to be significantly correlated,  $r(299) = .272, p < .01, r^2 = .074$ . In fact, negative climate had the strongest correlation with each of the three student variables. Again, because of the large sample size (i.e.,  $N = 299$ ), the correlations were all deemed significant at  $\alpha = .05$  or  $.01$ , but are not particularly meaningful because the associated  $r^2$  values were all found to be very low (i.e.,  $r^2 = .074$  or smaller). Overall, the small significant correlations would indicate that there was some tendency for teacher practice variables to be associated with self reported student perceptions of maximizing competence, identified self regulation/autonomy, and relatedness, though the relationships show little strength.

Table 5

*Correlations Among CLASS Teacher Practice Dimensions of Positive Climate, Negative Climate, Teacher Sensitivity, Behavior Management, Productivity, Instructional Learning Formats, CLASS Domain Classroom Organization, CLASS Dimensions Content Understanding and Analysis & Problem Solving, and Other Student Perception Variables (RAPS SM) of Maximize Competence, Identified Self Regulation/Autonomy, and Relatedness (Question One) (N = 299)*

Teacher Practices CLASS	RAPS SM					
	Maximize Competence		Identified Self Regulation		Relatedness	
	<i>r</i>	<i>r</i> <sup>2</sup>	<i>r</i>	<i>r</i> <sup>2</sup>	<i>r</i>	<i>r</i> <sup>2</sup>
Positive Climate	.156**	.024	.077	.006	.154**	.024
Negative Climate	.272**	.074	.142*	.020	.243**	.060
Teacher Sensitivity	.127*	.016	.075	.006	.111	.012
Behavior Management	.149**	.022	.084	.007	.128*	.016
Productivity	.246**	.061	.126*	.016	.212**	.045
Instructional Learning Formats	.132*	.017	.077	.006	.113	.013
Classroom Organization	.167**	.028	.092	.008	.143*	.020
Content Understanding	-.162**	.026	-.076	.006	-.151**	.023
Analysis & Problem Solving	.156**	.024	.089	.008	.137*	.019

*Note.* \*\*  $p < .01$ . \*  $p < .05$ .

## Relationships Among Teacher Practice Variables

Many of the intercorrelations between the CLASS variables were found to be .765 or larger and significant (i.e.,  $p < .01$ ) and to have large shared variances (i.e.,  $r^2 = .585$  or larger). The correlations are reported in Table 6. For example, the correlation between positive climate and negative climate was found to be large, significant, and to reflect a high degree of overlapping variance between the two scales,  $r(299) = .925$ ,  $p < .01$ ,  $r^2 = .855$ . These findings would indicate that the various scales of CLASS are not independent. Notable exceptions to this pattern are the correlations observed between content understanding and the other measures of teacher practices from the CLASS instrument. In these instances, the correlations were found to range from  $-.007$  (Negative Climate) to  $.555$  (Instructional Learning Formats), most of which were significant and reflected 20% or more in shared variance between content understanding and the other CLASS scales.

Table 6

*Intercorrelations Among CLASS Teacher Practice Dimensions of Positive Climate, Negative Climate, Teacher Sensitivity, Behavior Management, Productivity, Instructional Learning Formats, CLASS Domain Classroom Organization, and CLASS Dimensions Content Understanding and Analysis & Problem Solving (Question One) (N = 299)*

CLASS Dimensions	2	3	4	5	6	7	8	9
1. Positive Climate	.925**	.907**	.881**	.772**	.891**	.890**	.202**	.934**
2. Negative Climate	--	.821**	.842**	.891**	.818**	.868**	-.007	.871**
3. Teacher Sensitivity	--	--	.980**	.765**	.997**	.973**	.534**	.995**
4. Behavior Management	--	--	--	.865**	.990**	.998**	.534**	.975**
5. Productivity	--	--	--	--	.794**	.889**	.195**	.790**
6. Instructional Learning Formats	--	--	--	--	--	.984**	.555**	.990**
7. Classroom Organization	--	--	--	--	--	--	.488**	.973**
8. Content Understanding	--	--	--	--	--	--	--	.447**
9. Analysis & Problem Solving	--	--	--	--	--	--	--	--

Note. \*\*  $p < .01$ .

#### *Relationships Among Student Perception Variables*

The correlations among the student perception variables assessed using the Research Assessment Package for middle school students (RAP SM) and reported in Table 7 were examined to determine the interrelationships among the scales. While the correlations indicated that there were reasonably strong relationships among the scales, some of the relationships were much stronger than others, especially in relation to Beliefs about Self. For example, student perceptions regarding beliefs about self were found to be significantly correlated with student perceptions of identified self regulation/autonomy,  $r(299) = .836, p < .01, r^2 = .699$ , which reflected a strong tendency for students to report that as identified self regulation/autonomy increased, beliefs about self increased. Additionally, self reported engagement by students was significantly associated with students' beliefs about self,  $r(299) = .774, p < .01, r^2 = .599$ . Thus, as

students perceived increased beliefs about self, students' perceived increased engagement. Beliefs about self was also significantly correlated with student perceptions of relatedness,  $r(299) = .778, p < .01, r^2 = .605$ , and maximize competence,  $r(299) = .822, p < .01, r^2 = .675$ , which reflect that student beliefs about self are strongly connected to their views of how related the classroom is to their views of the world.

Table 7

*Intercorrelations Among Student Perception Variables (RAPS SM) of Student Engagement, Maximize Competence, Identified Self Regulation/Autonomy, Relatedness, Beliefs About Self, and Teacher Support (Question One) (N = 299)*

RAPS SM Variables	2	3	4	5	6
1 Student Engagement	.676**	.695**	.500**	.774**	.595**
2 Maximize Competence	--	.502**	.609**	.822**	.532**
3 Identified Self Regulation	--	--	.391**	.836**	.434**
4 Relatedness	--	--	--	.778**	.508**
5 Beliefs About Self	--	--	--	--	.592**
6 Teacher Support	--	--	--	--	--

Note. \*\* $p < .01$ .

### Research Question Two

Of the CLASS Domains including Emotional Support, Classroom Organization, and Instructional Support, which one best predicts student engagement?

The CLASS domains and dimensions were used as proxies for the teacher practices (i.e., Emotional Support for teacher involvement, Classroom Organization for teacher structure, and Instructional Support for autonomy support). Using the proxies, statistical analyses were performed to determine which domain best predicted student engagement.

*Using CLASS Domains to Predict Students' Perceptions of Their Engagement*

Upon regressing student perceptions of their engagement on the CLASS domains of teacher practices, the stepwise regression analysis revealed that the CLASS Domains of Classroom Organization and Instructional Support accounted for significant, though small, amounts of variance in student engagement. Specifically, Classroom Organization accounted for 4.0% of the variation of student engagement,  $F(1,297) = 12.233, p < .01, R^2 = .040$ , while Instructional Support that had negative coefficients accounted for 8.5% of the variation of student engagement,  $F(1,296) = 28.688, p < .01, R^2 = .085$ . Collectively, Classroom Organization and Instructional Support accounted for 12.4 % of the variance. Emotional Support did not emerge in the model. The model summary is presented in Table 8.

Table 8

*Model Summary Using CLASS to Predict Students' Perceptions of Their Engagement (Question Two) (N = 299)*

Model	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Std. Error of the Estimate	Change Statistics				
					R <sup>2</sup> Change	F Change	df1	df2	Sig. F Change
1	.199(a)	.040	.036	.49432	.040	12.233	1	297	.001
2	.353(b)	.124	.119	.47278	.085	28.688	1	296	.000

a Predictors: (Constant), Classroom Organization Domain Average

b Predictors: (Constant), Classroom Organization Domain Average, Instructional Support Domain Average

*Using CLASS Domains to Predict Teachers' Perceptions of Student Engagement*

Examination of the engagement as reported by the mathematics teachers revealed that the CLASS Domain of Classroom Organization accounted for a significant, though small, amount of variance in teacher perceived student engagement. In particular, Classroom Organization accounted for 6.0% of the variation of teacher perceived student engagement,  $F(1,297) = 19.020$ ,

$p < .01$ ,  $R^2 = .060$ . Emotional Support and Instructional Support did not emerge in the model. The model summary is presented in Table 9.

Table 9

*Model Summary Using CLASS to Predict Teachers' Perceptions of Student Engagement (Question Two) (N = 299)*

Model	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Std. Error of the Estimate
1	.245(a)	.060	.057	.9070234

a Predictors: (Constant), Classroom Organization Domain Average

### *Research Question Three*

Based on the percentage of students identified as disadvantaged and JJRMS administrative assumptions, does poverty play a mitigating role in the relationship between teacher practices and student engagement?

#### *Student Self Assessment of Engagement versus Teacher Assessment of Engagement Controlling for Poverty*

Students' self reported perceptions of their engagement (as assessed by RAPS SM) and their teachers' judgments of engagement (as assessed by RAPS TM) were examined using partial correlations to control for poverty (i.e., whether students were disadvantaged or not and based on student participation in the F/RL program). As was found without controlling for poverty, the partial correlations revealed that the two measures of student engagement were significantly, though moderately correlated,  $r(296) = .398$ ,  $p < .01$ ,  $r^2 = .158$ . Thus, controlling for poverty had little effect on the relation between students' and teachers' perceptions of students' engagement; there was some tendency for students and their teachers to agree regarding the students' level of engagement, though, as before, the relationship was not a particularly strong one.

#### *Teacher Practices and Teacher Perceptions of Student Engagement Controlling for Poverty*

The relationships between teacher practices (as assessed by CLASS) and teacher reported perceptions of their students' engagement (as assessed by RAPS TM) were examined through

the use of partial correlations to control for poverty (i.e., being disadvantaged or not) as was found when not controlling for poverty (see Table 4). Several associations were found to have significant, yet weak, partial correlations and are reported in Table 10. In general, as was found with bivariate correlations, the partial correlations were small (i.e.,  $r(296) = .238$  or less) though significant due to the large sample size (i.e.,  $N = 299$ ) and accounted for relatively little variance (i.e.,  $r^2 = .057$  or less). The partial correlations indicate that poverty (i.e., being disadvantaged or not) did not significantly influence the relationship between teacher practices and teacher reported perceptions of their students' engagement. As was found without controlling for poverty, the pattern of correlations indicated there was some tendency for teacher practices to be associated with teacher perceived student engagement, though the relationships are not particularly strong. Of particular note, there was a small but significant correlation between teacher perceptions of student engagement and the teacher practice of productivity. In addition, there was a small but significant correlation between teacher perceptions of student engagement and Classroom Organization, encompassing the CLASS dimensions, Behavior Management, Productivity, and Instructional Learning Formats.

Table 10

*Partial Correlations( $r$ ) and Variances Accounted for ( $r^2$ ) Between CLASS Teacher Practices and Teacher Perceptions of Student Engagement (RAPS TM) (Question Three) ( $N = 299$ )*

CLASS Variables	Student Engagement TM	
	$r$	$r^2$
Positive Climate	.228**	.052
Negative Climate	.227**	.052
Behavior Management	.235**	.055
Productivity	.238**	.057
Classroom Organization	.238**	.057
Procedures and Skills	.227**	.052

*Note.* \*\* $p < .01$ .

### *Teacher Practices and Student Perceptions of Student Engagement and Beliefs about Self Controlling for Poverty*

To control for poverty when examining the relationships between teacher practice variables (i.e., positive climate, negative climate, teacher sensitivity, behavior management, productivity, instructional learning formats, classroom organization, content understanding, and analysis and problem solving) and students' perceptions of their engagement and beliefs about self, partial correlations were used. Those partial correlations (see Table 11) were found to be small (i.e.,  $r(296) = .264$  or smaller) and to account for relatively little variance (i.e.,  $r^2 = .070$  or smaller). Though significant (i.e.,  $p < .05$  or  $< .01$ ) because the sample size was large, the findings are not particularly meaningful because the associated  $r^2$  values were all found to be very low (i.e.,  $r^2 = .070$  or smaller). Considered together, after taking poverty into account, these partial correlations would indicate that there was some tendency for teacher practice variables to be associated with self reported student engagement and beliefs about self, though the relationships are weak, the same conclusion as when not accounting for poverty.

### *Teacher Practices and Other Student Perception Variables Controlling for Poverty*

While controlling for poverty, the relationships between teacher practice variables and student perception variables were inspected. Specifically, partial correlations between teacher practices of positive climate, negative climate, teacher sensitivity, behavior management, productivity, instructional learning formats, classroom organization, content understanding, and analysis and problem solving and students' perceptions of relatedness, maximize competence, and identified self regulation/autonomy were calculated. The partial correlations were found to be small,  $r(296) = .269$  or smaller, but significant,  $p < .05$  or smaller. The partial correlations are provided in Table 12 and were all deemed significant primarily due to the large sample size (i.e.,  $N = 299$ ), but are not particularly meaningful because the associated  $r^2$  values were all found to be very low, i.e.,  $r^2 = .072$  or smaller. Overall, these partial correlations would indicate

Table 11

*Partial Correlations (r) and Variances Accounted for (r<sup>2</sup>) Among CLASS Teacher Practice Dimensions of Positive Climate, Negative Climate, Teacher Sensitivity, Behavior Management, Productivity, Instructional Learning Formats, CLASS Domain Classroom Organization, CLASS Dimension Analysis & Problem Solving, and Student Perceptions (RAPS SM) of Student Engagement and Beliefs About Self (Question Three) (N =299)*

Teacher Practices CLASS	RAPS SM			
	Student Engagement		Beliefs About Self	
	SM		SM	
	<i>r</i>	<i>r</i> <sup>2</sup>	<i>r</i>	<i>r</i> <sup>2</sup>
Positive Climate	.145*	.021	.148*	.022
Negative Climate	.258**	.067	.253**	.064
Teacher Sensitivity	.148*	.022	.119*	.014
Behavior Management	.178**	.032	.137*	.019
Productivity	.264**	.070	.222**	.049
Instructional Learning Formats	.157**	.025	.122*	.015
Classroom Organization	.192**	.037	.153**	.023
Analysis & Problem Solving	.170**	.029	.146*	.021

*Note.* \*\*  $p < .01$ . \*  $p < .05$ .

that while controlling for poverty, as before there was some tendency for teacher practice variables to be associated with self reported student perceptions of maximizing competence, self regulation, and relatedness, though the relationships are not strong.

Table 12

*Partial Correlations Among CLASS Teacher Practice Dimensions of Positive Climate, Negative Climate, Teacher Sensitivity, Behavior Management, Productivity, Instructional Learning Formats, CLASS Domain Classroom Organization, CLASS Dimensions Content Understanding and Analysis & Problem Solving, and Other Student Perception Variables (RAPS SM) of Maximize Competence, Identified Self Regulation/Autonomy, and Relatedness (Question Three) (N = 299)*

Teacher Practices CLASS	RAPS SM					
	Maximize Competence		Identified Self Regulation		Relatedness	
	<i>r</i>	<i>r</i> <sup>2</sup>	<i>r</i>	<i>r</i> <sup>2</sup>	<i>r</i>	<i>r</i> <sup>2</sup>
Positive Climate	.154**	.024	.076	.006	.153**	.023
Negative Climate	.269**	.072	.140*	.020	.241**	.058
Teacher Sensitivity	.123*	.015	.072	.005	.109	.012
Behavior Management	.145*	.021	.081	.007	.126*	.016
Productivity	.242**	.059	.122	.015	.210**	.044
Instructional Learning Formats	.127*	.016	.074	.005	.111	.012
Classroom Organization	.162**	.026	.089	.008	.141*	.020
Content Understanding	-.168**	.028	-.079	.006	-.154**	.024
Analysis & Problem Solving	.152**	.023	.087	.008	.135*	.018

Note. \*\*  $p < .01$ . \*  $p < .05$ .

### Summary

Overall, no evidence was found that poverty (i.e., whether a student was disadvantaged or not) was related to student or teacher perceptions of engagement. Nor was poverty related to student perceptions of themselves or their teachers, and/or teacher instructional practices.

#### *Research Question Four*

Using CLASS as the measuring instrument, do core content teachers demonstrate involvement, structure, and autonomy support as operationalized by Emotional Support, Classroom Organization, and Instructional Support respectively?

Each core classroom teacher ( $N = 17$ ) was observed during two cycles of two 20 minute-periods for each teacher, resulting in four observations per teacher using the CLASS observational system. Teacher practices were scored using a seven point scale from Low (1-2) to High (6-7) based on the relevant indicators in the dimension. For example, a Low score for Positive Climate, in the Emotional Support Domain, indicated, “There are few, if any, indications that the teacher enjoys warm, supportive, and respectful relationships with students” (Pianta et al., 2006, p. 20). The CLASS instrument has three domains: Emotional Support, Classroom Organization, and Instructional Support. The findings relative to each domain and associated dimensions will be discussed in turn.

#### *Emotional Support*

The first CLASS domain is Emotional Support and includes Positive Climate, Negative Climate, Teacher Sensitivity, and Regard for Adolescent Perspectives. The mean, maximum, and minimum scores for each Emotional Support dimension for mathematics, English, science, and social studies teachers are summarized in Table 13 below. The means generally fall in the Mid range for all groups of teachers (i.e., mathematics, English, science, and social studies) except for Negative Climate where the mean values were all very low. The range of mean values differs considerably by dimension and content area. For example, the range of values in Science was small for Positive Climate while being larger for mathematics, English, and social studies. For Negative Climate, the range of values for mathematics and social studies was large; the values were all the same for English and science. The means and range of values for Teacher Sensitivity were comparable for the four content areas. The means and ranges of values for Regard for Adolescent Perspectives were similar for mathematics, English, and science but much lower for social studies. Following the description of each CLASS teacher practices domain (i.e., Emotional Support, Classroom Organization, and Instructional Support), the specific core content findings for that domain are addressed. A discussion of the findings is provided in Chapter V.

Table 13

*Emotional Support Performance Ranges of Core Teachers Assessed by CLASS; Mathematics (N = 5); English (N = 6); Science (N = 3); Social Studies (N = 3) (Question Four)*

Dimensions	Core Content Teachers			
	Mathematics	English	Science	Social Studies
Positive Climate	5.35 (3.8-6.5)*	5.00 (3.0-6.8)*	5.80 (5.3-6.5)*	4.50 (3.3-6.5)*
Negative Climate	1.1 (1.0-1.5)*	1.0 (1.0-1.0)*	1.0 (1.0-1.0)*	1.2 (1.0-1.5)*
Teacher Sensitivity	4.42 (3.0-5.5)*	4.80 (4.0-6.3)*	5.35 (3.8-6.3)*	3.6 (2.5-5.0)*
Regard for Adolescent Perspectives	4.25 (3.0-5.5)*	4.00 (2.5-5.8)*	5.00 (3.0-6.8)*	3.08 (2.8-3.5)*

\*Range of values.

*Note.* The Negative Climate score is reversed by subtracting it from 8.

*Mathematics.* The Mid range of the average score for Positive Climate (5.35) generally indicates that mathematics teachers enjoyed relationships that were respectful with students. Sometimes, the teachers demonstrated genuine praise and positive expectations. While there was little evidence that peers enjoyed a strong emotional bond influenced by the teachers, there were some positive peer to peer interactions in the classrooms as well as indications that the teachers were interested in the lives of their students beyond the classroom.

The mean for Negative Climate for mathematics teachers was low (i.e., 1.1) with very little variance (e.g., from 1.0 to 1.5 after reversal of the score). The lower the score in this dimension, the better it is for teacher practices. While there was some isolated negativity in the classroom, teachers in this range were not tolerant of behavior that involved inappropriate language, racism, sexism, etc. More often than not, teachers did not yell at students. They did not use punishment to control classes.

The mean for Teacher Sensitivity for JJRMS mathematics teachers was in the Mid range (i.e., 4.42) with a range of 3.0 to 5.5 noted. Thus, there was some indication that the teachers

were responsive to the academic and social needs of their students. While the teachers may not have immediately noticed when individual students needed help, they did provide assistance when asked and made sure that students received what they needed. Typically in the Mid range class, some students would ask for help while others were determined not to ask for help. Additionally, teachers would not routinely promote student requests.

The mathematics teachers at JJRMS recorded a mean of 4.25 with respect to Regard for Adolescent Perspectives with a range of 3.0 to 5.5. Typical of teachers scoring in the Mid range, JJRMS teachers did not give complete control to the students. The classes were teacher centered for the most part. While there were some attempts to make learning relevant to students' experiences, the plan and pace of the classes remained in the control of the teachers rather than being guided by student interest and understanding. Physical movement was generally restricted.

*English.* The mean for Positive Climate for English teachers was 5.0 with a minimum score of 3.0 and a maximum score of 6.8. For teachers scoring in this the Mid range, it was obvious that there were teachers who enjoyed relationships that were respectful with their students. At times, the teachers demonstrated genuine praise and positive expectations. While there was hardly any evidence that peers enjoyed a strong emotional bond influenced by the teachers, there were some positive peer to peer interactions in the classrooms. There was some indication that teachers were interested in the lives of their students beyond the classroom.

The mean for Negative Climate for English teachers was 1.0 that represented the best score relating desired interactions with the students. The lower the score in this dimension that also ranges from 1 to 7, the better it is for desired teacher practices. For the most part, teachers did not yell at students. In isolated instances, punishment was used to control the class. Teachers in this range were not tolerant of behavior that involved inappropriate language, racism, sexism, etc.

The mean for Teacher Sensitivity for English teachers was 4.8 with a minimum score of 4.0 and a maximum score of 6.3. For teachers scoring in this the Mid range, there were some indications that the teachers were responsive to the academic and social needs of students. While teachers may not have noticed immediately when individual students needed help, teachers provided assistance when asked and would make sure that students received materials that were needed. It appeared that students would have felt comfortable in most classrooms asking questions, except that there were few questions.

The mean for Regard for Adolescent Perspectives for English teachers was 4.0 with a minimum score of 2.5 and a maximum score of 5.8. For teachers scoring in this the Mid range, there were indications that teachers maintained control of the lessons, yet there were attempts to make learning relevant to students' experiences. The plan and pace of the class were determined by the teacher rather than by student interest and understanding. Physical movement in the classes was restricted and students generally did not move around the class for activities and instruction.

*Science.* The mean for Positive Climate for science teachers was 5.8 with a minimum score of 5.3 and a maximum score of 6.5. For teachers scoring in this the Mid range, there were indications that the teachers enjoyed relationships that were respectful with students. Teachers typically demonstrated genuine praise and positive expectations. While there was no evidence that peers enjoyed a strong emotional bond influenced by teachers, there were some positive peer to peer interactions in the classrooms. There were indications that JJRMS science teachers in this range were interested in the lives of the students beyond the classroom.

The mean for Negative Climate for science teachers was 1.0 that represents the best score relating desired interactions with students. The lower the score in this dimension that also ranges from 1 to 7, the better it is for desired teacher practices. Teachers scoring in this the Low range rarely, if ever, displayed negativity in the classroom. For the most part, the teachers did not yell at students and did not use punishment to control the class. Teachers in this range did not tolerate behavior that involved inappropriate language, racism, sexism, etc.

The mean for Teacher Sensitivity for science teachers was 5.35 with a minimum score of 3.8 and a maximum score of 6.3. For teachers scoring in this the Mid range, there were indications that the teachers were responsive to the academic and social needs of students. Teachers readily provided assistance when asked and made sure that students received what was needed. While questions were limited, students in these classrooms did not appear hesitant to ask for help. Student requests were not promoted.

The mean for Regard for Adolescent Perspectives for science teachers was 5.00 with a minimum score of 3.0 and a maximum score of 6.8. While teachers scoring in this Mid range did not give complete control to the students, the indication was that they were more ready to do so. While activities were more student centered, the classes were still teacher driven. More often than not, there were attempts to make learning relevant to the students' experiences. The plan

and pace of the class were controlled by the teacher rather than by student interest and understanding. In isolated instances, students moved freely around the class while involved in guided practice.

*Social Studies.* The mean for Positive Climate for social studies teachers was 4.5 with a minimum score of 3.3 and a maximum score of 6.5. For teachers scoring in this the mid range, there were indications that teachers enjoyed relationships that were respectful with students. Sometimes teachers demonstrated genuine praise and positive expectations. While there was no evidence that peers enjoyed a strong emotional bond influenced by the teacher, there were some positive peer to peer interactions in the classroom. There was some indication that the teachers were interested in the lives of the students beyond the classroom.

The mean for Negative Climate for social studies teachers was 1.2. The lower the score, in this dimension that also ranges from 1 to 7, the better it is for desired teacher practices. While there was some negativity demonstrated in isolated instances, teachers scoring in the Low range rarely displayed negativity in the classroom. For the most part, teachers did not yell at students and did not use punishment to control the class. Typically, teachers in this range were not tolerant of behavior that involved inappropriate language, racism, sexism, etc.

The mean for Teacher Sensitivity for social studies teachers was 3.6 with a minimum score of 2.5 and a maximum score of 5.0. For teachers scoring in this the Mid range, there were some indications that the teachers were responsive to the academic and social needs of students. While teachers might not have immediately noticed when individual students needed help, teachers provided assistance when asked and made sure that students received what they needed. Teachers did not routinely promote student requests.

The mean for Regard for Adolescent Perspectives for social studies teachers was 3.08 with a minimum score of 2.8 and a maximum score of 3.5. JJRMS social studies teachers scoring in this the Mid range offered no control to the students. The teachers were the center of the classroom. Attempts to make learning relevant to students' experiences were controlled. The plan and pace of the class were determined by the teachers rather than by the student interest and understanding. In isolated instances, students moved around the classroom without permission, causing distractions.

### *Classroom Organization*

The second CLASS domain is Classroom Organization and it incorporates Behavior Management, Productivity, and Instructional Learning Formats dimensions. The mean, maximum, and minimum scores for each Classroom Organization dimension for mathematics, English, science, and social studies teachers are summarized in Table 14 below. The means for the various dimensions generally fall in the Mid-range for all four groups of teachers (i.e., mathematics, English, science, and social studies) and the ranges of means within each dimension for each content area are comparable. Findings for each content area follow, and a discussion of the findings is provided in Chapter V.

Table 14

*Classroom Organization Performance Ranges of Core Teachers Assessed by CLASS; Mathematics (N = 5); English (N = 6); Science (N = 3); Social Studies (N = 3) (Question Four)*

Dimensions	Core Content Teachers			
	Mathematics	English	Science	Social Studies
Behavior Management	5.00 (3.5-6.5)*	5.00 (3.0-7.0)*	5.33 (4.5-6.8)*	3.70 (2.5-6.0)*
Productivity	6.00 (5.0-7.0)*	6.00 (5.0-7.0)*	6.00 (5.0-7.0)*	4.3 (3.0-7.0)*
Instructional Learning Formats	5.05 (3.0-6.5)*	4.50 (4.3-5.3)*	4.60 (3.5-6.3)*	2.83 (2.0-4.0)*

\* Range of values.

*Mathematics.* The mean for Behavior Management for mathematics teachers was 5.0 with a minimum score of 3.5 and a maximum score of 6.5. At this Mid range, the teachers typically responded to student misbehavior in a mix of proactive and reactive approaches. From time to time, misbehavior detracted from instructional time. While teachers might have used effective praise to deescalate misbehavior and the fallout from it, misbehavior was occasionally accentuated, thereby escalating situations.

The mean for Productivity for mathematics teachers was 6.0 with a minimum score of 5 and a maximum score of 7. At the High end of this dimension, teachers were efficient with time

and provided multiple opportunities for students to be involved in routines, even if some of the activities were teacher centered. Productivity neither addresses student engagement nor the quality of learning opportunities, but the range of opportunities. Teachers were prepared for their lessons and were efficient in transitioning from one activity to the other.

The mean for Instructional Learning Formats for mathematics teachers was 5.05 with a minimum score of 3.0 and a maximum score of 6.5. At the high end of the Mid range of scores, teachers typically had learning objectives though they might not have been clear at times to the students. Typically, information was presented via an overhead projector. More often than not, opportunities for students to explore the content, inquire about it, and interact with it (i.e., hands-on activities) were not observed. While teachers generally showed enthusiasm for the content, students, for the most part, did not appear to share that enthusiasm.

*English.* The mean for Behavior Management for English teachers was 5 with a minimum score of 3.0 and a maximum score of 7. At this the Mid range, JRRMS teachers responded, more often than not, to student misbehavior with a proactive approach. More often than not, procedures, and rules and regulations were administered in a consistent manner. At some times, misbehavior detracted from instructional time. Generally, teachers used effective praise to deescalate misbehavior. In isolated instances, teachers accentuated the misbehavior and escalated the misbehavior.

The mean for Productivity for English teachers was 6.0 with a minimum score of 5 and a maximum score of 7. At the High end of this dimension, the teachers were efficient with time and provided multiple opportunities for students to “engage in” activities. Productivity in the classrooms neither addressed student engagement nor the quality of learning opportunities, but the range of opportunities. Teachers were prepared for lessons and efficient in transitioning from one activity to the other.

The mean for Instructional Learning Formats for English teachers was 4.5 with a minimum score of 4.3 and a maximum score of 5.3. At the Mid range of scores, teachers typically had learning objectives though they were not generally shared with the students. Information was presented typically via an overhead projector or through the use of worksheets. Opportunities for students to explore the content, inquire about it, and interact with it (i.e., hands-on activities) were not observed. More often than not, teachers demonstrated enthusiasm for the lesson. Students appeared to be “engaged” at some times.

*Science.* The mean for Behavior Management for science teachers was 5.33 with a minimum score of 4.5 and a maximum score of 6.8. At this Mid range, teachers typically responded to student misbehavior proactively. Procedures and rules and regulations were consistently applied in classrooms, but were inconsistent among classes. At times, misbehavior detracted from instructional time. In isolated instances, misbehavior was accentuated and allowed to escalate.

The mean for Productivity for science teachers was 6.0 with a minimum score of 5.0 and a maximum score of 7.0. At the High end of this dimension, the teachers were efficient with time and provided multiple opportunities for students to learn. Productivity neither addresses student engagement nor the quality of learning opportunities, but the range of opportunities. Teachers were prepared for lessons and, for the most part, they were efficient in transitioning from one activity to the other.

The mean for Instructional Learning Formats for science teachers was 4.6 with a minimum score of 3.5 and a maximum score of 6.3. At the Mid range of scores, teachers typically had learning objectives though the objectives were not clear to students at times. In some instances, information was presented in a manner to address several learning modalities. Typically, information was presented via an overhead projector or through the use of worksheets or workbooks. Opportunities for students to explore the content, inquire about it, and interact with it (i.e., hands-on activities) were not observed. Students appeared to be engaged sometimes.

*Social Studies.* The mean for Behavior Management for social studies teachers was 3.7 with a minimum score of 2.5 and a maximum score of 6.0. At this Mid range, more often than not, teachers responded to student misbehavior in reactive approaches. Occasionally, misbehavior detracted from instructional time. More often than not, misbehavior was accentuated causing an escalation of the situation.

The mean for Productivity for social studies teachers was 4.3 with a minimum score of 3.0 and a maximum score of 7.0. At the Mid range of this dimension, teachers were not consistent in maximizing time on task. From time to time, there were distractions that disrupted instruction. Teachers were prepared for lessons with worksheets and teacher directed activities using overhead projectors.

The mean for Instructional Learning Formats for social studies teachers was 2.83 with a minimum score of 2.0 and a maximum score of 4.0. At the Low range of scores, the teachers had

learning objectives that were not clear to the students. Information was presented typically via an overhead projector or through the use of worksheets. Opportunities for students to explore the content, inquire about it, and interact with it (i.e., hands-on activities) were not observed. While teachers demonstrated enthusiasm for the content, students did not appear to share the enthusiasm. More often than not, activities resembled Haberman’s (1991) pedagogy of poverty (i.e., giving information, asking questions, making assignments, giving tests, punishing noncompliance, giving homework, etc.)

*Instructional Support*

The final CLASS domain is Instructional Support. The dimensions of this domain encompass Procedures and Skills, Content Understanding, Analysis and Problem Solving, and Quality of Feedback. The mean, maximum, and minimum scores for the Instructional Support dimensions for mathematics, English, science, and social studies teachers are summarized in Table 15. The means for the various dimensions generally fall in the Mid-range for all four groups of teachers (i.e., mathematics, English, science, and social studies) and the ranges of means are comparable within each dimension for each content area. The findings for each core content area follow, and a discussion of the findings is provided in Chapter V.

Table 15

*Instructional Support Performance Ranges of Core Teachers Assessed by CLASS; Mathematics (N = 5); English (N = 6); Science (N = 3); Social Studies (N = 3) (Question Four)*

Dimensions	Core Content Teachers			
	Mathematics	English	Science	Social Studies
Procedures & Skills	5.10 (4.0-6.5)*	4.80 (4.0-6.0)*	5.00 (4.0-6.0)*	3.66 (2.0-6.0)*
Content Understanding	6.10 (5.0-6.8)*	4.88 (4.0-6.0)*	6.00 (5.8-6.3)*	4.70 (3.3-6.5)*
Analysis & Problem Solving	4.90 (3.0-6.5)*	4.12 (3.0-5.3)*	4.83 (4.3-5.3)*	3.16 (2.0-5.0)*
Quality of Feedback	4.90 (3.5-6.5)*	4.40 (3.5-5.3)*	5.08 (4.0-6.0)*	3.50 (2.5-5.5)*

\* Range of values.

*Mathematics.* The mean for Procedures and Skills for mathematics teachers was 5.10 with a minimum score of 4.0 and a maximum score of 6.5. At the high end of the Mid range, the teachers would sometimes identify the context in which the student would use a particular procedure or skill, but then not give ample time for student centered application of the skill or exploration of the procedure. Sometimes, the teachers made use of the students' prior knowledge in helping students to connect new knowledge to what students already knew. Neither during guided practice nor during independent practice did students have the opportunity to engage in metacognitive processing (i.e., articulating what made them successful in getting the assignment correct and why).

The mean for Content Understanding for mathematics teachers was 6.1 with a minimum score of 5.0 and a maximum score of 6.8. At the lower end of the High end of Content Understanding, the teachers typically demonstrated a high level of understanding of content. While the teachers consistently incorporated multiple examples and non examples for the students, the students typically listened while the teachers "talked them through" the examples. Teachers, more often than not, linked new concepts to prior knowledge in a controlled (i.e., not exploratory) manner.

The mean for Analysis and Problem Solving for mathematics teachers was 4.9 with a minimum score of 3.0 and a maximum score of 6.5. In this Mid range of performance, the teacher hardly if ever provided for autonomy support giving students opportunities to exercise independence in learning (e.g., discussing the process they used to get their individual answers). Students were not routinely required to apply analysis, reasoning, and problem solving to their learning. As a rule, metacognition (e.g., thinking about the process of learning) was not a strategy observed in these classes.

The mean for Quality of Feedback for mathematics teachers was 4.9 with a minimum score of 3.5 and a maximum score of 6.5. At the Mid range, the teachers typically provided feedback that only addressed correct answers rather than the process through which the students had gone to get their responses. Student praise was sometimes specific, but most of the time it was general (i.e., "Good job!"). Teachers typically provided feedback in a timely fashion.

*English.* The mean for Procedures and Skills for English teachers was 4.8 with a minimum score of 4.0 and a maximum score of 6.0. At the Mid range, the teachers routinely

identified the context in which students would use a particular skill, but kept the application of the skill at a controlled level (i.e., with students telling the teacher what to write on the overhead). Sometimes, the teachers made use of the students' prior knowledge in helping students to connect new knowledge to what was already known. Feedback from independent practice was timely, but did not promote increased student performance (i.e., the use of questioning procedures that would help students increase inductive and deductive reasoning).

The mean for Content Understanding for English teachers was 4.88 with a minimum score of 4.0 and a maximum score of 6.0. Typically, at the Mid range of Content Understanding, English teachers demonstrated an understanding of content required for the lesson; however, the content knowledge did not translate into their being able to facilitate higher levels of student thinking. Teachers, more often than not, incorporated multiple examples and linked new concepts to prior knowledge in a controlled (i.e., not exploratory) manner.

The mean for Analysis and Problem Solving for English teachers was 4.12 with a minimum score of 3.0 and a maximum score of 5.3. In this Mid range of performance, teachers did not provide autonomy support giving students opportunities to exercise independence in learning (e.g., discussing the process they used to provide their individual responses). Students were not required routinely to apply analysis, reasoning, and problem solving to their learning. Teachers routinely did the thinking and students the listening. Metacognition (e.g., thinking about the process of learning) was not a strategy observed in these classes.

The mean for Quality of Feedback for English teachers was 4.4 with a minimum score of 3.5 and a maximum score of 5.3. At the Mid range, teachers typically provided feedback that addressed the correct answer rather than the process of learning. Student praise was often specific (i.e., "I like the way you are paying attention to the assignment..." on the overhead), but it was general at times. Teachers typically provided feedback in a timely fashion.

*Science.* The mean for Procedures and Skills for science teachers was 5.0 with a minimum score of 4.0 and a maximum score of 6.0. At the Mid range, teachers discussed the context in which students would have used a particular procedure or skill, but then students did not have opportunities for application with feedback. Sometimes, the teachers made use of students' prior knowledge in helping students to connect new knowledge to what was already known. The teachers, generally, discussed more than one example or non example in the use of procedures; however, no opportunities for application were observed. When there was

independent or guided practice, feedback was not observed to be effective for increased student performance (i.e., student use of inductive and deductive reasoning).

The mean for Content Understanding for science teachers was 6.0 with a minimum score of 5.8 and a maximum score of 6.3. Typically, at the Mid range of Content Understanding, teachers demonstrated understanding of content required for the lesson; however, it did not translate into facilitating higher levels of student understanding. Teachers, more often than not, incorporated multiple examples and linked new concepts to prior knowledge in a controlled (i.e., not exploratory) manner.

The mean for Analysis and Problem Solving for science teachers was 4.83 with a minimum score of 4.3 and a maximum score of 5.3. In this Mid range of performance, teachers did not provide for autonomy support giving students opportunities to exercise independence in learning (e.g., discussing the process they used to get their individual answers). Students were not required routinely to apply analysis, reasoning, and problem solving to their learning. As a rule, metacognition (e.g., thinking about the process of learning) was not a strategy observed in these classes.

The mean for Quality of Feedback for science teachers was 5.08 with a minimum score of 4.0 and a maximum score of 6.0. At the Mid range, the teachers routinely provided feedback that mostly addressed what was correct rather than the process of learning. Student praise was sometimes specific, but it was general at times. Teachers typically provided feedback in a timely fashion.

*Social Studies.* The mean for Procedures and Skills for social studies teachers was 3.66 with a minimum score of 2.0 and a maximum score of 6.0. At the Mid range, teachers identified the context of the lesson and made use of students' prior knowledge in helping students to connect new knowledge as teachers "talked" the students through lesson presentations. Teachers typically talked about more than one example or non example during their presentations.

The mean for Content Understanding for teachers was 4.7 with a minimum score of 3.3 and a maximum score of 6.5. At the Mid range of Content Understanding, teachers demonstrated understanding of content required for the lesson; however, their demonstrated knowledge did not facilitate higher levels of student processing. While the teachers consistently incorporated multiple examples for the students, the students typically listened while the teachers "talked them

through” the examples. Teachers, more often than not, linked new concepts to prior knowledge in a controlled (i.e., not exploratory) manner.

The mean for Analysis and Problem Solving for social studies teachers was 3.16 with a minimum score of 2.0 and a maximum score of 5.0. In this Mid range of performance, teachers did not typically provide for autonomy support giving students opportunities to exercise independence in learning (e.g., discussing the processes they used to get their individual responses). Students were not required routinely to apply analysis, reasoning, and problem solving to their learning. Metacognition (e.g., thinking about the process of learning) was not a strategy observed in these classes.

The mean for Quality of Feedback for social studies teachers was 3.5 with a minimum score of 2.5 and a maximum score of 5.5. At the Mid range, teachers typically provided feedback that addressed what was correct rather than addressing the process of learning. Teachers typically provided feedback in a timely fashion.

#### Summary of Chapter IV

##### *Research Question One*

Statistical analyses conducted to determine relationships between teacher practices that focus on the provision of involvement, structure, and autonomy support and student engagement identified a number of statistically significant correlations. However, the correlations were small and accounted for little variance. An interpretation of these findings is provided in Chapter V.

##### *Research Question Two*

Instructional Support (with negative coefficients) and Classroom Organization emerged as the domains of teacher practices most highly related to student engagement. While they were both statistically significant, the variances were small, indicating weak relationships among the variables. These findings are discussed in Chapter V.

##### *Research Question Three*

Partial correlations were conducted to control for poverty while the associations between teacher practices that focus on the provision of involvement, structure, and autonomy support and student engagement were examined. The result of these analyses revealed that poverty was not related to variables of interest and did not substantially alter the outcomes of the statistical

analyses conducted in association with Research Question One. Correlations remained small, though significant, and accounted for little variance between teacher practices focusing on the provision of involvement, structure, and autonomy support and student engagement. These findings are discussed in Chapter V.

#### *Research Question Four*

The means for the various dimensions of the CLASS domains were found to fall generally in the Mid range for all four groups of teachers (i.e., mathematics, English, science, and social studies). However, while the ranges of means were comparable within each dimension for each content area, there were differences noted. The findings for the core content areas are discussed in Chapter V.

## CHAPTER V

### CONCLUSIONS AND RECOMMENDATIONS

Chapter V summarizes the findings of the research study to determine the relationship between teacher practices of involvement, structure, and autonomy support and student engagement by drawing conclusions related to the four research questions and the investigation of teacher-student interactions. The chapter presents an examination of the implications of the findings and includes recommendations for further research and practice in the field of education.

#### *Research Question One*

In an economically-depressed, rural middle school setting:

What is the relationship between teacher practices centering on the provision of involvement, structure, and autonomy support and student engagement?

Based on analyses of the student engagement data assessed by the Research Assessment Package for middle schools (RAPS SM) and analyses of the teacher practices data assessed by the Classroom Assessment Scoring System (CLASS), discussion of results of the study follows.

#### *Student Self Assessment of Engagement versus Teacher Assessment of Engagement*

If teachers report high engagement on the part of individual students, those students will report engagement in the class as well (Connell & Wellborn, 1991; Decker et al., 2007; Klem & Connell, 2004). While the two measures of student engagement were found to be significant (i.e.,  $p < .01$ ), the amount of variance accounted for was small at 16%. This would indicate, however, that there was some tendency for students and their teachers to agree regarding student levels of engagement even though the relationship was not a particularly strong one. These findings are in keeping with those of Connell and Wellborn (1991), Decker et al. (2007), and Klem and Connell (2004).

#### *Teacher Practices and Teacher Perceptions of Student Engagement*

The relationships between teacher practices and teacher perceptions of student engagement were found to be weak (i.e.,  $r \leq .246^{**}$ ). This lack of association presented worrisome implications relating to teacher practices and student perceptions of student engagement relevant to the CLASS dimension, Productivity. With six percent of the variation in

teacher practices and teacher perceptions of student engagement coming solely from teacher productivity (as opposed to instructional learning formats for example), it would indicate that students and teachers alike had similar views relevant to productivity and student engagement. Relevant to the findings related to teacher practices and student perceptions of student engagement and beliefs about self, this chapter provides additional discussion.

### *Teacher Practices and Student Perceptions of Student Engagement and Beliefs about Self*

Similar to what other researchers have reported (e.g., Connell & Wellborn, 1991; Klem & Connell, 2004), the present study revealed significant relationships between self assessed student engagement and teacher classroom practices (e.g., student engagement and climate of the classroom). However, though the various relationships were deemed statistically significant, the relationships were not strong. Several of the stronger associations included Student Engagement and Productivity ( $r = .270^{**}$ ), Student Engagement (SM) and (the absence of) Negative Climate ( $r = .262^{**}$ ), Beliefs about Self and (the absence of) Negative Climate ( $r = .255^{**}$ ), and Beliefs about Self and Productivity ( $r = .226^{**}$ ). While the variances accounted for between student engagement and productivity and beliefs about self and productivity were small (i.e.,  $r \leq .262^{**}$ ), productivity was a recurrent theme relevant to teacher and student perceived student engagement. The dimensions that are more indicative of best practice in the teaching and learning process did not emerge. Quality of Feedback and Analysis and Problem Solving (of the Instructional Support domain) that would increase opportunities for student autonomy and students to own their work (McCombs & Whisler, 1997; Newmann, 1992; Oldfather & McLaughlin, 1993; Pianta et al., 2006) were not found to be related to student engagement, at least within the context of student engagement as defined by the RAPS instruments. It is possible that students and teachers might perceive productivity as student engagement. Furthermore, productivity could encompass the routines that could encompass the routines that Haberman (1991) described as the pedagogy of poverty. While these routines that include “giving information, asking questions, giving directions, making assignments, monitoring seatwork, reviewing assignments, giving tests, reviewing tests, assigning homework, reviewing homework, settling disputes, punishing noncompliance, marking papers, and giving grades” (Haberman, 1991, p.1) may give students the appearance of being engaged, such activities mainly address the efficiency of the CLASS Productivity dimension. Productivity is “not a code about the quality of instruction or activities or student engagement” (Pianta et al., 2006, p.51).

### *Teacher Practices and Other Student Perception Variables*

Overall, there was some tendency for teacher practice variables to be associated with self-reported student perceptions of maximizing competence, identified self regulation/autonomy, and relatedness though the relationships showed little strength (see Table 5). For example, the higher correlations were between (a) negative climate (the absence of negativity) and maximize competence ( $r \leq .272^{**}$ ); (b) negative climate and relatedness ( $r \leq .243^{**}$ ); (c) productivity and maximize competence ( $r \leq .246^{**}$ ); and (d) productivity and relatedness ( $r \leq .212^{**}$ ). The CLASS dimension, Negative Climate, alludes to the lack of teacher sarcasm, the lack of teacher disrespect for students, lack of bullying in the classroom, etc. (Pianta et al., 2006). The student engagement literature addresses teacher involvement, teacher structure, and teacher autonomy support as variables that influence student engagement (Connell & Wellborn, 1991; Klem & Connell, 2004; Newmann, 1992; Pianta, et al., 2006; Skinner & Belmont, 1993; Wentzel, 1997), but involvement (i.e., the teacher's caring or social, emotional support coupled with academic support) is more than just the absence of negativity. The question remains as to whether or not students see the absence of negativity as involvement. Similarly, there is a question as to whether or not students see productivity as represented in Connell and Wellborn's structure influencing student competence (i.e., the "I can do this and be successful" assessment of requisite class work). Again, productivity gauges teacher efficiency, not teacher best practice or student engagement.

### *Relationships Among Teacher Practice Variables*

While the "dimensions are intended to be analytically distinct, although overlap is apparent ..." (Pianta et al., 2006, p.11), the large and significant intercorrelations among the CLASS teacher practices variables would indicate that the various scales of CLASS are not independent and the overlap is noteworthy. An example can be seen in the correlation between positive climate and negative climate (i.e.,  $r = .925^{**}$ ). An exception to the large, significant relationships is Productivity and teacher Content Understanding (i.e.,  $r = .195^{**}$ ). Other notable exceptions to the pattern are the correlations observed between content understanding and the other measures of teacher practices from the CLASS instrument where the correlations were found to range from -.007 for Negative Climate to .555\*\* for Instructional Learning Formats. Pianta et al. (2006) did address the situation where the observer might not be objective, gaining

an overall picture of the teacher and spending the rest of the observation time confirming that overall picture. Thus, observer subjectivity can sometimes play a role in the data collection process. However, focusing on implications of the findings, the question arises as to whether or not an absence of negativity (i.e., Negative Climate) is equal to Positive Climate (i.e., frequent praise from the teacher, positive interactions, and positive expectations from the teacher) from the perspective of students or teachers. The absence of negativity (i.e., Negative Climate) is not conceptually the same as the proactive perspective of Positive Climate (Pianta et al., 2006).

### *Relationships Among Student Perception Variables*

Marks (2000) noted there is a relative absence of personal influence (i.e., prior experience) on student engagement in the context of the classroom with “authentic work and systems of social support” where personal background effects are eliminated (p.174). The assertions of Marks, in accord with those of Yahir (2000) and Wenglinsky (2002), posited that teacher structure could mediate prior experience and personal background effects (SES, gender, etc.). Marks’ findings are also in keeping with those of Connell and Wellborn’s (1991) motivational model of the effect of children’s psychological needs on their engagement. In the present study, the relationships among student perception variables are reasonably strong particularly in reference to beliefs about self and relatedness, maximize competence, and identified self regulation/autonomy. These are all student perception variables of Connell and Wellborn’s model and are requisite to student engagement that is influenced by teacher involvement, structure, and autonomy support. Therefore, it appears that prior experience could have a relative absence of influence on student engagement (Marks, 2000). At the same time, the question remains as to what the students and teachers view as an effective classroom where students are engaged. Is it simply one of productivity and a relative absence of negativity?

### *Research Question Two*

Of the CLASS Domains including Emotional Support, Classroom Organization, and Instructional Support, which one best predicts student engagement?

As depicted in Connell and Wellborn’s (1991) motivational model of the effects of children’s psychological needs on their engagement, teacher involvement influences student relatedness, teacher structure influences student competence, and teacher autonomy support influences student autonomy. Thus, in accordance with the model, relatedness, competence, and

autonomy are requisite to student engagement. Effective classrooms provide meaningful instruction affording students choices/options representing autonomy, provide teacher involvement influencing student relatedness in the sense that connections/applications were made to the realities of the students and provide structure via predictable teacher behaviors (Knapp et al., 1995).

Of the significant statistical models that emerged from statistical analyses to predict the CLASS domain that best influenced student engagement, Classroom Organization was the domain that was common to each regression analysis, though the amounts of variance accounted for were small (i.e.,  $R^2 \leq .040$ ). This finding indicated that as students perceived increased engagement, they had tendency to perceive increased teacher classroom organization. It was Instructional Support, however, that exerted the most influence on student engagement indicating that as Instructional Support increased, student perceived engagement decreased. It is interesting that the data suggest that Instructional Learning Formats (i.e., the activities and assignments “uncovered” by the teacher during the class period) played no role in engagement (e.g., engagement SM, maximize competence, etc.). While academic objectives cannot be met unless teachers provide caring classrooms, structure is needed to build competence and foster autonomy (Newmann, 1992). According to Skinner and Belmont (1993), a classroom that is rich in structure is one that has opportunities for students to demonstrate skills in metacognition (e.g., learning how to learn). While teacher structure is requisite to student engagement (Connell & Wellborn, 1991), these findings do not appear to be in keeping with the kind of “structure” that is requisite to student engagement (Knapp et al., 1995; Marks, 2000; Yahir, 2000).

Insofar as predictive validity was concerned, CLASS developers have reported that “the most consistent and robust classroom quality dimension for predicting growth across time was Instructional Support of the classroom as assessed by the CLASS” (Pianta et al., 2006, p. 116). Again, where Instructional Support emerged as significant in the present analyses, the standardized and unstandardized regression coefficients were negative. Though the variances were small (i.e.,  $R^2 \leq .085$ ), these findings suggested that as students perceived increased instructional support, student perceived engagement tended to decrease (e.g., student relatedness, maximize competence, and student perceived engagement SM). The findings would not be in keeping with those reported by Pianta et al. (2006).

### *Using CLASS Domains to Predict Students' Perceptions of Their Engagement*

Regression analyses revealed that the CLASS Domains of Classroom Organization and Instructional Support combined accounted for a significant (i.e.,  $p < .01$ ), though small amount of variance in students' perceptions of their engagement (i.e.,  $R^2 = .142$ ). According to Ferguson (1991), a teacher's providing involvement, structure, and autonomy support for student engagement accounted for more than any reform initiative ever. In the present study, Classroom Organization is the proxy for Connell and Wellborn's structure and it is interesting to note that Productivity has been a recurring theme wherever Classroom Organization has emerged. It is also interesting to note that this occurrence has been primarily to the exclusion of the Instructional Learning Formats dimension that focuses on what the teacher does to "maximize student engagement and opportunities to learn" (Pianta et al., 2006, p. 57).

Instructional Support is the domain where teacher practices can facilitate autonomy with students taking ownership in and responsibility for their learning (Pianta et al., 2006). However, the standardized and unstandardized regression coefficients were found to be negative, relevant to Instructional Support.

### *Using CLASS Domains to Predict Teachers' Perceptions of Student Engagement*

In examining the predictive relationship between teacher perceptions of student engagement and the CLASS dimensions of teacher practices, it was again revealed that Classroom Organization accounted for a significant (i.e.,  $p < .01$ ), yet small, amount of variance (i.e., 5.5%) in teacher perceived student engagement. From the perceptions of students and teachers alike, Classroom Organization played a small, but significant, role in predicting student engagement SM.

### *Research Question Three*

Based on the percentage of students identified as disadvantaged and JJRMS administrative assumptions, does poverty play a mitigating role in the relationship between teacher practices and student engagement?

According to Black (2006), student disengagement during the middle school years is far more prevalent among the disadvantaged. "...Worryingly, it is far more prevalent amongst students growing up in already disadvantaged families and communities" (p.1). Yahir (2000) further posited that student engagement is socially stratified (i.e., affected by socio-economic

status or poverty). While 41% of the students at JJRMS were designated as being disadvantaged because they participated in the school's FRL program and while the school administration had speculated that poverty might play a role in student engagement, there was no evidence to support that speculation. With and without controlling for poverty using participation in the FRL program as an indicator of being disadvantaged, correlation analyses indicated that poverty played a miniscule role in student engagement at JJRMS. Conventional wisdom dictates that as students progress through the grades, it is harder to get a definitive count on students who are disadvantaged. Older students tend neither to disclose need for nor participate in the FRL program even when need is an issue. Therefore, it is possible that the lack of a significant finding may be an artifact associated with voluntary participation in the school's FRL program. The question also arises as to whether a student's individual poverty may not be as important as the collective level of poverty at a school.

#### *Research Question Four*

Using CLASS as the measuring instrument, do core content teachers demonstrate involvement, structure, and autonomy support as operationalized by Emotional Support, Classroom Organization, and Instructional Support respectively?

For each of the three domains, Emotional Support, Classroom Organization, and Instructional Support, the CLASS scores ranged from 1.0 (Low) to 7.0 (High) with the JJRMS core content teachers ( $N = 17$ ) of mathematics, English, science, and social studies scoring in the Mid range (Pianta et al., 2006) the majority of the time. However, there were notable exceptions. For example, for Negative Climate (the absence of negativity) where the best score is 1.0, English and science teachers scored 1.0; mathematics teachers scored a 1.1; and social studies teachers scored a 1.2. In addition, teachers of social studies scored in the Low range on Instructional Learning Formats; teachers of mathematics scored in the High range on Productivity and Content Understanding; and English and science teachers scored in the High range on Productivity. Further, as has been found by others (Connell & Wellborn, 1991; Klem & Connell, 2004; Knapp et al., 1995; Marks, 2000; Pianta et al., 2006), it was observed that teachers at the Mid range in performance did not consistently employ those teacher practices that influence engagement. For instance, teacher productivity does not address quality interactions that facilitate engagement, but rather efficiency in transitioning from one activity to another. Productivity could indeed be representative of Haberman's (1991) pedagogy of poverty. This

pedagogy includes a teacher's daily routine of "giving information, asking questions, giving directions, making assignments, monitoring seatwork, reviewing assignments, giving tests, reviewing tests, assigning homework, reviewing homework, settling disputes, punishing noncompliance, marking papers, and giving grades" (p.1). According to Marks, "authentic instructional work is a powerful contributor to engagement" (p. 169) rather than work that is rote and routine. Newmann (1992), in accord with Marks, attested to a significant body of literature that addressed "how students invest much of their energy in performing rituals, procedures, and routines" (p. 17) to the neglect of higher order skills such as metacognition and prediction that Pianta et al. (2006) address in the CLASS dimension, Analysis and Problem Solving.

Based on CLASS performance scoring, the overall performance of the core teachers at JJRMS would not be in keeping with the findings of Oldfather (1993) who indicated that the responsive teacher shares power and responsibility within a structure that promotes competence and autonomy support. Indeed, teacher-student interactions in the mid-range would not be consistent in facilitating competence and autonomy. While the researcher's findings were based on four observations in each core content teacher's classroom, the researcher observed certain commonalities from one content area to the other including (a) Content Understanding: Teachers, more often than not, incorporated multiple examples and linked new concepts to prior knowledge in a controlled (i.e., not exploratory) manner); (b) Analysis and Problem Solving: Metacognition (e.g., thinking about the process of learning) was not a strategy observed in these classes; and (c) Instructional Learning Formats: Information was presented typically via an overhead projector or through the use of worksheets or workbooks. Routine opportunities for students to explore the content, inquire about it, and interact with it (i.e., via hands-on activities) were not observed. The observations would suggest that these factors should be addressed through professional development relevant to best practice in the teaching and learning process.

The Mid range performance of JJRMS core content teachers suggested to the researcher that the teachers were not fully aware of the opportunities they have to influence engagement that in turn influences student achievement and performance in the classroom (Connell & Wellborn, 1991). While the teachers' classrooms were generally absent of negativity and at the same time productive; while the teachers typically demonstrated respect for their students; and while the teachers have generally demonstrated understanding of their content areas and have demonstrated some enthusiasm in their classes, JJRMS teachers did not demonstrate that they

had full knowledge of best practice behaviors according to the High ranges of CLASS (Pianta et al., 2006).

### Limitations of the Study

The instruments used provide the basis for one of the potential limitations associated with the present study. While the RAPS and CLASS instrument developers provide reliability and validity information (Pianta et al., 2006) (IRRE, 1998), the CLASS developers acknowledge that they are seeking further validation of the CLASS at the secondary level (Pianta et al., 2006). At the same time that data provided by RAPS SM revealed student perceived engagement, the data provided no distinctions between engagement influenced by a teacher who demonstrated best practice behaviors as opposed to a teacher whose performance was mediocre. The data do not provide for differentiations between the two types of teachers. Indeed, a teacher who was a “talking head” (i.e., demonstrating Haberman’s [1991] pedagogy of poverty) could be perceived the same as a teacher who demonstrated best practice behaviors (i.e., facilitating metacognition), according to the design of the RAPS instrument. Few instruments have been developed that capture how well the teacher demonstrates best practice behaviors in the classroom (Brophy, 1986). The development of such instruments is an ongoing process and must be considered in terms of the appropriateness of the assessment for those being assessed.

A second limitation associated with the present study is that the researcher was not a part of the administration of the RAPS SM assessment. Although the school officials who administered the RAPS SM had been trained by the researcher, based on the instructions from the Institute for Reform and Research (IRRE, 1998), the researcher was not a witness to the fidelity of the administration of the assessment. In addition, the teachers may not have devoted their full attention to the completion of their questionnaires because of the routine pressures associated with their job.

A third limitation of this study is that there was a single observer of teacher behavior. Even though the researcher was trained in a reliable and valid classroom assessment system, the researcher has biases in terms of how classrooms should be run and how students should be engaged. Those biases may well have entered into the observation process and affected the data obtained and conclusions drawn.

Another limitation of the study is the lack of external validity since it was conducted in only one school, which may or may not be representative of other middle schools having similar

demographic compositions (McMillan & Schumacher, 2006). Having other schools with which to compare results might have provided a different perspective regarding the findings of the present study and, as a result, different interpretations. Exacerbating this limitation is the fact that there was hardly any variance in the instruction of JJRMS teachers (i.e., teachers did not facilitate higher order thinking skills).

#### Recommendations for Further Research

An instrument is deemed valid if it measures what it is designed to measure (Vogt, 2005). While the developers of the CLASS report face validity, criterion validity, and predictive validity (Pianta et al., 2006), further research is needed to demonstrate the construct validity of instrument. Whether or not the various domains and dimensions assess whether the teacher is “good” versus being “not so good” may be an issue. Since CLASS is a relatively new instrument, there is much opportunity for further validation.

The external validity of the study is limited. The applicability of the findings to other settings would necessitate conducting the study in different schools in different localities using appropriately representative samples of schools, teachers, and students. One of the findings from this study is that all realities are not the same (e.g., students in different schools in the same school division or in different school divisions probably would have different perspectives on student engagement based on their experiences). Based on that acknowledgement, one aspect of future research should focus on the determination of what students (and teachers) really believe engagement to be and what students’ expectations would be in reference to their views of engagement. Another aspect of such a research endeavor would be to explore the sources of disagreement between teachers’ and students’ assessments of student engagement since the relationship between the two was only moderate.

Additionally, an avenue of meaningful future research would be to explore the statistically significant, though weak, finding that as productivity increased students had the tendency to perceive that they were more engaged. As suggested by Haberman (1991), this finding may relate to the pedagogy of poverty that includes a teacher’s daily routine of “giving information, asking questions, giving directions, making assignments, monitoring seatwork, reviewing assignments, giving tests, reviewing tests, assigning homework, reviewing homework, settling disputes, punishing noncompliance, marking papers, and giving grades” (p.1). The CLASS dimension, Productivity, does not address quality student teacher interactions, but rather,

teacher efficiency in executing routines (Pianta et al., 2006). Conceptually, productivity is not engagement but perhaps students confuse productivity with engagement in learning. What is equally as concerning and in need of further study is the relationship between Productivity and teacher perceptions of student engagement to determine whether teachers value productivity more than relevant authentic instruction that incorporates ownership of student work, student voice, and analysis and problem solving. Further research is needed to address this question.

The RAPS has been used in many studies related to student engagement (Connell, Spencer, & Aber, 1994; Klem & Connell, 2004; Tucker et al., 2002). Based on its popularity and widespread use, perhaps the additional research should center on adding guidelines for a qualitative component to the RAPS or other similar instruments. Replication of this study should include a component additional to the RAPS SM, the RAPS, TM, the CLASS assessment for certain teachers, and the qualitative CLASS descriptions of observations employed. Additionally, further study should convene focus groups of the students and teachers of the study to assess their perceptions of engagement before ever starting the study.

#### Recommendations for Educators

The findings of this research study are more suggestive than definitive in pointing to teacher practices that appear to support student relatedness, competence, and autonomy. However, experience dictates that focused and sustained professional development provides the opportunity for teachers to learn more about best practice and their power to engage students. In that context, the study findings would suggest that teachers should be sensitive to the students' instructional needs (Knapp et al., 1995; Marks, 2000) and consider ways to facilitate student engagement by providing Connell and Wellborn's (1991) requisite structure through the provision of materials that "promoted awareness, exploration, inquiry, and/or interaction with the content" (Pianta et al., 2006, p. 58). With the understanding that "teachers who think that they should make a difference, do..." (LoGerfo, 2006, p. 68), there are several implications that educational leaders should consider:

1. While the JIRMS data did not indicate causation, the data from the present study did provide some evidence there was a tendency for teacher practice variables (operationalized by CLASS domains and dimensions) to be associated with self reported student engagement and beliefs about self. As Connell and Wellborn's (1991) motivational model stated, teacher involvement, structure, and autonomy

support influence student engagement and student engagement in turn influences student achievement and performance. Therefore, educational leaders should ensure that teachers are reminded that their teaching behaviors are linked to student achievement and performance.

2. Individuals have compelling needs to feel a sense of relatedness (i.e., the notion that “I belong in this classroom because my teacher makes me feel good...;” as student relatedness is influenced by teacher involvement in the classroom); competence (i.e., the notion that “I can be successful...;” as teacher structure influences student competence); and autonomy (i.e., the notion that “I can have some control in my success...and what I’m doing has meaning in my life...;” as teacher autonomy support influences student autonomy) (Connell & Wellborn, 1991; Klem & Connell, 2004; Skinner & Belmont, 1993; Newmann, 1992). The JJRMS findings indicated that there was some tendency for teacher practice variables to be associated with self reported student perceptions of relatedness, competence, and autonomy that influence engagement. As Reeves (2005) has noted, teachers should recognize that “The keys to improved academic achievement are professional practices of teachers and leaders, not the economic, ethnic, or linguistic characteristics of the students” (p.374), and that teacher practices are almost as important to student outcomes as student characteristics/personal background effects (Darling-Hammond, 1996; Knapp et al., 1995; LoGerfo, 2006; Marks, 2000; Sanders & Rivers, 1996; Wenglinsky, 2002). Based on the qualitative and quantitative data collected and analyzed, there was no suggestion that student economic characteristics (i.e., poverty as operationalized by F/RL participation) played any role, however, in JJRMS teacher or student perceived engagement. This study did not focus on ethnic or linguistic characteristics. Accordingly, whether students are disadvantaged or not, educational leaders should ensure that teachers are reminded that (1) students are individuals with the same compelling needs as everyone else: to belong, to experience some success, and to feel as if they have some control over their success and (2) teacher best practice behaviors can mediate personal background effects (i.e., prior educational experience, SES, gender, etc.) and influence student engagement.

3. The domain that best predicted JJRMS student engagement was that of Classroom Organization; Emotional Support that operationalized Involvement did not emerge in the models summarizing the statistical analyses. This finding would indicate that while teacher involvement is a key influence in student engagement, involvement does not supplant structure that influences student competence. A class that is rich in structure would also include opportunities for students to learn to exercise metacognitive skills as students learn how they best learn (Skinner & Belmont, 1993). Indeed, Klem and Connell (2004) posited that students having a sense of relatedness would buy time for the teacher to provide that structure that would incorporate repeated opportunities to build student competence from repeated student success. Accordingly through focused and sustained professional development, educational leaders should ensure that teachers are reminded that while Teacher Involvement is requisite to engagement, Teacher Involvement alone will not influence student engagement. The Classroom Organization of Pianta et al. (2006) that incorporates behavior management, productivity, and most importantly instructional learning formats (i.e., lessons that address multiple modalities via meaningful activities, assignments and materials) is requisite to that Teacher Structure that promotes routine student success/competence and influences engagement.
4. A tendency for teacher perceived student engagement to be associated with teacher practices was revealed in the present study. This would seem to indicate that teachers should take advantage of their interdisciplinary teaming opportunities not only to further relatedness, but to work toward affecting that “structure” that influences student competence. By doing so, teachers would be better equipped to design instructional activities that would also influence student autonomy. In middle schools, “...Interdisciplinary teaming appears to have the strongest impact on student teacher relationships in low SES schools” (Arhar & Kromrey, 1993, p.1). With the instructional teams that are in place at the school, JJRMS can make routine use of student assessment data within regularly scheduled meetings for instructional team planning. In those meetings, the teams can determine which strategies best meet the needs of their students, relevant to the development of higher order thinking. The findings reported in the present study, coupled with those detailed by Arhar and

Kromrey, pave the way for teachers to be empowered to influence student relatedness, structure, and autonomy. Accordingly, educational leaders should ensure that time and resources (i.e., the allotment of time for interdisciplinary team planning) are designed and monitored to maximize opportunities for teachers to influence student engagement.

5. The CLASS domain of Instructional Support (with negative standardized and unstandardized coefficients) was not found to play a role in influencing student engagement. Specifically, analysis and problem solving (included in that domain) was not observed to be facilitated by JJRMS teachers. However, extra time and thought are needed to implement lessons that provoke higher order thinking including the analysis and problem solving of Pianta et al. (2006). Activities that are more efficient include those described in Haberman's (1991) pedagogy of poverty: "giving information, asking questions, giving directions, making assignments, monitoring seatwork, reviewing assignments, giving tests, reviewing tests, assigning homework, reviewing homework, settling disputes, punishing noncompliance, marking papers, and giving grades" (p.1). Students are often required to invest immeasurable energy in routines that preempt opportunities to exercise higher order thinking as was evident in classes with high teacher productivity. According to Newmann (1992), "Engagement involves psychological investment in learning, comprehending, or mastering skills, and crafts, not simply a commitment to complete tasks...." (p.17). The pedagogy of poverty (Haberman, 1991) can easily manifest itself in instruction unless teachers take risks to make instruction more student centered with opportunities for students to demonstrate their knowledge through exploration, inquiry, reasoning, and other higher order thinking processes. The CLASS domain Instructional Support was not found to exert any influence on student engagement at JJRMS. Using the CLASS assessment, Instructional Learning Formats was not observed to provide opportunities for students to demonstrate their knowledge through interaction with content based on student interests and relevance (i.e., application of knowledge through student demonstrations, role playing, and/or debates, etc.). These findings suggest Haberman's pedagogy of poverty was being implemented at JJRMS. The pedagogy of poverty does not influence engagement

(Connell & Wellborn, 1991; Knapp et al., 1995; Marks, 2000; Newmann, 1992; Oldfather, 1993; Yahir, 2000). Accordingly through focused and sustained professional development and subsequent monitoring of valued teacher behaviors, educational leaders should ensure that teachers incorporate in their lessons multiple modalities for learning, relevance based in part on student realities and interests, and opportunities for student analysis and problem solving (Pianta et al., 2006). Such strategies go beyond the knowledge level of learning (i.e., completing fill-in-the-blank-worksheets or responding to the teacher as the teacher fills in the blank through use of an overhead projector) and promote psychological investment in learning (Newmann, 1992).

It is not enough to expose teachers to these notions. In order for them to become fully aware of how they can make “the difference,” teachers need focused and sustained professional development that also affords them the same opportunities for analysis and problem solving and metacognitive processing that they need to provide their students. Along with focused and sustained professional development, teachers should also have opportunities for guided practice (i.e., through the efforts of peer coaches who can help them “master prescribed behaviors” prior to the teacher’s evaluation by the school’s administration). Teachers should also receive from their administrators the quality of feedback prescribed by Pianta et al. (2006) that is timely and specific in addressing (for teachers) best practice behaviors.

#### Summary of the Research Study

While poverty (i.e., disadvantaged, per NCLB subgroups) did not play a role in student engagement, the study suggested that there is a role played by a pedagogy of poverty at JJRMS (Haberman, 1991). Even though the variances were small, teacher productivity had the tendency to play a role in teacher and student perceptions as the perceptions related to student engagement. In order for teachers to understand their power in influencing engagement that influences student performance (Connell & Wellborn, 1991), teachers need focused and sustained professional development as outlined by the researcher, relevant to Research Question Four. In order for students to become excited about learning (Oldfather, 1993), students need to be empowered by teacher structure and autonomy support as well as teacher involvement that influence student engagement (Connell & Wellborn, 1991).

Student engagement, according to Klem and Connell (2004), is one of the most “robust predictors” of student performance regardless of the student’s social or economic status. Yahir (2000) posited further, “... most empirical studies in this domain have remained distanced one step from the arena in which actual learning takes place: student’s engagement versus alienation from instruction...” (p.247). If student engagement is a mediator of SES and prior experience and if engagement can minimize the probability of student dropouts and maximize the probability of school completion (IRRE, 1998), then students and the profession would benefit from knowing how to manipulate classroom contexts to promote student engagement. Looking at the need for teacher provision of involvement, structure, and autonomy support, Decker et al. (2007) and Skinner and Belmont (1993) join other researchers who relate, “An important issue for future study is which aspects of the school and classroom context can promote engagement” (Fredricks et al., 2004, p.13). Classroom context inclusive of teacher practices and engagement was the focus of this study.

While the present study attempted to address the gap in the literature focusing on the multifaceted construct of student engagement and the teacher behaviors that influence student engagement, there is much work yet to be done. Future research can help to unravel assessing the nexus between the interface of the psychological needs of learners (Connell & Wellborn, 1991; Klem & Connell, 2004; Newmann, 1992; Skinner & Belmont, 1993; Wentzel, 1997; Yahir, 2000) and the quality of the context in which these teacher-student interactions occur (Knapp et al., 1995; Marks, 2000; Oldfather, 1993; Pianta et al., 2006). This will occur as more research is conducted linking instruments such as CLASS and RAPS in the classroom where what teachers do matters more than any school reform initiative (Ferguson, 1991; Wenglinsky, 2002). According to student engagement literature, proximal influences (e.g., teacher-student interactions) rather than distal influences (e.g., school policies) exert more influence on learning (Marks, 2000; Pianta et al., 2005; Ryan et al., 1994; Wang et al., 1993); and learning is influenced by student engagement (Fredricks et al., 2004; Tucker et al, 2002; Yahir, 2000). With each effort that is made toward identifying the nexus between teacher practices and student engagement, the profession comes one step closer to meeting Dewey’s (1956) challenge to do a better job in preparing a vast majority of learners to be responsible and productive citizens by motivating and engaging these learners in the classroom.

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APPENDIX A  
RAPS SM QUESTIONNAIRE

Student ID \_\_\_\_\_

Research Assessment Package for Schools – Student Report

Read each of the following items. For each one, tell us how true it is for YOU by bubbling in one of the four answers. VERY TRUE, SORT OF TRUE, NOT VERY TRUE, or NOT AT ALL TRUE. There are no right or wrong answers.

- |   | (4)            | (3)               | (2)                | (1)                  |
|---|----------------|-------------------|--------------------|----------------------|
|   | A              | B                 | C                  | D                    |
|   | Very True      | Sort of True      | Not Very True      | Not at all True      |
| 1. My teacher has plenty of time for me.<br>Perceived Teacher Support; Item # itxs8               | A<br>Very True | B<br>Sort of True | C<br>Not Very True | D<br>Not at all True |
| 2. I work hard on my schoolwork.<br>Ongoing Engagement; Item # eoxs7                              | A<br>Very True | B<br>Sort of True | C<br>Not Very True | D<br>Not at all True |
| 3. When I'm with my teacher, I feel good.<br>Perceived Relatedness; Item # rtes5                  | A<br>Very True | B<br>Sort of True | C<br>Not Very True | D<br>Not at all True |
| 4. I do my homework because I like to do it.<br>Perceived Autonomy; Item # arix2                  | A<br>Very True | B<br>Sort of True | C<br>Not Very True | D<br>Not at all True |
| 5. I don't know how to keep myself from getting bad grades.<br>Perceived Competence; Item # csuf2 | A<br>Very True | B<br>Sort of True | C<br>Not Very True | D<br>Not at all True |
| 6. My teacher is fair with me.<br>Perceived Teacher Support; Item # stxs11                        | A<br>Very True | B<br>Sort of True | C<br>Not Very True | D<br>Not at all True |
| 7. I work on my classwork because it's interesting.<br>Perceived Autonomy; Item # arix8           | A<br>Very True | B<br>Sort of True | C<br>Not Very True | D<br>Not at all True |

8.	When something happens to me in school (like not doing well on a test or not being able to answer an important question), I say the teacher didn't cover the things on the test.	A Very True	B Sort of True	C Not Very True	D Not at all True
	Reaction to Challenge; Reversed; Item # ecjx3				
9.	I wish I were someone else.	A Very True	B Sort of True	C Not Very True	D Not at all True
	Perceived Relatedness; Reversed; Item # rswx4				
10.	I'm pretty lucky at getting good grades.	A Very True	B Sort of True	C Not Very True	D Not at all True
	Perceived Competence; Item # cpls2				
11.	I do my homework because I'll feel bad about myself if I don't do it.	A Very True	B Sort of True	C Not Very True	D Not at all True
	Perceived Autonomy; Item # arjx1				
12.	When I'm with my teacher, I feel mad.	A Very True	B Sort of True	C Not Very True	D Not at all True
	Perceived Relatedness; Reversed; Item # rtf2				
13.	When I think about myself, I feel bad.	A Very True	B Sort of True	C Not Very True	D Not at all True
	Perceived Relatedness; Reversed; Item # rsef1				
14.	I don't try very hard in school.	A Very True	B Sort of True	C Not Very True	D Not at all True
	Ongoing Engagement; Reversed; Item # eoxf3				
15.	When something bad happens to me in school (like not doing well on a test or not being able to answer an important question), I try to figure out what I did wrong so that it won't happen again.	A Very True	B Sort of True	C Not Very True	D Not at all True
	Reaction to Challenge; Item # ecpx2				
16.	I can get my teacher to like me.	A Very True	B Sort of True	C Not Very True	D Not at all True
	Perceived Competence; Item # cpps2				
17.	I can work really hard in school.	A Very True	B Sort of True	C Not Very True	D Not at all True
	Perceived Competence; Item # cpes2				

18.	My teacher's expectations for me are way off base.	A Very True	B Sort of True	C Not Very True	D Not at all True
	Perceived Teacher Support; Reversed; Item # stxf12				
19.	If I'm unlucky, I won't do well in school.	A Very True	B Sort of True	C Not Very True	D Not at all True
	Perceived Competence; Item # cs1f1				
20.	My teacher cares about how I do in school.	A Very True	B Sort of True	C Not Very True	D Not at all True
	Perceived Teacher Support; Item # itxs6				
21.	I can do well in school if I want to.	A Very True	B Sort of True	C Not Very True	D Not at all True
	Perceived Competence; Item # ccxs5				
22.	When I'm with my classmates, I feel ignored.	A Very True	B Sort of True	C Not Very True	D Not at all True
	Perceived Relatedness; Reversed; Item # rref1				
23.	I pay attention in class.	A Very True	B Sort of True	C Not Very True	D Not at all True
	Ongoing Engagement; Item # eaxs2				
24.	My teacher doesn't explain why we have to learn certain things in school.	A Very True	B Sort of True	C Not Very True	D Not at all True
	Perceived Teacher Support; Reversed; Item # ytxf3				
25.	If I don't do well on my schoolwork, it's because I didn't try hard enough.	A Very True	B Sort of True	C Not Very True	D Not at all True
	Perceived Competence; Item # csef3				
26.	When something bad happens to me in school (like not doing well on a test or not being able to answer an important question), I get angry at the teacher.	A Very True	B Sort of True	C Not Very True	D Not at all True
	Reaction to Challenge; Reversed; Item # ecjx4				
27.	When I'm with my teacher, I feel unhappy.	A Very True	B Sort of True	C Not Very True	D Not at all True
	Perceived Relatedness; Reversed; Item # rtef4				
28.	I wish I felt better about myself.	A Very True	B Sort of True	C Not Very True	D Not at all True
	Perceived Relatedness; Reversed; Item # rswx3				

- |   |                   |                      |                       |                         |
|---|-------------------|----------------------|-----------------------|-------------------------|
| 29. The rules in my classroom are clear.<br><br>Perceived Teacher Support; Item # stxs9   | A<br>Very<br>True | B<br>Sort of<br>True | C<br>Not Very<br>True | D<br>Not at all<br>True |
| 30. My teacher doesn't seem to have enough time for me.<br><br>Perceived Teacher Support; Reversed; Item # itxf5  | A<br>Very<br>True | B<br>Sort of<br>True | C<br>Not Very<br>True | D<br>Not at all<br>True |
| 31. I do my homework because I want to learn new things.<br><br>Perceived Autonomy; Item # ardx7  | A<br>Very<br>True | B<br>Sort of<br>True | C<br>Not Very<br>True | D<br>Not at all<br>True |
| 32. I'm not very smart at school.<br><br>Perceived Competence; Item # cpdf2   | A<br>Very<br>True | B<br>Sort of<br>True | C<br>Not Very<br>True | D<br>Not at all<br>True |
| 33. When something bad happens to me in school (like not doing well on a test or not being able to answer an important question), I try to see what I did wrong.<br><br>Reaction to Challenge; Item # ecpx4 | A<br>Very<br>True | B<br>Sort of<br>True | C<br>Not Very<br>True | D<br>Not at all<br>True |
| 34. When I'm with my classmates, I feel mad.<br><br>Perceived Relatedness; Reversed; Item # rref2   | A<br>Very<br>True | B<br>Sort of<br>True | C<br>Not Very<br>True | D<br>Not at all<br>True |
| 35. I am unlucky in school.<br><br>Perceived Competence; Item # cplf1   | A<br>Very<br>True | B<br>Sort of<br>True | C<br>Not Very<br>True | D<br>Not at all<br>True |
| 36. I do my homework because it is fun.<br><br>Perceived Autonomy; Item # arix1   | A<br>Very<br>True | B<br>Sort of<br>True | C<br>Not Very<br>True | D<br>Not at all<br>True |
| 37. I don't know what it takes to get good grades in school.<br><br>Perceived Competence; Item # csus3  | A<br>Very<br>True | B<br>Sort of<br>True | C<br>Not Very<br>True | D<br>Not at all<br>True |
| 38. Trying hard is the best way for me to do well in school.<br><br>Perceived Competence; Item # cses2  | A<br>Very<br>True | B<br>Sort of<br>True | C<br>Not Very<br>True | D<br>Not at all<br>True |
| 39. When I think about myself, I feel happy.<br><br>Perceived Relatedness; Item # rses4   | A<br>Very<br>True | B<br>Sort of<br>True | C<br>Not Very<br>True | D<br>Not at all<br>True |

40. I work on my classwork because I'll be ashamed of myself if it doesn't get done.	A Very True	B Sort of True	C Not Very True	D Not at all True
Perceived Autonomy; Item # arjx2				
41. My teacher isn't fair to me.	A Very True	B Sort of True	C Not Very True	D Not at all True
Perceived Teacher Support; Reversed; Item # stxf11				
42. I often come to class unprepared.	A Very True	B Sort of True	C Not Very True	D Not at all True
Ongoing Engagement; Reversed; Item # epxf1				
43. My teacher thinks what I say is important.	A Very True	B Sort of True	C Not Very True	D Not at all True
Perceived Teacher Support; Item # ytxs16				
44. I wish I liked myself better.	A Very True	B Sort of True	C Not Very True	D Not at all True
Perceived Relatedness; Reversed; Item # rswx5				
45. When something bad happens to me in school (like not doing well on a test or not being able to answer an important question), I say it was the teacher's fault.	A Very True	B Sort of True	C Not Very True	D Not at all True
Reaction to Challenge; Reversed; Item # ecjx1				
46. My teacher likes the other kids in my class better than me.	A Very True	B Sort of True	C Not Very True	D Not at all True
Perceived Teacher Support; Reversed; Item # itxf3				
47. I work on my classwork because doing well in school is important to me.	A Very True	B Sort of True	C Not Very True	D Not at all True
Perceived Autonomy; Item # ardx8				
48. When I'm with my classmates, I feel good.	A Very True	B Sort of True	C Not Very True	D Not at all True
Perceived Relatedness; Item # rres1				
49. My teacher interrupts me when I have something to say.	A Very True	B Sort of True	C Not Very True	D Not at all True
Perceived Teacher Support; Reversed; Item # ytxf6				

50.	The best way for me to get good grades is to get my teacher to like me.	A Very True	B Sort of True	C Not Very True	D Not at all True
	Perceived Competence; Item # csp2				
51.	I can't do well in school.	A Very True	B Sort of True	C Not Very True	D Not at all True
	Perceived Competence; Reversed; Item # ccxf3				
52.	My teacher doesn't make clear what he/she expects of me in school.	A Very True	B Sort of True	C Not Very True	D Not at all True
	Perceived Teacher Support; Reversed; Item # stxf8				
53.	When something bad happens to me in school (like not doing well on a test or not being able to answer an important question), I tell myself I'll do better next time.	A Very True	B Sort of True	C Not Very True	D Not at all True
	Reaction to Challenge; Item # ecpx1				
54.	When I'm with my teacher, I feel happy.	A Very True	B Sort of True	C Not Very True	D Not at all True
	Perceived Relatedness; Item # rtes2				
55.	When I think about myself, I feel proud.	A Very True	B Sort of True	C Not Very True	D Not at all True
	Perceived Relatedness; Item # rses8				
56.	I work on my classwork because I'll feel guilty if I don't do it.	A Very True	B Sort of True	C Not Very True	D Not at all True
	Perceived Autonomy; Item # arjx7				
57.	I can't work very hard in school.	A Very True	B Sort of True	C Not Very True	D Not at all True
	Perceived Competence; Item # cpef3				
58.	When I'm with my classmates, I feel unhappy.	A Very True	B Sort of True	C Not Very True	D Not at all True
	Perceived Relatedness; Reversed; Item # rref4				
59.	My teacher tries to control everything I do.	A Very True	B Sort of True	C Not Very True	D Not at all True
	Perceived Teacher Support; Reversed; Item # ytxf1				
60.	I can't get my teacher to like me.	A Very True	B Sort of True	C Not Very True	D Not at all True
	Perceived Competence; Item # cppf2				

- |  |                   |                      |                       |                         |
|--|-------------------|----------------------|-----------------------|-------------------------|
| 61. My teacher likes to be with me.<br><br>Perceived Teacher Support; Item # itxs10                      | A<br>Very<br>True | B<br>Sort of<br>True | C<br>Not Very<br>True | D<br>Not at all<br>True |
| 62. I'm pretty smart in school.<br><br>Perceived Competence; Item # cpas4                                | A<br>Very<br>True | B<br>Sort of<br>True | C<br>Not Very<br>True | D<br>Not at all<br>True |
| 63. I work on my classwork because I think it is important.<br><br>Perceived Autonomy; Item # ardx9      | A<br>Very<br>True | B<br>Sort of<br>True | C<br>Not Very<br>True | D<br>Not at all<br>True |
| 64. How important is it to you to do the best you can in school?<br><br>Ongoing Engagement; Item # eyxx3 | A<br>Very<br>True | B<br>Sort of<br>True | C<br>Not Very<br>True | D<br>Not at all<br>True |

## APPENDIX B

### MIDDLE SCHOOL OPTIONS I: COMPOSITE SCORES

#### 1. The RAPS TM Composite

A single summary score is derived from this three-item teacher report. One of the items is negative (reflecting lack of engagement) and must be reversed by subtracting each student's score from five. The Student Engagement composite score can then be created by obtaining the mean of the three items.

STUDENT ENGAGEMENT = Mean of items teexs5, tebxs1, and tebxf2 (rev.)

#### 2. RAPS SM Composites

The 84 items of the RAPS SM are combined to create a total of 19 composite scores tapping three major domains and seven subdomains. By domain, the Composites are as follows:

##### A. DOMAIN: ENGAGEMENT – 3 Composites

1. Subdomain: Ongoing Engagement
2. Subdomain: Reaction to Challenge
3. Domain Summary Score: ENGAGEMENT

##### B. DOMAIN: BELIEFS ABOUT SELF – 13 Composites

###### Subdomain: Perceived Competence – 3 Composites

1. Construct: Promote Competence
2. Construct: Undermine Competence
3. Subdomain Summary Score: Maximize Competence

###### Subdomain: Perceived Autonomy – 3 Composites:

4. Construct: Introjected Self-Regulation
5. Construct: Identified Self-Regulation
6. Construct: Intrinsic Self-Regulation

###### Subdomain: Perceived Relatedness – 6 Composites:

7. Construct: Emotional Security with Self
8. Construct: Satisfaction with Self
9. Construct: Parental Emotional Security
10. Construct; Teacher Emotional Security
11. Construct: Peer Emotional Security
12. Subdomain Summary Score: Relatedness
13. Domain Summary Score: BELIEFS ABOUT SELF

C. DOMAIN: EXPERIENCE OF INTERPERSONAL SUPPORT – 3  
Composites

- 14. Subdomain: Parental Support
- 15. Subdomain: Teacher Support
- 16. Domain Summary Score: INTERPERSONAL SUPPORT

In creating summary scores reflecting domains, subdomains, and constructs, negative items must be reversed prior to compositing. Because all items are responded to on a four-point scale, item reversals can be accomplished by subtracting each individual student's score on that item from five (so that 4 becomes 1, 3 becomes 2, 2 becomes 3, and 1 becomes 4). In the following formulas, items that must be reversed are indicated by (rev.).

A. Engagement Domain (See item number in parentheses)

<p>Composite Subdomain: Level Composite: Ongoing Engagement Subdomain Level Composite Reaction to Challenge</p>	<p>Construction: Mean of the 5 ongoing engagement items: eaxs2, eoxs7, eyxx3, eoxf3(rev.) and epxf1(rev.) Mean of the 3 positive coping and 3 projection items (all projection items reversed):  ecpx1, ecpx2, ecpx4, ecjx1(rev.), ecjx3(rev.), and ecjx4(rev.)</p>
<p>Domain Level Composite: Engagement</p>	<p>Mean of the 2 subdomain level composites: Ongoing Engagement and Reaction to Challenge</p>

## B. Beliefs About Self Domain

### Subdomain: Perceived Competence

Composite  
Construct Level Composite  
Promote Competence

Construction  
8 items: ccxs5, ccxf3(rev.), csef3, cses2, cpas4, cpps2, cpls2

Formula:

ccx=mean of ccxs5 and ccxf3(rev.)  
cse=mean of csef3 and cses2

**Promote Competence**=(ccx x 4) + (cse x cpes2) +  
(cpas4 x 4) +  
(cpps2 x 4) + (cpls2 x 4)

Construct Level  
Composite:  
Undermine Competence

8 items: csuf2 csus3, cpef3, cpaf2, csps2, cppf2, csf1, cplf1

Formula:

csu=mean of csuf2 and csus3

**Undermine Competence**=(csu x 4) + (cpef3 x 4) +  
(cpaf2 x 4) +  
(csps2 x cppf2) + (csf1 x cplf1)  
(Promote Competence – Undermines Competence) +  
94) ÷ 40

Subdomain Level  
Composite:  
Maximize Competence

### Subdomain: Perceived Autonomy

Composite  
Construct Level  
Composite:  
Introjected Self-Regulation  
Construct Level  
Composite:  
Identified Self-Regulation  
Construct Level Composite  
Intrinsic Self Regulation  
(No subdomain level  
composite)

Construction  
Mean of the 3 *introjected self-regulation* items: arjx1, arjx2, and arjx7

Mean of the 3 *identified self-regulation* items: ardx7, ardx8, and ardx9

Mean of the 3 *intrinsic self-regulation* items: arix1, arix2, and arix8

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## Subdomain: Perceived Relatedness

Composite:	Construction
Construct Level Composite Emotional Security with Self	Mean of the 3 <i>Emotional Security with Self</i> items: rses4, rses8, and rsef11(rev.)
Construct Level Composite Satisfaction with Self	Mean of the 3 <i>Satisfaction with Self</i> items (all reversed): rswx3(rev.), rswx4(rev.) and rswx5(rev.)
Construct Level Composite: Parental Emotional Security	Mean of the 3 <i>Parental Emotional Security</i> items: rpes1, rpef2(rev.), and rpef4(rev.)
Construct Level Composite: Teacher Emotional Security	Mean of the 4 <i>Teacher Emotional Security</i> items: rtes2, rtes5, rtef2(rev.), and rtef4(rev.)
Construct Level Composite: Peer Emotional Security	Mean of the 4 <i>Peer Emotional Security</i> items: rres1, rref1(rev), rref2(rev.), and rref4(rev.)
Subdomain Level Composite: Relatedness	Mean of 5 construct level composites: Emotional Security with Self, Satisfaction with Self, Parental Emotional Security, Teacher Emotional Security, and Peer Emotional Security

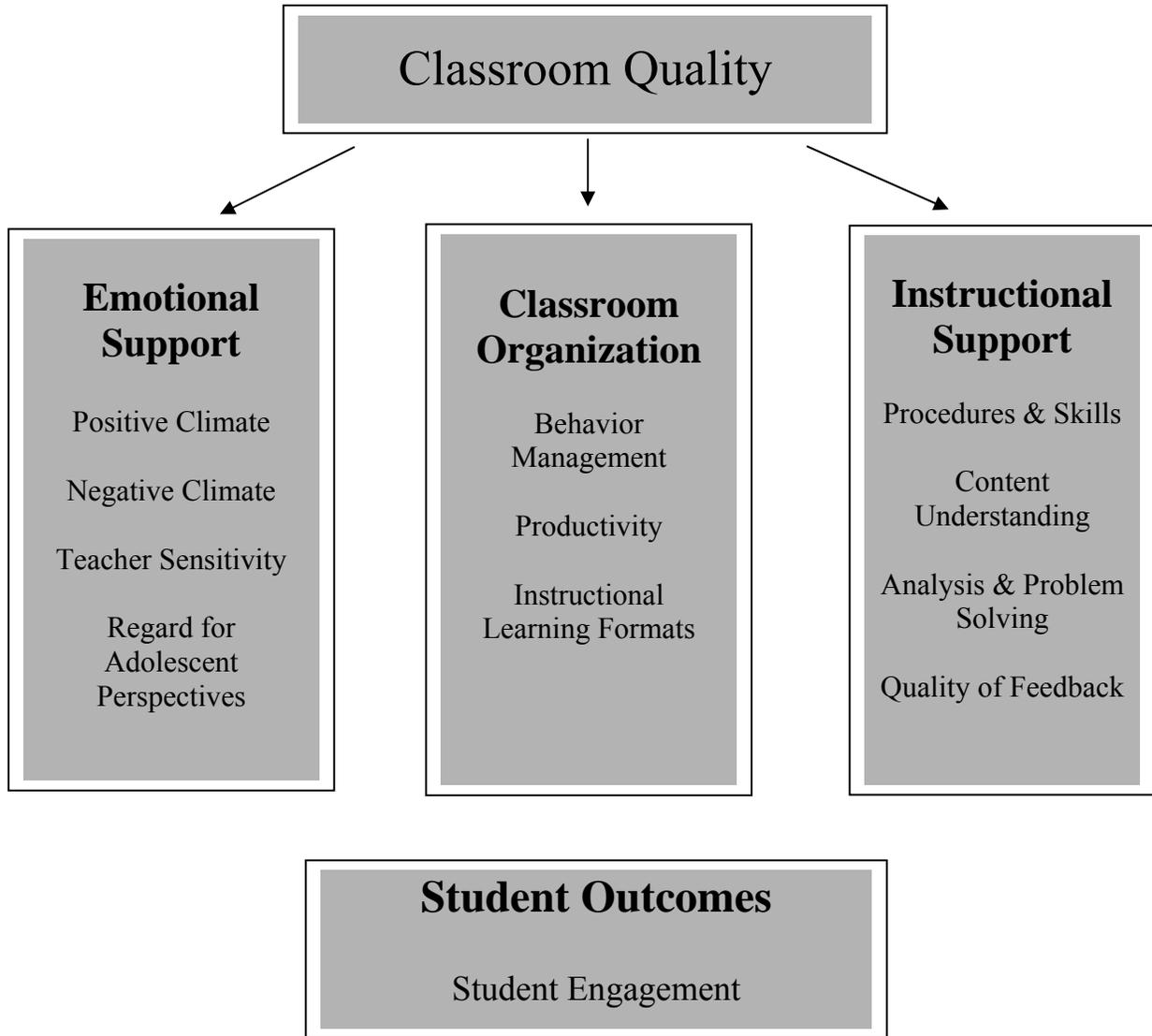
## Beliefs About Self Domain Summary

Composite:	Construction:
Domain Level Composite: Beliefs About Self	Mean of the 2 subdomain level composites and 1 perceived autonomy construct level composite: Control Maximization, Relatedness, and Identified Self-Regulation

### C. Experience of Interpersonal Support Domain

Composite: Subdomain Level Composite: Parental Support	Construction: Mean of the 17 Parental Support Items:  2 <i>Involvement – School Context</i> items: ipxs2 and ipxf6(rev.);  3 <i>Autonomy Support – School Context</i> items: ypxs 14, ypxf14(rev.), and ypxf15(rev.);  3 <i>Structure – School Context</i> items: spxs11, spxf4(rev.), and Spxf10(rev.);  4 <i>Involvement – General Context</i> items: ipgs1, ipgs2, lpgf1(rev.), and ipgf3(rev.)  2 <i>Autonomy Support – General Context</i> items: ypgs1 and ypgf2(rev.); and  3 <i>Structure – General Context</i> items: spgs4, spgf1(rev.), and spgf2(rev.)
Subdomain Level Composite: Teacher Support	Mean of the 14 Teacher Support Items:  5 <i>Involvement</i> items: itxs6, itxs8, itxs10, itxf3(rev.) and itxf5(rev.);  4 <i>Autonomy Support</i> items: ytxs16, ytxf1(rev.), ytxf3(rev.), and ytxf6(rev.); and  5 <i>Structure</i> items: stxs9, stxs11, stxf8(rev.), stxf11(rev.), and stxf12(rev.)
Domain Level Composite: Experience of Interpersonal Support	Mean of the 2 subdomain level composites: Parental Support and Teacher Support

APPENDIX C  
CLASS DOMAINS AND DIMENSIONS



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APPENDIX D  
CLASS SCORING

**Scoring within Each Cycle.** CLASS scoring should be completed immediately after each 20-minute observation cycle using the Observation Sheet. Observers should give a score for each dimension using a 7-point range. The dimension descriptions provide a thorough description of each dimension at the Low (1, 2), Mid (3, 4, 5), and High (6, 7) ranges. Observers should carefully review the dimension descriptions and make judgments based on the following:

Low		Mid			High	
1	2	3	4	5	6	7
The low range description fits the classroom/teacher very well. All, or almost all, relevant indicators in the low range are present.	The low range description mostly fits the classroom/teacher but there are one or two indicators that are in the mid range.	The mid range description mostly fits the classroom/teacher but there are one or two indicators in the low range.	The mid range description fits the classroom/teacher very well. All, or almost all, relevant indicators in the mid range are present.	The mid range description mostly fits the classroom/teacher but there are one or two indicators in the high range.	The high range description mostly fits the classroom/teacher but there are one or two indicators in the mid range.	The high range description fits the classroom/teacher very well. All, or almost all, relevant indicators in the high range are present.

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APPENDIX E  
THE RAPS™ QUESTIONNAIRE

Teacher ID: \_\_\_\_\_

**Research Assessment Package for Schools – Teacher Report**

**On the following pages, please write in a student name or identification number for each of the students in your class who are participating in this study. Then, for EACH STUDENT, tell us how true each of the three items is for THAT STUDENT by circling one of the four answers: VERY TRUE, SORT OF TRUE, NOT VERY TRUE, or NOT AT ALL TRUE.**

Student ID: \_\_\_\_\_

- |  |           |              |               |                 |
|--|-----------|--------------|---------------|-----------------|
| 1. In my class, this student seems tuned in. | Very True | Sort of True | Not Very True | Not At All True |
| 2. This student comes to class unprepared.   | Very True | Sort of True | Not Very True | Not At All True |
| 3. This student does more than required.     | Very True | Sort of True | Not Very True | Not At All True |

Student ID: \_\_\_\_\_

- |  |           |              |               |                 |
|--|-----------|--------------|---------------|-----------------|
| 1. In my class, this student seems tuned in. | Very True | Sort of True | Not Very True | Not At All True |
| 2. This student comes to class unprepared.   | Very True | Sort of True | Not Very True | Not At All True |
| 3. This student does more than required.     | Very True | Sort of True | Not Very True | Not At All True |

APPENDIX F  
IRB EXEMPT APPROVAL

APPENDIX F



Office of Research Compliance  
Institutional Review Board  
2000 Kraft Drive, Suite 2000 (0497)  
Blacksburg, Virginia 24061  
540/231-4991 Fax 540/231-0959  
e-mail moored@vt.edu  
www.irb.vt.edu

PVA00000572 expires 1/20/2010  
IRB # is IRB00000567

DATE: November 8, 2007

MEMORANDUM

TO: James Craig  
Jane Baskerville

FROM: David M. Moore 

SUBJECT: **IRB Exempt Approval:** "What is the Relationship Between Teacher Practices Centering on the Provision of Involvement, Structure, and Autonomy Support and Student Engagement?", IRB # 07-563

I have reviewed your request to the IRB for exemption for the above referenced project. I concur that the research falls within the exempt status. Approval is granted effective as of November 8, 2007.

As an investigator of human subjects, your responsibilities include the following:

1. Report promptly proposed changes in previously approved human subject research activities to the IRB, including changes to your study forms, procedures and investigators, regardless of how minor. The proposed changes must not be initiated without IRB review and approval, except where necessary to eliminate apparent immediate hazards to the subjects.
2. Report promptly to the IRB any injuries or other unanticipated or adverse events involving risks or harms to human research subjects or others.

cc: File

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VIRGINIA POLYTECHNIC INSTITUTE UNIVERSITY AND STATE UNIVERSITY  
*An equal opportunity, affirmative action institution*

APPENDIX G  
APPROVAL TO USE MEMO

From: Wmirre <wmirre@aol.com>  
To: jjbask@comcast.net  
Cc: hamirre@gmail.com  
Subject: Re: Use of RAPS  
Date: Tue, 28 Aug 2007 17:37:58 +0000

Jane---The citation below the figure is appropriate for use. In addition you may use the model to inform and guide your research. I am copying this email to Holly McGregor, IRRE's Research Manager and she will provide you the proper citation for the RAPS.

I have rec'd your fax and you are now approved to use the RAPS. We look forward to hearing about the results of your research and receiving copies of the data and publications that arise.

If you have any further questions feel free to contact me at the numbers below

Bill

William P. Moore, Ph. D.  
Director, Research and Measurement  
Institute for Research and Reform in Education