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# Where is the Learning in Smaller Learning Communities? Academic Press, Social Support for Learning, and Academic Engagement in Smaller Learning Community Classrooms

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# WHERE IS THE LEARNING IN SMALLER LEARNING COMMUNITIES? ACADEMIC PRESS, SOCIAL SUPPORT FOR LEARNING, AND ACADEMIC ENGAGEMENT IN SMALLER LEARNING COMMUNITY CLASSROOMS

by

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ABSTRACT

WHERE IS THE LEARNING IN SMALLER LEARNING COMMUNITIES? ACADEMIC PRESS, SOCIAL SUPPORT FOR LEARNING AND ACADEMIC ENGAGEMENT IN SMALLER LEARNING COMMUNITY CLASSROOMS

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Old Dominion University, 2010
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The extent to which Academic Press and strong social relationships impact Academic Engagement in smaller learning communities (SLCs) situated in large comprehensive urban high schools was investigated. Data were collected through classroom observations, student questionnaires and focus groups with teachers and analyzed using descriptive statistics, multivariate analysis of variance (MANOVA), and content analysis of focus interview transcripts. Findings from the survey data confirm those found in much of the existing literature, namely that students experiencing high levels of Academic Press were more often the most academically engaged. This finding was also confirmed for African American students in high Academic Press math classes. Social Support for Learning was not confirmed as a key factor in Academic Engagement. Descriptive statistics indicated moderate to low levels of Academic Press, Social Support for Learning and Academic Engagement in student self report data and in classroom observations. Results from focus groups of teachers participating in smaller learning communities identified themes suggesting that much of the Academic Press and Social Support for Learning evident in the SLCs examined was attributable to the individual efforts of teachers, sometimes in spite of the SLC structure. Additionally, factors impacting engagement emerged, chief among them being teacher and student rapport and

the relevance and complexity of the curriculum. Implications for future practice and directions for further research are also discussed.

This thesis is dedicated to my wife Chelsey who has demonstrated incredible patience and flexibility through the very long circuitous route I've taken in completing this process. She endured the birth of our first child, my ever-changing job situation, and buying a house, and my obsession with tennis, all the while pushing me to finish this degree. She was always willing to sacrifice her time and energy so I could do school work. I have learned more from her than I could from any degree program. I look forward to continuing our education together.

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TABLE OF CONTENTS

Page

Page

# LIST OF TABLES

Table Page

# LIST OF FIGURES

Figure Page

# Academic Press, Social Support for Learning and Academic Engagement in Smaller Learning Community Classrooms

## CHAPTER ONE: INTRODUCTION

In 1959 Admiral Hyman Rickover warned that America's preeminence as a world power was in jeopardy. The national security threat he identified was not from a foreign military, but an internal threat. "If our people are not properly educated in accordance with the terrific requirements of this rapidly spiraling scientific and industrial civilization, we are bound to go down. The Russians apparently have recognized this," (Post, 2009 pg. 1). Once again, the clarion call has been sounded to restructure American curriculum and instruction. Today, calls for reform center around a renewed emphasis on thinking skills. Authors and pundits such as Thomas Friedman and Tony Wagner have ushered into the mainstream an emphasis on thinking skills with books like *The World is Flat* and *The Global Achievement Gap* (Friedman, 2005; Wagner, 2008) with their premise being that the forces of globalization are enlarging the pool of worldwide economic competitors to include developing nations. As these nations graduate increasing numbers of students in technical fields such as engineering, health care and information technology, American students will need competency in skills that go beyond the traditional K12 curriculum to compete with the burgeoning workforces of developing nations that are willing and able to work for much less compensation than their American counterparts. Organizations such as the *Partnership for 21st Century Skills* and the *New Commission on the Skills of the American Workforce* have brought together the business community, education leaders, and policymakers to demand a complete overhaul of the K12 curriculum focusing on the application of higher-level thinking skills (Olson, 2006).

However, calls to increase academic rigor in the K12 curriculum are nothing new. The tradition of low levels of cognitive engagement in American schools is well established (Cuban, 1984; Education, 2001; Goodlad, 1984; Haller, 1992; Powell, 1985; Raudenbush, 1993). Almost 20 years ago, the *Goals 2000 Educate America Act* was passed establishing six broad goals American schools would achieve by the year 2000. Children would start the year "ready to learn," the United States would lead the world in science and math, high school graduation rates would be 90% or higher, schools would be free from drugs and violence and "the proportion of college graduates who demonstrate an advanced ability to think critically, communicate effectively and solve problems will increase substantially"(Panel, 1991).

Despite this enthusiasm for thinking skills education, nearly a decade after the timeline set by the *Educate America Act*, instruction emphasizing higher-order thinking skills is still not the norm in many American classrooms. Recent standardized test results published by the Educational Testing Service reports that 89% of Freshmen entering all types of institutions in the United States score 'Not proficient' on the critical thinking section of the 2006 SAT (CollegeBoard, 2007). A growing base of research suggests the current paradigm of high stakes testing may have contributed to a lack of instructional emphasis on higher-order thinking skills. The enactment of the *No Child Left Behind Act* pushed many states to enact high stakes accountability programs with standardized tests in order to secure federal funds for their local schools (US Department of Education, 2001). Critics of high stakes accountability programs; and the standardized tests on which they are based, contend that they measure low-level knowledge products, driving instruction and curriculum to prepare students only for the demands of the test (Bol &

Nunnery, 2004; Kohn, 2000). Furthermore, there is much research suggesting that many teacher-developed classroom tests contain an abundance of items similar to those found on such standardized tests, and thus are characterized as low-level in terms of the knowledge products or thinking skills they require (Bol & Strage, 1996; Crooks, 1998; Gallagher, 1991). Barksdale-Ladd & Thomas (2000) reported that 75% of a sample of teachers surveyed changed their instructional practices as a result of pressure from state testing. Their report suggests that teachers shifted instruction involving higher-order thinking skills, collaboration and in-depth understandings of content to instruction specifically designed toward material on state tests.

The negative implications of the current high stakes accountability paradigm on teaching for higher order thinking are especially troubling for at risk populations. Researchers examining disparities in performance among racial and ethnic minorities on the Texas Assessment of Academic Skills (TAAS) between 1996 and 1998 concluded, "These tests are, and will remain for some time an impediment for the graduation prospects of African American and Hispanic Youth" (Natriello & Pallas, 1999). Heubert (1998) noted that students of color are overrepresented among those denied diplomas on the basis of test scores. Longitudinal NAEP data from 1986-1999 indicates a growing gap in achievement between white students and minority students including measures that require problem solving and reasoning. This gap has been observed between White and African American and Hispanic students in the upper performance quartiles, where higher-order thinking skills are likely to be emphasized. White students made twice the gains of their African American and Hispanic counterparts during the 1986-1999 period (Lee & Burkham, 2003).

Moreover, students in low achieving classes are less likely to be exposed to instructional strategies fostering higher-order thinking. Calfe (1994) reported that authentic assessments are more likely to be part of instruction in suburban schools than in urban schools where minority populations tend to predominate. Kohn (2000) also observed the prevalence of "systematic use of low-level, drill and skill teaching" in urban schools serving minority students (p. 325). Raudenbush, Rowan and Cheong (1993) describe a number of studies reporting that teachers in classes of high achieving students are substantially more likely to emphasize higher order thinking processes than teachers in classes of low-achieving students. They suggest the higher academic track of the class, the more likely a teacher will be to report an emphasis on higher order thinking. Raudenbush (1993) conducted a regression analysis examining teachers' self reported instructional goals and their emphasis on higher order thinking processes in 16 schools. The gap between honors and nonacademic classes exceeded 1.7 standard deviation units; illustrating variation between honors and non-honors classes regarding emphasis on higher order thinking. Thus, while an achievement gap exists even for those low-level tasks measured by standardized tests, an even greater gap may exist for high-order skills not currently captured by the high stakes testing paradigm.

## Smaller Learning Communities

Although the situation facing disadvantaged students is grim, the outlook is not totally bleak. Smaller learning communities (SLCs) have demonstrated much promise regarding academic and school success outcomes for students in urban districts. Schools-within-a-school (SWAS) are one common SLC structure. Cotton (2001) describes schools-within-a-school as small schools operating within a larger "host" school, either as

the only SWAS in that school or one of several. SWAS represent different degrees of autonomy, but typically have their own personnel and program, and their students and teachers are self-selected. Over the past twenty years, a solid collection of research has accumulated describing the impressive benefits of small schools, including lower drop-out rates, lower incidences of school violence, increased graduation rates, more students taking advanced placement classes and higher student GPAs (ABTAssociates, 2002; Cotton, 2001a; Raywid, 1999). Additionally, small schools have been reported to increase collegiality and collaboration among school faculty and demonstrate increased Personalization measures for students (Cotton, 2001a). This research has demonstrated that small schools are superior to large schools on many measures and equal to them on others, thus helping to close achievement gaps. While the promise of small schools appears limitless, researchers are careful to include caveats in interpretation of their results. Visher, Teitelbaum and Emanuel (1999), wrote:

> Researchers who have studied small schools have stressed that reducing school size alone does not necessarily lead to improved student outcomes. Instead, they have concluded that school size should be seen as having an indirect effect on student learning...school size acts as a facilitating factor for other desirable practices. In other words, school characteristics that tend to promote increased student learning such as collegiality among teachers, personalized teacher-student relationships, and less differentiation of instruction by ability—are simply easier to implement in small schools. (21)

The small schools movement emerged as a reaction to the rampant student disengagement and sagging achievement data associated with comprehensive high schools that were documented during the mid 1980s in alarming reports such as *A Nation at Risk,* and by the works of researchers such as Sizer (1984), Oakes (1986), and Goodlad (1984). These studies described haggard teachers and disengaged students 'going through the motions' while negotiating a sprawling and fragmented curriculum (Marks,

2000). Several studies, for example (Bickel, 2000; Lee & Smith, 1995; Strange, 2005), reported on the significant positive impact of restructured smaller secondary schools on measures of student engagement and achievement especially for disadvantaged students. These results will be examined in more depth in the following chapter, but they buttress the central premise behind the rationale for the small schools movement. In theory, small schools would address plunging academic achievement and student disengagement by emphasizing a school-wide emphasis on high academic standards manifested as Academic Press and by initiating structural and organizational changes to comprehensive high schools designed to establish social capital among the students and school faculty.

**Academic Press and Social Capital in Small School Settings**

According to McDill, Natriello and Pallas (1986), Academic Press is defined as the extent to which school members (teachers and students) experience a normative emphasis on academic excellence and conformity to specified academic standards. Social capital in educational contexts refers to the quality of social ties that are fostered through interactions among a school's central stakeholders (e.g. students, staff, parents, community members) (Lee & Smith, 1995). Therefore, small schools seek to establish high academic expectations, while providing the social networks necessary to meet those expectations.

There is a solid research base suggesting quality social ties promote interest in the school culture and establish the network of support disadvantaged students in urban settings require. This research will also be examined more closely in the following chapter, but studies associate increased engagement and achievement to social ties and networks facilitated by limiting school size (Lee & Burkham, 2003; Leithwood & Jantzi,

2009). However, researchers (Darling-Hammond, Ancess, & Ort, 2002; Mohr, 2000; Wasley, Fine, Gladden, Holland, King, Mosak, Powell, & Bank Street Coll. of Education, 2000) claim a systematic focus on academic achievement or quality social ties in and of themselves are not enough to address the problem. Findings from the Consortium on Chicago School Reform suggest that "students learn substantially more when they experience high levels of Academic Press and strong social support together, but they learn much less when they experience only one of these conditions " (Wasley et al., 2000, p. 65).

## Problem & Research Questions

While higher-order thinking skills are not apparently prevalent in most comprehensive high schools, instruction emphasizing higher order thinking skills has been associated with the construct of Academic Engagement (Marks, 2000; Newmann, 1992). Analysis of students' perceptions of instruction in mathematics and social studies by Grossman and Stodolsky (1994) and Stodolsky and Salk (1991) indicated that cognitively challenging work in these classes eliminates social class differences on engagement scales. Additionally, Nystrand and Gamoran's (1991) study of eighth grade English classes associated high levels of substantive engagement with instructional strategies that promote high-order thinking skills. These strategies included teachers posing open-ended questions, incorporating students' responses into follow-up questions and in-depth interactive class discussions.

Though studies have shown significant relationships between school size and higher order thinking skills (Cotton, 2001a; Haller, Monk, & Tien, 1993), this research examines smaller schools in rural settings and infers the presence of higher-order

thinking from course offerings (i.e. honors and Advanced Placement courses). There is limited research examining the relationship between higher order thinking and small schools in urban contexts, or with more contemporary manifestations of small learning community reforms such as schools-within-a-school (Lee & Smith, 1993; Marks, 2000). In addition, early research on SLCs boasted promising outcome measures (i.e. lower dropout rates, higher graduation rates, lower incidences of school violence and a host of other measures indicating school improvement). However, outcome measures of academic achievement, especially for at risk populations, are marginal at best when compared to non-SLC schools with similar populations (Cotton, 2001b; Leithwood & Jantzi, 2009; Office of Planning, Policy Development, & Program Studies, 2008; Wasley, 2002).

This research study examines the relationships among Academic Press and Social Support for Learning, two hallmarks of smaller learning communities, and instruction for higher-order thinking skills as measured through the construct of Academic Engagement. Three research questions provide insight into this issue:

Research Question #1: How does the smaller learning community structure impact levels of Academic Press, Social Support for Learning and Academic Engagement in first time ninth grade students in large comprehensive high schools?

Research Question #2: What is the relationship between Academic Press and Social Support in their contribution to/impact on engagement as an outcome measure of student learning?

Research Question #3: How do these relationships differ as a function of students' gender or ethnicity characteristics?

## Overview of the Study

As part of a larger program evaluation, this research study employed a mixed methods design. It utilized data collected as part of an evaluation for a U.S. Department of Education small learning community grant awarded to an urban school district in Southeastern Virginia implementing SLCs with first time ninth graders in four of its five high schools. Class observations were conducted by a team of researchers looking for evidence of Academic Engagement (instruction for higher-order thinking skills), Academic Press and Social Support for Learning. These results were combined with qualitative findings of teacher focus groups that were conducted near the end of each school year gauging teachers' perceptions of the quality of social supports inherent in the school culture, levels of Academic Press promoted within their respective SLCs and the extent to which students were engaged in cognitively challenging work. Additionally, questionnaires completed at the end of each school-year measuring students' perceptions of the levels of Academic Press, Social Support for Learning and Academic Engagement they experienced while in their SLC were analyzed looking for relationships among the three constructs. Some studies (Lee & Friedrich, 2007; Leithwood & Jantzi, 2009; Marks, 2000) suggest differentiated results among these constructs across ethnic groups. Therefore the second and third questions address potential differences in students' perceptions of Academic Press, Social Support for Learning and Academic Engagement.

As a result of the non-experimental nature of its research design, there are several limitations that warrant mention and that are discussed in greater detail in chapter III and chapter V. This study relied on observation data obtained from research professionals, however observer effects could have skewed results as students and teachers may have

altered their behavior during the time of observation. Additionally, the study utilized data from classroom observations that were arranged in advance by school officials with an aim to include most discipline areas. The classes observed were not randomly selected, but constituted a purposeful sample. Therefore the trends evident from the observation data may not be indicative of the instruction that usually takes place during the school day. The student survey included the vast majority of students participating in the SLC initiative, but self-report data from adolescents raises a reliability concern. Also, first-time ninth graders not enrolled in an English class were most not included in the survey administration, which would also limit the reliability of the findings. Teacher focus groups were conducted near the end of the school year, so teachers may have been distracted or hurried. Finally, because this study was an extension of a larger program evaluation, input from these teachers may not be as candid as it might have been if the key players did not have a direct interest in the outcome of the program evaluation.

## Summary and Overview of Subsequent Chapters

Chapter I provided a rationale and research questions that were addressed in this study. Smaller learning communities and factors related to their purported successes were briefly defined and will be more fully explored in Chapter II. Chapter II investigates the current research surrounding the benefits of smaller learning communities, particularly Academic Engagement and the factors surrounding those benefits (i.e. Academic Press, Social Support for Learning) as well as their impact on varied ethnic and minority groups. It summarizes important findings in these areas and compares findings from previous empirical research. Emphasis is placed on studies examining engagement and the contextual factors influencing engagement. The

hypotheses for the research questions are addressed in Chapter II. Chapter III further and more completely outlines the methodology that was used in this research study. Chapter IV describes the findings of the data analysis and Chapter V discusses the significance of these findings.

# CHAPTER TWO: LITERATURE REVIEW

This review of the literature will first summarize the history of the small schools movement. It will then examine studies measuring frequently cited benefits associated with small schools, namely increased attendance, graduation rates, and lower dropout rates. It will also address research examining the relationship between small schools and academic achievement that have yielded mixed results. Narrowing in on the research questions for this study, this literature review will describe the research linking positive outcomes of small schools with a systematic press among faculty regarding academic success and student engagement characterized by higher-order thinking. Each section will first identify the associations of small schools with these outcome measures evident in the research literature and then examine claims that smaller learning communities promote the equitable distribution of positive outcomes across ethnic groups that traditionally comprise at-risk populations in urban settings.

## History of the SLC Movement

The benefits of small schools were first established in Barker and Gump's (1964) seminal study examining the relationship of affective outcomes with school size in Kansas. They concluded that small high schools foster a sense of community among students that provides greater opportunities to participate in extracurricular activities and to exercise leadership roles. These authors coined the term, "campus model:"

> The campus school provides for repeated contacts between the same teachers and students; this continuity of associates probably leads to closer social bonds. A common sense theory is that the campus school welds together the facility advantages of the large school and the social values of the small school (Lee, Ready, & Welner, 2002, p. 29).

As a result of the urban crises of the late 1960s and early 1970s many urban districts looked to small schools as means of addressing mounting disengagement and low achievement especially among at risk populations. More specifically, the concept of a school-within-a-school was suggested as a means of capitalizing on the established social advantages of small schools that could operate within the existing structure of large comprehensive high schools. Cotton (2001a) describes schools-within-a-school (SWAS) as small schools operating within a larger "host" school, either as the only SWAS in that school or one of several. Schools-within-a-school represent different degrees of autonomy, but typically have their own personnel and program, their students and teachers are often but not always self-selected.

New York City's small school movement, among the first in the nation, began in East Harlem's Community School District Four (Clinchy, 2000). Deborah Meier founded Central Park East High School in East Harlem in 1985, featuring successful smaller learning communities, and then founded the Center for Collaborative Education, CCE (Clinchy, 2000). In 1989, the CCE and the New York City Board of Education, established the Coalition Campus Schools Project (CCSP) which was responsible for creating 150 new small schools during the 1990s (Darling-Hammond et al., 2002). Additionally, Theodore Sizer's Coalition of Essential Schools (CES) facilitated the creation of over 100 new elementary and secondary small schools in New York and across the nation.

A similar movement to establish small schools out of large comprehensive high schools emerged in Chicago. Building on a long tradition of small elementary schools dating back to the nineteenth century, Chicago attempted to replicate the success of these

historically small elementary schools. The first Chicago School Reform Act in 1988 established Local School Councils (LSC) for each Chicago public school. An LSC consisted of parents, community members, teachers, and the principal of the school and set in place the governing structure that would facilitate the creation of small schools out of existing large comprehensive secondary schools. As a result, during the early 1990s several schools-within-schools (SWS), reflecting a range of instructional approaches and curricula, were established (Wasley et al., 2000). In 1995, the Annenberg Foundation awarded CPS a $49 million grant that created over 150 small schools. Since then Chicago Public Schools were awarded subsequent grants focusing on creating small schools from the break-up of comprehensive high schools. As of 2007, there have been 32 new autonomous small high schools and 22 new school-within-a-school high schools in Chicago public schools (Kahne, Sporte, de la Torre, & Easton, 2008).

Sources of substantial funding for smaller learning communities have come from several philanthropic organizations as well as the federal government (Cotton, 2001). For example, the Bill and Melinda Gates Foundation has given over $1 billion to create small schools out of large comprehensive high schools (Jehlen & Kopkowski, 2006). This funding was provided because of the promise emerging from the growing research literature that suggest small schools "can narrow the achievement gaps between white, middle class, affluent students and ethnic minority and poor students" (Cotton, 2001a, p. 1). Smaller learning communities, especially in inner city schools, are promoted as a means of addressing bureaucratic organization, large size, fragmented curriculum and the impersonal and alienating climate of large comprehensive high schools (Oxley, 1990). The reported success of smaller learning communities led to the establishment of the

Smaller Learning Communities (SLC) Program in 2002 that awards discretionary grants to local educational agencies to support the implementation of SLCs and activities to improve student academic achievement in large public high schools with enrollments of 1,000 or more students (Office of Planning et al., 2008).

## Benefits Associated with Small Schools

### Attendance, Dropout and Graduation Rates

As mentioned earlier, SLCs have been noted to reverse the increasing trend in dropout rates especially for minority students. In 2007, the dropout rate for Hispanic students was at 21.4%, for African Americans it was 8.4%, and the overall dropout rate was 8.7% (Planty, Hussar, Synder, Kena, KewalRamani, Kemp, Bianco, Dinkes, Research, & Statistics, 2009). Urban districts are particularly affected by this phenomenon; Swanson (2004) notes that students attending schools in central cities and larger districts are less likely than students in non-urban and smaller school systems to graduate. Rumberger and Palardy (2005) point to school-level dynamics as a potential source for drop-out behavior. They suggest large urban high schools promote dropout behavior because they are not able to engage at-risk students.

Rumberger and Palardy's (2004) claim is supported in the research literature. Generally, small schools retain more students than large ones. Lee and Burkam (2003) examined the drop-out behavior of 3,840 students in 190 urban and suburban schools that were part of the National Educational Longitudinal Study of 1988 (NELS:88). Results indicated that large schools (1500-2500 students) had higher drop-out rates, than very large schools (+2500 students), or medium sized schools (600-1500 students). However, small schools with student populations between 400-600 students had the lowest drop-out

rates. This study focused on students that left school between Grades 10 and 12; the authors suggest that the higher drop-out rates of moderately large schools over the very large schools might be explained by students dropping out prior to entering their $10^{th}$ grade year. Additionally, Gardner, Ritblatt, and Beatty (1999) compared the dropout rates of 67 randomly selected California high schools (+2000 students) with those of 60 randomly selected small high schools (200-600 students). Drop out rates were significantly lower in small schools and the difference remained significant when socioeconomic status (SES) was controlled for.

This trend is sustained in schools that participate in the smaller learning communities initiative. Darling-Hammond, Ancess and Ort (2002), provide evidence of school size effects on attendance, graduation rates and other outcome data from a seven year study of New York City's Coalition Campus Schools project (CCSP). This project focused on conversion schools, where large comprehensive high schools were reorganized into smaller learning communities. Attendance rates in the CCSP small schools were higher than in their former larger school for all subgroups in the schools' populations. The annual dropout rates for the CCSP schools averaged 3.4 percent, while the overall New York City rate was 6.7 percent (2002).

In 2001, Chicago Public Schools launched the Chicago High School Redesign Initiative (CHRSI) a program that created smaller learning communities from large comprehensive high schools. Kahne, Sporte, de la Torre & Easton (2008) examined drop-out data from the 2002-2005 school years for students in 11 CHRSI small schools that were converted from large high schools. The schools' populations were 90.6 percent African American, 8.6 percent Latino and 0.4 percent White. While there was not a

statistically significant difference between the drop-out rates of cohorts of first-time freshmen at the CHSRI schools and similar students at other schools in the 2002-03 cohort, by the time those freshmen reached their junior year the drop-out rate for CHRSI schools was 20 percent versus 27 percent in other Chicago high schools. This difference was marginally significant. Likewise, the difference in dropout rates at the end of the ninth grade for the 2003-04 cohort and other students was not statistically significant, but by the end of the tenth grade the dropout rate was 14 percent for CHRSI schools and 17 percent at other Chicago high schools, a marginally significant difference. Surveys regarding student belongingness and support from staff triangulate these findings (Kahne et al., 2008). Echoing Rumberger and Palardy's (2004) claim, CHSRI schools describe much more supportive contexts than the other Chicago high schools and the authors posit that the supportive environment of small schools grows in strength the longer students remain in these settings.

**School Violence**

Small schools have also been associated with fewer incidences of school violence (Cotton, 2001a; Raywid, 1999; Wasley et al., 2000). A study published in 2007 analyzed data from the 2003-2004 National Survey of Schools and Staffing. The study found substantial differences in many areas related to school safety. Faculty at urban district public schools enrolling 200-749 students were much less likely to report daily, weekly or monthly incidents of robbery, theft, vandalism, verbal abuse, or use of illegal drugs or alcohol (Hill & Christensen, 2008).

**Academic Achievement**

Most research examining the connection between school size and academic achievement suggests students in smaller to midsized schools perform better than students in larger schools. At the elementary school level, Eberts, Schwartz, & Stone, (1990) examined math achievement data from 14,000 fourth grade students in 281 schools in 1978. Schools in the study were classified as small (less than 200 students), medium (400-600 students) and large (more than 800 students). Students in small schools had significantly greater gains in math achievement over a one-year period than students in the medium or large schools. The authors also established that student background variables including gender, race, parental involvement and socioeconomic status did not contribute to the differences observed.

Another study of elementary small school achievement examined schools that experienced what the authors referred to as "shocks" or events that resulted in increases or decreases to their populations (i.e. school openings, mergers or closings). The sample included 57 schools from 1989 whose populations decreased and 39 schools whose populations increased. The results showed a significant negative effect of enrollment rates on achievement. The analysis conducted two and three years after the "shocks," indicate that doubling enrollment resulted in a 4.1%-point decrease in math scores on the Indiana Statewide Test for Educational Progress (ISTEP) and a 0.4%-point decrease in attendance (Kuziemko, 2006).

A handful of studies point to the positive effects of large schools on student achievement. Two groups of researchers (Barnett, Glass, Snowdon, & Stringer, 2002; Bradley & Taylor, 1998) examined secondary schools in the United Kingdom and

identified significant positive relationships between size and achievement. Similarly, Schreiber (2002) examined data from 1,839 high school students in 162 schools that were part of the *Third International Mathematics and Science Study* (TIMMS) in the United States, and investigated school level factors that impact advanced mathematics achievement. He identified significant positive associations in math achievement with school size, level of parent education, and resources available. These authors contended that larger schools provide more opportunities for instructional specializations that resulted in improved achievement and it was not the size of schools that directly impact achievement.

To shed further light on the link between larger schools and enhanced achievement Andrews, Duncombe, and Yinger (2002) updated a literature review originally completed by Fox (1981), examining economies of size with respect to school and district outcome measures in an effort to examine the effectiveness of consolidating small schools from large comprehensive high schools. Andrews et al. (2002) added 22 studies to the 29 Fox (1981) had originally studied to conduct a cost benefit analysis of sorts examining school expenditures versus outcome measures at the district and school level using enrollment data as the independent variable and average math and reading test scores as dependent measures, while accounting for variables such as race, student SES and teacher quality. While Andrews et al. (2002) acknowledged conceptual and methodological caveats such as the exclusive dependence on descriptive statistics in a few of the studies examined, instead of examining differences in test scores across multiple years, they agreed with Fox's original conclusions. Fox (1981) claimed that after controlling for school level and environmental factors, larger schools are associated

with lower levels of achievement and that "decreasing returns to size may begin to emerge for high schools above 1000 students" (p. 255). Therefore, while some studies suggest an indirect association between school size and enhanced achievement, the majority of research literature indicates a negative relationship between school size and student achievement.

**Academic achievement and at-risk populations.** Small schools are promoted as effective especially among African-American and Hispanic populations. Therefore an examination of potential interactions between school size, achievement and background variables such as SES, family educational culture and first language is warranted. One such study examined the combined and separate effects of district and school size on student achievement with SES in Georgia. A regression analysis was conducted using data from a total of 367 elementary and 298 secondary schools suggesting the negative impacts of school size on achievement are exacerbated in at risk populations. The study used results from the Grade 8 Iowa Test of Basic Skills and graduation exams in English, math, social studies and science as dependent variables and school size, achievement and SES as independent variables. Results identified negative relationships at the school and district level between size and SES, and size and minority status (Bickel, 2000). A similar study conducted by Bickel (2001) in Texas supported Bickel and Howley's (2000) results. In 1,001 Texas schools, Bickel et al. (2001) observed a statistically significant negative interaction effect between school size, SES and performance on the Texas Assessment of Academic Skills, suggesting that economically underprivileged students are also academically disadvantaged in large schools.

As part of a study concerned with the impact of various high school restructuring reforms including small school size, Lee and Smith (1995) examined NELS:88 data from 11,794 Grade 10 students in 820 high schools. The study explored connections between student achievement from Grade 8 to Grade 10, student engagement in school, and the equitable distribution of achievement gains across students with different SES levels in four subject areas. The results identified a significant positive relationship between restructuring models, including those reducing school size, and students' engagement in their courses as well as achievement regardless of social or academic background characteristics (Lee and Smith, 1995).

**Why do small schools work?**

Researchers of smaller learning communities all agree that size is not the proximal cause of the positive outcome measures associated with smaller learning communities (Cotton, 2001a; Raywid, 1999; Wasley, 2002). Visher, Teitelbaum and Emanuel (1999), write,

> Researchers who have studied small schools have stressed that reducing school size alone does not necessarily lead to improved student outcomes. Instead, they have concluded that school size should be seen as having an indirect effect on student learning...school size acts as a facilitating factor for other desirable practices. In other words, school characteristics that tend to promote increased student learning—such as collegiality among teachers, personalized teacher student relationships, and less differentiation of instruction by ability—are simply easier to implement in small schools. (pg. 21).

Smaller learning communities combine two disparate reform traditions, one focused on the development of social ties among a school's stakeholders, while the other on a school-wide systematic emphasis on high academic expectations and standards. Grounded in sociological research, social capital refers to the benefits an individual or group enjoys by virtue of certain memberships (Portes, 1998). The theory behind social

capital suggests that the social ties students develop while in school play a key role in educational outcomes and the success of school reforms. With strong social ties in place, informal knowledge, expectations, mentoring, modeling, and decision-making can all be conveyed and shared (Oh, Chung, & Labianca, 2004; Pribesh & Downey, 1999). This idea has historical roots (Bidwell, 1965; Dewey, 1943). Bryk and Driscoll (1988) relate social capital or communal school organization to two types of outcomes: student engagement and student achievement. The cohort type structure of small schools along with students sharing the same core teachers promotes social ties and thus social capital. Therefore, smaller learning communities have the potential to utilize optimal school size to leverage social capital and thus promote engagement and possibly achievement. Meanwhile, Academic Press emphasizes rigor and accountability. Its logic holds that students will achieve more when what they are supposed to learn is made clear, when expectations for academic learning are high and when they are held accountable for their academic performance (Lee & Smith, 1999). Thus the central philosophy of smaller learning communities is to emphasize high expectations for academic achievement, while providing the social supports required for students to meet those expectations.

**Academic Press**

McDill, Natriello & Pallas (1986) define Academic Press as the extent to which school members experience a normative emphasis on academic excellence and conformity to specified academic standards. They identify three assumptions underlying efforts for higher academic standards: (a) that standards in schools are too low; (b) that higher standards motivate students; and (c) that greater motivation leads to higher achievement. The import of teacher expectations for their students is nothing new.

Rosenthal and Jacobs'(1968) *Pygmalion* study, while controversial, established the connection between the perceived expectations of teachers for their students and those students' achievement. Raudenbush (1984) followed up the Pygmalion study with a meta-analysis examining the impact of familiarity with students at the time expectations are formally established. The results supported the existence of expectancy effects in younger and older children. Conversely, low expectations associated with student variables such as ethnicity, special needs status or SES prompted teachers to reduce pressure on students whose disadvantages were seen as a barrier to their success (Downey & Pribesh, 2004; Lakebrink, 1989; Wehlage, 1989). While this line of research focuses on individual teacher's expectations, high expectations can also be examined as an organizational property of a school. High expectations communicated by an entire teaching faculty can promote a culture of support for academic success. Thus, a norm of high expectations is part of a school's social context, encouraging an organizational press toward academic goals (Lee & Smith, 1999, p. 913).

**Academic Press and Social Support**

While a culture of Academic Press in schools has been associated with increased achievement and engagement in school, Wehlage (1989) found that Academic Press may further alienate low achieving students when academic standards are raised beyond what those students can reasonably achieve. Several researchers claim that the social connections students develop as the result of supportive environments may act as a scaffold for disadvantaged students that are academically pressed (Darling-Hammond et al., 2002; Mohr, 2000; Wasley et al., 2000). As noted earlier, Wasley's (2000) findings from the Consortium on Chicago School Reform student survey suggest that when

students experience Academic Press and strong social support concurrently, they perform much better on achievement tests than when they report experiencing high levels of either construct alone.

Successful smaller learning communities address student alienation and engagement by creating a school culture characterized by a combination of Academic Press with social support. Bryk, Lee, & Holland (1993) examined the effects of the communal organization of Catholic schools on several measures correlated with academic success (i.e. student engagement and teachers' commitment to students). They argued that "the major effects of a communal school organization on teachers and students are located more directly in the personal and social rather than in the academic domain" (1993, p. 276). They found a positive relationship between communal organization characterized by shared values, shared activities and social relationships and interest in academics and student engagement. Further analysis revealed significant differences between public schools and Catholic schools on engagement and interest in academics, but this difference disappeared when a composite index for communal organization was controlled for (Bryk et al., 1993).

Further evidence for the effectiveness of social support comes from survey data from a sample of 24 elementary schools that indicated a positive relationship between sense of community and academic attitudes and motives (Battistich, Solomon, Kim, Watson, & Schaps, 1995). While these studies rely exclusively on self-reported correlational data and non-random samples, they do identify the same trend that is supported in similar research. Marks, Doane, & Secada (1996) examined teachers' expectations and standards and students' perceived support from their teachers to help

them meet those expectations in restructured (including SLCs) elementary, middle and high school classes. Their study's definition of social support included elements of Academic Press. Those students from the restructured elementary, middle and high schools that generally perceived their class work to be authentic and experienced forms of social support also reported enhanced engagement regardless of race or gender (Marks et al., 1996).

Perceived social support also mediates class goal orientation with respect to engagement. Students that perceived their teachers as promoting interaction and mutual respect (i.e. social support) in classes with a focus on mastery goals reported higher levels of motivation and engagement when compared to students in classrooms that were focused toward relative performance with other students in class, a condition recognized as rigorous but not socially supportive (Allison & Patrick, 2001). Urdan, Midgley, & Anderman (1998), reported similar findings, associating press with more learning and increased substantive engagement in classrooms with a focus on mastery goals.

Social support is especially important when press is applied to at-risk students. Shouse (1996) used hierarchical linear modeling (HLM) to study the impact of both school communal organization and Academic Press on academic achievement gains. Controlling for students' academic and social backgrounds and public versus private schools, Shouse found that Academic Press influenced achievement gains in all schools, but its impact was particularly prevalent in low-SES schools that were communally organized. While there was no main effect on communal organization and achievement, in low-SES schools where communal organization was weak, Academic Press effects were weaker. Shouse concluded that Academic Press is more important in low-SES

schools, but especially effective when coupled with strong social support. Taken together, this research suggests the importance of socially supportive environments when fostering high academic standards in students.

**Academic Press, School Size and Student Ethnic and Social Backgrounds**

Small schools leverage their size to create an environment that stimulates strong social supports for students. This support, when combined with a sustained Academic Press, is especially effective for the at-risk students targeted in SLCs initiatives. Focusing on an analogue of social support, collective responsibility for learning, Lee & Loeb (2000) found that teachers in small schools have more positive attitudes about their responsibility for students' learning and that their students learn more than students in large schools. In light of their results, the authors concluded that school size influences student achievement directly and indirectly, through its effect on teachers' attitudes.

In a 2008 national evaluation of Gates Foundation small schools, researchers reported mixed results regarding the impact of small schools on press and Personalization, another measure of social support (Shear, Means, Mitchell, House, Gorges, Joshi, Smerdon, & Shkolnik, 2008). The American Institutes for Research (AIR) and SRI International completed an evaluation of over 100 schools participating in small school reform, defined as schools that have no more than 100 students in each grade level. The schools surveyed fell into four categories: conversion schools (small schools created from the break up of large schools), start-up schools (schools founded as small schools), pre-conversion schools (schools where a conversion was imminent), and comprehensive schools (non-restructured schools that served as a control). Teacher and student survey data indicated that expectations for learning and Personalization were

significantly greater in start-up and conversion schools than in the control schools. In conversion schools, high expectations and Personalization scores significantly improved from the year prior to conversion to the second year of operation as an SLC. However, a document analysis of teachers' assignments in Grade 10 Language Arts and Math classes did not show any significant differences in rigor (i.e. requiring the application of higher – order thinking skills) in the small schools versus the control groups (Shear et al., 2008). Thus, while the small schools at focus in this study were able to establish a supportive school culture that promoted the perception of Academic Press, a systematic push for high academic standards was not evident in teachers' assignments. This contradiction may have more to do with the paradigm of high stakes testing ushered in by *No Child Left Behind* than the small school initiative. The literature contains other reports of promising school reform efforts undermined by the pressure of high stakes tests (Bol & Nunnery, 2004)

Kahne, et al. (2008) compared four years of survey and student outcome data from 11 conversion high schools in Chicago with 70 Chicago Public Schools not involved in any restructuring initiative. Juniors in the converted small schools were more likely than their counterparts in comprehensive schools to report a systematic press for high academic standards. Additionally, students in the Chicago small schools were significantly more likely to report the existence of social support (i.e. peer support for learning, student-teacher trust, and personalism) within the school than were students in Chicago's comprehensive high schools. While academic achievement in these schools was not significantly greater than in the comparison schools, other outcome measures

such as plans to go to college and Academic Engagement (which will be examined later in this review) were higher in the small schools (Kahne et al., 2008).

An earlier but more comprehensive analysis of Chicago's 304 small elementary schools that included sixth and eighth grades examined self-report data from 28,318 sixth and eighth grade students (Lee & Smith, 1999). This study explored relationships between levels of Social Support for Learning, Academic Press as measured by the 1997 survey administered by the Consortium on Chicago School Research (CCSR) and achievement data from the 1997 Iowa Test of Basic Skills (ITBS). Results were examined by subgroups of students including differences by ethnicity and SES. The authors conducted HLM analysis to examine student and school effects of social support and Academic Press on achievement outcomes. The 304 participating schools were divided into three categories associated with the levels of Academic Press reported in the survey data, including "low" press schools (n=85), "high" press schools (n=75) and "medium" press schools (n=144). Students attending these schools were also grouped according to these categories. Students in low-press schools scored .20 standard deviations below those in medium-press schools on the ITBS. Students in high Press schools scored between .25 and .30 standard deviations above students in medium-press schools. The results suggest a positive relationship between Academic Press and achievement. The same trend was demonstrated for social support and achievement. However, when schools were separated by size, a pattern suggesting an inverse relationship between press and size with respect to engagement and achievement emerged (1999).

However, the ethnic and SES distribution of students among the varied levels of Academic Press schools was not consistent. There were more African American students in medium and low Academic Press schools, but they represented the smallest ethnic group in the high-press schools. Furthermore, there were more Hispanics in low than medium Press schools and Asian and White students had higher proportions in high Press schools. The authors included caveats with their interpretation of the results:

> Although these descriptive differences suggest that achievement and social support are positively related to school Academic Press, differences in social and academic background across the school groupings indicated that schools' compositions may account for these relationships (1999, p. pg. 924).

Similar patterns emerged in the distribution of ethnic groups by level of social support in schools. The findings suggested that students enjoying high levels of social support achieve at higher levels. However, the SES of students with high versus medium levels of social support differed by .30 standard deviations. Additionally, while African American students reported high levels of social support, they reported lower levels of press. Hispanic students were equally distributed among the categories of support evident in their schools. The authors suggest that SES, school structure, and racial composition are related to students' level of reported social support and to a school's Academic Press (Lee & Smith, 1999). Based on multivariate and multilevel analysis the authors explored the influence of school Academic Press on 1-year gains in four outcomes measures: (a) achievement in math, (b) achievement in reading, (c) the relationship between social support and math, and (d) the relationship between social support and reading gains. The analysis demonstrated that school Academic Press had positive and significant effects on both math and reading achievement (Lee & Smith, 1999). Most importantly, the authors found that students who perceived high levels of

social support learn even more in schools with high levels of Academic Press (Lee & Smith, 1999). The authors conceded that the relationships discovered, while significant, were only moderately so. Although they had a large sample, the types of small schools participating and the level of implementation of the small school reform varied greatly in Chicago because the district has such a long history with small school reform. Additionally, Chicago's great ethnic diversity and the unique K-8 make-up of many of its elementary schools made generalizing trends difficult.

The studies on Academic Press clearly associate a systematic push for academic excellence with strong social support. When these two school attributes are coupled, student achievement is increased regardless of SES or ethnic background. It is little wonder why small schools have attempted to use their small size to promote socially supportive environments that press students academically.

**Academic Engagement**

Another construct often used to measure the effectiveness of restructuring efforts is student engagement with school. Engagement is often used as an alternative or supplement to achievement data when examining school effectiveness. Student disengagement with school especially at the secondary level is well documented (Finn, 1993; Goodlad, 1984; McDill et al., 1986; Sizer, 1984). Small schools have been associated with increased student engagement as measured by several outcome variables including lower dropout rates, increased participation in extra-curricular activities and student self-reports of interest and challenge in academics (Cotton, 2001a; Cotton, 2003; Wasley et al., 2000). The variation among such measures suggests that engagement is a

multifaceted construct. Fredricks' (2004) literature review on the concept identified three distinct elements:

- Behavioral engagement is characterized by student participation in school related events including academic and social or extracurricular activities.
- Emotional engagement includes positive and negative reactions to the school environment including teachers, classmates, and academics.
- Cognitive engagement involves thoughtfulness and willingness to invest the effort to master complex ideas.

Because the research questions guiding the present study investigates a variant of cognitive engagement, this review will focus on cognitive engagement as it relates to school size and student social and ethnic background. These concepts of engagement suggest an array of innovations designed to reshape how students experience school. Some schools, as part of their reform efforts, have begun to provide students with more socially supportive school environments, including smaller learning communities (Conley, 1993).

Bronfenbrenner (1979) attributes the lack of "real work" (i.e. work another actually depends on) and a "curriculum for caring" (i.e., giving care in the community) as the primary causes for student disengagement and advocates for "substantive" activities in which young people participate in their cognitive and social development. These activities range in complexity and ability to engage. The instructional activities students experience in the classroom should be gauged along such a continuum. Newmann's (1992) theory of student academic engagement attempts to do just that. Newmann combines the sociological theory of Merton (1968) and the psychological theory of

Connell (1989) to propose three bases for student Academic Engagement: (a) the fundamental human need to develop and express competence, (b) school membership, and (c) authentic academic work. Authentic academic work involves students intellectually in a process of disciplined inquiry to solve meaningful problems, problems with relevance in the world beyond the classroom and of interest to them personally (Newmann, 1992). Bryk & Driscoll (1988) relate socially supportive environments with student engagement and academic achievement. Earlier this review established the importance of socially supportive classroom environments as a necessary condition facilitating the ability of Academic Press to push students toward greater academic achievement. It may be that strong social support is also a necessary but not sufficient condition for promoting student Academic Engagement. Newmann's (1992) conception of engagement points to cognitively challenging, authentic work as a key to engagement, perhaps strong social support provides students with the confidence to risk engaging with complex and rigorous subject matter.

**Engagement and Socially Supportive Academic Environments**

There is substantial research linking the quality of social support in classrooms to student motivation and subsequent engagement. In this line of research, engagement is viewed as an essential construct in motivational models because it is considered a primary means by which motivational processes influence learning and development (Furrer & Skinner, 2003). Ryan and Patrick (2001, p. 438), place the teacher as the prime influence on motivation in the classroom environment.

> In addition to delivering the curriculum, teachers help to construct the classroom social environment by creating norms and rules for student behavior in the classroom and giving explicit messages regarding students' interactions with their classmates.

Ryan and Patrick (2001) examined 233 eighth grade student self reports regarding changes in motivation and engagement experienced during the transition from seventh grade. The results point to a classroom culture of mutual support as key to increased student motivation and engagement. In this study, prior achievement, race and gender were not associated with motivation and engagement. However, the classroom social environment was associated with changes in students' efficacy relating to their teacher, efficacy accomplishing their schoolwork, self-regulated learning and disruptive behavior, even when controlling for prior motivation, engagement, achievement and student background variables. Key among their findings was the impact on social efficacy with teachers and disruptive behavior in the classroom from students' perceptions regarding the emphasis their teachers placed on comparison and competition among classmates. When students felt their actions would be compared directly to others, they expressed less confidence in their ability to relate well to their teacher and also reported engaging in more disruptive behavior. The authors suggest students may be less willing to engage in tasks if their performance is seen as an indicator of their relative ability (2001). These findings are echoed in a study conducted by Urdan et al. (1998) who negatively related students' self-handicapping strategies (i.e. lack of effort, procrastinating until the last moment and fooling around the night before a test) with the goal structure established by the teacher. In classrooms emphasizing an ability goal structure, where success is viewed relative to the performance of others, self-handicapping strategies were pervasive. However, classrooms that emphasized understanding school work over simply

memorizing it, a mastery goal orientation, were not associated negatively with handicapping strategies among students (Urdan et al., 1998).

Socially supportive classroom environments including student-teacher relationships and peer relationships can have a significant impact on Academic Engagement. Students' sense of relatedness to their peers and their teachers (i.e. quality of teacher student relationships, belongingness, inclusion, and acceptance) have also been associated with motivation and engagement. In elementary school, student reports regarding the quality of their relationships with teachers predict their perceived control, coping strategies and engagement (Ryan, Stiller, & Lynch, 1994), where as, in early adolescence, perceptions of teacher support predict achievement efficacy, effort and engagement (Murdock, 1999). Furrer & Skinner (2003) found that teachers' and students' perceptions of relatedness were associated with self-reported engagement and academic achievement as defined by letter grades. While these findings don't fully support the importance of cognitively engaging instruction, they do point to the social environment as important for maintaining motivation and engagement.

**Challenging Academic Work and Engagement**

Few research studies examine the relationship between quality of academic work and student engagement. Stodolsky (1991) found that math and social studies students reported being most engaged when the work was "cognitively challenging." Additionally, he found that differences in social class on engagement measures disappeared when the work was characterized as cognitively challenging. Nystrand and Gamoran (1991) differentiate between procedural and substantive engagement in their study of 8th grade literature classes. Their definition of substantive engagement includes

quality of classroom discourse (higher-order feedback and open-ended questions) and is close to Newmann's (1992) idea of engagement associated with depth of processing. Procedural engagement was described as "on task" behavior (i.e. going through the motions without deep processing occurring). They found high levels of procedural engagement and few instances of substantive engagement. However, when substantive engagement was observed, teachers were raising open-ended questions, incorporating student responses into follow-up questions and extemporaneously building class discussions around the exchange of ideas generated during discussions (Nystrand & Gamoran, 1991). Marks' (2000) examination of survey data from 3669 students from 24 small elementary, middle and high schools found that Social Support for Learning is significantly related to engagement. She found that the social support model accounts for 18%, 20% and 22% of the variance in student engagement among students in elementary, middle and high schools respectively. Additionally, she found that social support significantly reduces the differential effect of female gender on engagement. Earlier findings report females as more engaged than males.

**Engagement, Student Characteristics and Small Schools**

Most previous research has shown that engagement depends on the personal background of students. With the exception of Marks' (2000) study, other researchers have found that girls are consistently more academically engaged than boys at all grade levels. Moreover, higher levels of socioeconomic status (SES) are also associated with higher engagement among elementary, middle, and high school students (Finn & Cox, 1992; Lee & Smith, 1995; Lee & Smith, 1993). However the relationship between minority status and student engagement changes with grade level and SES. In Finn and

Cox's (1992) study, minority elementary school students were less engaged academically, but minority and nonminority middle school students did not differ on Academic Engagement (Lee & Smith, 1993). Furthermore, minority high school students (in an analysis controlling for engagement during the eighth grade) were more likely to be engaged in their academic work than White students (Lee & Smith, 1993). Connell & Spencer (1994) also found that African American high school students are often more engaged than White or Hispanic students and thus suggested, "engagement is the most proximal point of entry for reform efforts designed to enhance the educational chances of poor African American youth" (1994, p. 504). In support of this finding, Johnson, Crosnoe, & Elder (2001) reported higher SES and African American students were more academically engaged than other groups in a nationally representative sample. However, school size mitigated these effects. Regardless of the student background variable, the larger the school, the less likely it was that students were engaged. Johnson's et al. (2001) study also illuminated an interesting phenomenon, an engagement-achievement paradox among African American students. That is, even though African American students were significantly more engaged than other ethnic groups of students, their academic achievement was also significantly lower. Shernoff & Schmidt (2008) examined this phenomenon more closely and also found support for Johnson's et al. (2001) findings. Results from a sample of over 3,000 classroom experiences showed African American students reported higher engagement and intrinsic motivation, but lower self-reported grades. This same paradox was found in students from lower SES communities. The researchers also found that being on-task had a more positive effect on engagement in African American students than in white students (Shernoff & Schmidt,

2008). A key caveat raised relates to the type of engagement being measured. In their study, racial and ethnic differences were stronger in emotional measures of engagement (i.e. intrinsic motivation and affect) compared to ethnic differences on measures such as challenge, importance and concentration. The authors suggest, "the engagement–achievement paradox appears to be supported to a greater extent when the measure of engagement is emotional compared to cognitive (Shernoff & Schmidt, 2008, p. 576). The authors also report that this disparity in engagement depends on whether the data is self-report or other-reported. When relying on teacher self-report, results may also be affected by the teacher's ethnicity; in studies where teachers report on the behavior of their students, white teachers reported lower levels of engagement regarding their black students than black teachers did (Downey & Pribesh, 2004; Uekawa, Borman, & Lee, 2007).

School size has also been shown to have a negative relationship with engagement, however these findings are nuanced. In their examination of the U.S. High School and Beyond database, Lee and Smith (1995) found that engagement was higher and more evenly distributed among student ethnic groups in the small schools. In a study of over 2,500 teachers and 3,500 students in 96 Australian schools, Silins and Mulford (2004) examined the impact of school context variables, including school size, on participation in school activities including academic activities. They found school size had a direct and negative relationship with participation and engagement with school. Kuziemko (2006) found that elementary school students' engagement was negatively correlated with school size and that these effects increased the longer students were enrolled in small schools. In their study of high schools participating in the Gates Foundation's National

High Schools Initiative, Shear et al. (2008) found that in small start up schools (schools founded as small schools) students in their third year reported significantly higher levels of academic interest than did students in large schools. However, in their analysis of third year students in small conversion schools (small schools created from the division of large schools) there was no significant difference between reported academic interests in small versus large schools.

## Summary and Significance of Study

Over the past thirty years, smaller learning communities have proliferated across the country. Much of the research on these SLCs suggests they are effective in curbing drop-out rates and increasing attendance and graduation rates for all students, especially at-risk populations. Consensus within the research surrounding their effectiveness in increasing academic achievement has proven elusive. Two elements of effective SLCs promoted as essential for success, Academic Press and Social Support for Learning, were examined in this research study. Both of these constructs are associated with increased gains in achievement and engagement when experienced in isolation, however the impact of press is limited on female, minority and low SES students (Lee & Smith, 1995; Wehlage, 1989). Furthermore, the research suggests that Academic Press when combined with a culture of Social Support for Learning yields gains in achievement scores and in student engagement regardless of SES or ethnic background.

This research study examined the relationship between Academic Press and Social Support for Learning on Academic Engagement. First, this study adds to the scant research examining the relationship between smaller learning communities and Academic Engagement characterized by cognitively challenging instruction. Data regarding

observed and self-reported levels of Academic Engagement provided insights into whether smaller learning communities might promote Academic Engagement. Academic Engagement is a variant of student engagement centered on the depth of cognitive processing required from the curriculum and instruction to which students are exposed, and thus can be viewed as a measure of teaching for higher-order thinking. The central premise of the theory was that challenging instruction requires high-order thinking and garner greater student attention, interest and thus engagement. While several studies report an inverse relationship between African American students' self-report of engagement and achievement, many studies examining Academic Engagement in smaller learning communities (Lee & Smith, 1995; Lee & Smith, 1999; Marks, 2000) conclude that SLCs featuring Academic Press and Social Support for Learning enhance Academic Engagement especially for ethnic minorities and low SES students. However, these studies relied exclusively on self-report data survey data from students. This study utilized self-report survey data from students but also examined classroom observation data as well as teacher focus group data to better elucidate the relationship between Academic Press, social support for student learning and Academic Engagement in smaller learning community classrooms. It asked the following research questions:
Research Question #1: How does the smaller learning community structure impact levels of Academic Press, Social Support for Learning and Academic Engagement in first time ninth grade students in large comprehensive high schools?

Research Question #2: What is the relationship between Academic Press and social support in their contribution to/impact on engagement as an outcome measure of student learning?

Research Question #3: How do these relationships differ as a function of students' gender or ethnicity characteristics?

Results have practical implications for how SLCs should emphasize press and social support to best promote achievement, especially for at-risk youth in urban settings. Based on the research literature, the SLC structure should enhance press, support and thus engagement. Unfortunately, the research design does not allow for the collection of base-line data nor comparisons among schools, so it will not be possible to make valid claims about the ability of SLCs to enhance levels of the constructs at focus. It is expected that positive relationships will be identified among press and social support and that where high levels of these constructs are identified, high levels of engagement will also exist and the gender and ethnic differences noted in the literature will not be evident.

# CHAPTER THREE: METHODS

The purpose of this study was to examine the relationships among Academic Press, levels of social support among students and Academic Engagement in large comprehensive high schools implementing smaller learning communities. This study was part of a larger program evaluation associated with a U. S. Department of Education smaller learning community grant. This mixed methods study employed quantitative analysis of classroom observation data and student survey data and qualitative content analysis of teacher focus group data collected to address the following research questions:

Research Question #1: How does the smaller learning community structure impact levels of Academic Press, Social Support for Learning and Academic Engagement in first time ninth grade students in large comprehensive high schools?

Research Question #2: What is the relationship between Academic Press and social support in their contribution to/impact on engagement as an outcome measure of student learning?

Research Question #3: How do these relationships differ as a function of students' gender or ethnicity characteristics?

Following is a description of the study's participants, measures, procedure, data analysis and limitations.

## Participants

This study examined implementation of smaller learning communities in four high schools in an urban school district in southeastern Virginia serving approximately 37,000 students. Each of the high schools participating in the study were at varying degrees of

implementation of their smaller learning communities initiative and had slightly different demographic make-ups. At the time of data collectiion, all four of the participating high schools offered small learning community programs for their first-time ninth graders and all had offered smaller learning communities for at least two years.

**School Size**

The total number of students enrolled in each grade level is provided in Table 1. In the 2008-2009 school year, high school #1 enrolled a total of 1,470 students; 671 of those students were enrolled in ninth grade. High School #2 enrolled 864 ninth graders and 2,199 total students in 2008-2009. In high school #3, 729 of its 2,003 students were enrolled in ninth grade in 2008-2009. High School #4 was the smallest of the four schools enrolling 1,987 students during the 2008-2009 school year, 787 of which were ninth graders.

Table 1

*Student Enrollment Data by grade level as of Sept. 30, 2009*

| | 9th Grade | 10th Grade | 11th Grade | 12th Grade | Total |
|---|---|---|---|---|---|
| High School #1 | 671 | 394 | 194 | 211 | 1470 |
| High School #2 | 864 | 556 | 397 | 382 | 2199 |
| High School #3 | 729 | 511 | 386 | 377 | 2003 |
| High School #4 | 787 | 521 | 296 | 383 | 1987 |

**Student Characteristics by School**

Student enrollment by ethnic group for the 2008-2009 school year is included in Table 2. African Americans were the largest ethnic group across all high schools

participating in the study. High School #1 had the largest African American population with 86 percent of their total student population. High School #2 was the most diverse of the schools participating in the study, 52 percent of their total student populations was African American and 35 percent was classified as white. It also had the largest proportion of Hispanic students at just four percent. High Schools #3 and #4 had similar ethnic breakdowns with was African American populations of 57 and 59 percent respectively. Each high school's ninth grade classes were the largest in the school.

Table 2

*Student Demographic Information per Participating High School 2008-2009*

| | High School #1 | High School #2 | High School #3 | High School #4 |
|---|---|---|---|---|
| African American | 86% | 53% | 57% | 59% |
| Hispanic | 1.5% | 4.0% | 3.2% | 3.3% |
| White | 6.7% | 35% | 33% | 30% |
| Ninth Grade | 45.6% | 39.3% | 36.4% | 39.6% |
| Students Total | 1,470 | 2,199 | 2,003 | 1,987 |

**Teacher Quality at Participating Schools**

All teachers across the participating high schools were highly qualified. Teacher quality information for each participating high school is provided in Table 3. At High School #1 98 percent of the teachers in academic courses were classified as highly qualified in 2008-2009 and 45 percent of the teachers had earned at least a masters degree, while 15 percent of the teachers in the building were provisionally licensed. 99 percent of the teachers teaching academic courses in High School #2 were classified as

highly-qualified, ten percent had provisional licenses and 52 percent had earned at least masters degree. Only 5 percent of the teachers at High School #3 were provisionally licensed. Ninety-nine percent of High School #3's teachers were classified as highly qualified in 2008-2009 and 52 percent had earned a least a masters degree. Finally, 98 percent of the teachers of core academic courses in High School #4 were reported as highly-qualified, and nine percent taught with provisional licenses. Forty-four percent of High School #4's teachers had earned at least a masters degree.

Table 3

*Teacher Quality per participating High School 2008-2009*

| | High School #1 | High School #2 | High School #3 | High School #4 |
|---|---|---|---|---|
| Percentage Highly Qualified | 98 | 99 | 99 | 98 |
| Percentage Provisionally Licensed | 13 | 7 | 8 | 5 |
| Percentage with Masters Degrees | 43 | 53 | 46 | 44 |
| Percentage Doctorates | 1 | 1 | 1 | 3 |

## Measures

This study examines data from three sources: a survey of participating students, observations of SLC classrooms, and teacher focus groups. Measures for each data source are described below.

### Student Survey

Students responded to survey items about their attitudes, behaviors and experiences in their classes, about their experiences in school more generally, and about their personal and family background. As part of a larger SLC program evaluation, most

of the survey items were taken with permission from the 2003 version of the Consortium of Chicago School Research (CCSR) biennial survey designed for use in Chicago Public Schools small schools initiative (Consortium on Chicago School Research, 2003). The survey included 113 items and was administered at the end of the school year after the administration of mandated state end-of course tests. Most survey items required rating responses on a five point Likert-type scale assessing the frequency of given behaviors ranging from "never" through "almost every day." Other items employed a four point rating scale measuring levels of agreement with statements ranging from "strongly disagree" through "strongly agree." The constructs used to address the research questions in this study are described in Table 4. These scales were developed by the CCSR for use in Chicago's Public Schools using Rasch scaling (Wright & Masters, 1982). The Rasch approach permits the creation of a latent variable that is conceptually and empirically cohesive. Using items that relate to the same characteristic, a scale was constructed reflecting the relative difficulty of each item (i.e., the likelihood that respondents will agree with a given item). Scales were evaluated using a pearson reliability statistic (the ratio of adjusted standard deviation to the root mean square error computed over the persons), which is approximately equivalent to Cronbach's alpha (Kahne et al., 2008)

Table 4

*Description of Student Survey Measures*

| Measure | Number of Items | Description |
|---|---|---|
| Academic Press | 5 | Students' views of their teachers' efforts to push them to higher levels of academic performance. Students reported on teachers' expectations of effort and participation. For example, In your math class, how often: Do you have to work hard to do well? |

| | | |
|---|---|---|
| Academic Engagement | | Academic engagement includes interest in class and level of cognitive processing inherent in instruction, therefore this measure is made up of an index of three scales: General engagement, Quality of math Instruction and Quality of English Instruction. |
| General engagement | 8 | General engagement includes items asking students about their interest in class and the topics studied as well as the effort they put into class. Items ask about students agreement with statements such as, I find topics in this class interesting and challenging. |
| Quality English Instruction | 7 | Quality of English instruction includes items that ask students about the level of cognitive challenge they experience during instruction. For example, "In your English class how often do you discuss how culture, time and place affects an author's writing?" |
| Quality Math Instruction | 7 | Quality of math instruction includes items that ask students about the level of cognitive challenge they experience during instruction. For example, "In your math class how often do you apply math to situations outside of school?" |
| Social Support for Learning | | Social Support for Learning is an index of three scales related to the quality of the social bonds students experience as part of a smaller learning community. |
| Socialization | 6 | Socialization asks students to rate thier agreement with statements regarding whether classmates treat each other with respect, work together well, and help each other learn. For example, "Most students in this class like to put each other down." |
| Classroom Personalism | 7 | Classroom Personalism gauges whether students perceive that their classroom teachers give them individual attention and show personal concern for them. This scale includes items regarding agreement with statements relevant to the construct. For example, "My teacher gives give me extra help on school work if I need it." |

Table 5 provides reliability information published from a similar study using the same questionnaire (Kahne et al., 2008) and from a pilot study conducted by the researchers one year prior. The reliability coefficients obtained during the pilot study were relatively close to those published in the earlier study. The scale examining the level of classroom Personalism, that is student-teacher rapport, had the highest reliability from pilot data at .91, but all of the scales hanged together fairly well with the lowest coefficient at .74 which is well within the acceptable range.

Table 5.

*Reliability of Student Survey Measures*

| Scale | Pilot Study Reliability | CCSR Reliability |
|---|---|---|
| Academic Press | .83 | .76 |

| | | |
|---|---|---|
| General engagement | .73 | .83 |
| Quality English Instruction | .87 | .86 |
| Quality Math Instruction | .79 | .76 |
| Socialization | .74 | .74 |
| Classroom Personalism | .91 | .74 |

Details for each scale are described below including examples of items and alpha coefficients. A copy of the survey is included (see Appendix A).

**Academic Press.** The scale includes four-point Likert-type items. Students' views of their teachers' efforts to push students to higher levels of academic performance. Students also report on teachers' expectations of student effort and participation. For example, "In your math class, how often: Do you have to work hard to do well?" High levels indicate that most teachers press all students toward academic achievement. The pilot of the survey with a sample from each of the participating high schools reported a Cronbach's Alpha of .83 and the scale's publisher reported an Alpha coefficient of .76.

**Academic Engagement.** Academic engagement includes interest in class and level of cognitive processing inherent in instruction, therefore this measure is made up of an index of three scales: General engagement, Quality of Math Instruction and Quality of English Instruction.

***General Engagement.*** General engagement includes eight five-point Likert-style questions asking students about their interest in class and the topics studied, as well as the effort they put into class. Items ask students the extent to which they agree with

statements such as, "I am generally bored in my classes." The reliability coefficients for the pilot study was .73. CCSR published an alpha of .83 for General engagement.

***Quality of Math Instruction and Quality of English Instruction.*** Quality of Math Instruction and Quality of English Instruction each have seven items that ask students about the level of cognitive challenge they experience during instruction in these subjects. For example, "In your math class how often do you apply math to situations outside of school?" The pilot survey yielded alpha scores of .79 for Quality of Math Instruction and .87 for Quality of English Instruction, .87. CCSR published alpha coefficients were .76 and .86 for the math and English scale respectively.

**Social Support for Learning.** Social Support for Learning is an index comprised of two sub-scales related to the quality of social bonds students experience as part of a smaller learning community. Two scales examine student-student relationships and one considers student-teacher relationships. Each scale is described below.

***Socialization.*** Socialization asks if students' classmates treat each other with respect, work together well, and help each other learn, and if their students disrupt class, like to put others down, and do not care about each other. This scale includes six four-point Likert-type items asking about other students in target math or English classes. For example, "Most students in this class like to put each other down." The pilot survey indicated an alpha score of .74 and CCSR published a score of .74.

***Classroom Personalism.*** Classroom Personalism gauges whether students perceive that their classroom teachers give them individual attention and show personal concern for them. Students are asked if their teachers know and care about them, notice if they are having trouble in class, and are willing to help with academic and personal

problems. A high score means students experience strong personal support from school staff. This scale contains seven items four-point Likert-style items gauging agreement with statements relevant to the construct. For example, "My teacher is willing to give me extra help on school work if I need it." The pilot survey for this study indicated an alpha score of .91 and CCSR indicated an alpha of .74.

**Classroom Observation Protocol**

The classroom observation protocol measured three constructs: Instructional Strategies, Academic Press, and Classroom Climate (Personalization). The protocol was created from two observation instruments. While the instrument was developed by the research team working on the smaller learning communities grant, much of it is loosely modeled from the *School Observation Measure (SOM),* a classroom observation protocol created by the Center for Research and Educational Policy (CREPS) at the University of Memphis. It examines the frequency with which 24 instructional strategies are used during observations (Ross, Smith, Alberg, 1999). The frequency was recorded using a five-point rubric that ranges from (0) *Not observed* to (4) *Extensively observed.* The target strategies included traditional practices (e.g., direct instruction and independent seatwork) and alternative practices, predominately student-centered methods associated with educational reforms (e.g., cooperative learning, project-based learning, inquiry, discussion, and using technology as a learning tool). These strategies were identified through surveys and discussions involving policy makers, researchers, administrators, and teachers, as those most useful in providing indicators of schools' instructional philosophies and implementations of commonly used reform designs (Ross, Smith, Alberg,& Lowther, 2004).

The remaining items on the observation instrument were modeled from the *Rubric for Student-Centered Activities (RSCA)*. The *RSCA* was developed as an extension to the *SOM* and another observation instrument the *Observation of Computer Use* (OCU) to more closely evaluate the degree of learner engagement in seven areas considered fundamental to student-centered learning: cooperative learning, project-based learning, higher-level questioning, experiential/hands-on learning, student independent inquiry/research, student discussion, and students as producers of knowledge using technology (Lowther & Ross, 2000). Results from a 2004 reliability study revealed that whole school observer ratings for the *SOM* were within one category for 96% of observations and *RSCA* ratings were also within one category for 97% of the observations (Sterbinsky & Burke, 2004).

Items relevant to the constructs at focus in this study were combined to create the following scales: General engagement, Academic Press, and Social Support for Learning. These scales examine student behaviors similar to those scales from the student survey with the same names. Table 6 describes the items comprising each scale and their respective Cronbach alpha scores.

Table 6.

*Scale Items and Alpha Scores from Observation Data*

| Scale | Instrument Items | Cronbach Score |
|---|---|---|
| Academic Press | 7, 8,11, 12, 13 | .95 |
| General engagement | 1, 5, 9, 10, 14, 17, 18, 21 | .89 |
| Social Support for Learning | 3, 15, 19, 22 | .78 |

The observation instrument allowed researchers to include open-ended comments for each behavior observed. These comments were analyzed for content and results are included to support and illuminate the behavioral frequency data. The instrument was field tested and revised in the participating high schools prior to data collection to increase reliability and validity.The observation instrument is included (see Appendix B).

**Focus Group Protocol**

The purpose of the focus group interviews was to assess teachers' perceptions of their SLC experiences as they relate to collegial relationships and relationships among students, relationships between teachers and parents, the overall learning climate, and the level of rigor fostered during instruction that will serve as a proxy measure for Academic Engagement. Items making up the protocol were developed based on relevant research literature and were revised after its first year of use given feedback from expert review. The focus group interview protocol consists of 16 open-ended questions developed to solicit teachers' perceptions of their SLC experiences. A copy of the interview protocol is included (see Appendix C). Particular attention was focused on questions that asked teachers about their relationships with students, the relationships among students in their respective SLCs, the degree of rigor inherent in instruction (as a proxy for Academic Engagement), and the degree to which SLC teachers promoted a systematic push toward academic achievement. The researchers involved in the SLC program evaluation developed the instrument collaboratively.

## Procedure

**Student Surveys**

Surveys were administered in the last two weeks of May during English classes for every participating first-time ninth grade student. Surveys were collected by grant

coordinators and submitted to the research team. Initial entry of data was completed by the Old Dominion Social Science Research Center. Directions for the survey, as well as a statement assuring anonymity, were read by the classroom teacher. Students were given one 90-minute class period to complete the survey.

**Classroom Observation**

As part of a larger program evaluation associated with a U.S. Department of Education smaller learning community grant, four researchers observed classrooms in the four participating high schools. They completed at least 15 observations per participating high school in various subject areas including a freshmen leadership/Scholars course. Each observation was conducted for 45 minutes to one hour. A letter introducing the observers and explaining their presence in the schools as part of the larger evaluation program was distributed to teachers in all four high schools (see Appendix D). All observations were pre-arranged and teachers knew in advance their classes would be observed. Observations were arranged with grant coordinators from each school and were conducted at varied times of the school day. Observed teachers were part of a stratified purposeful sample (Patton, 2002) and were chosen by the grant coordinators based upon their participation in the smaller learning communities program with a mind toward considering all participating teachers.

**Teacher Focus Groups**

Six research professionals performed the focus group interviews in teams of two. One researcher acted as a moderator while the other served as recorder. For consistency, one researcher was the point person for each school and handled logistics and

communication and served as interview moderator. Thus, each moderator conducted two interviews at his or her assigned high school.

SLC coordinators at each high school were asked to schedule focus group interviews with a purposefully selected sample of teachers at each grade level participating in the SLC program. Teachers were selected so that each SLC in the school was represented during the interviews. Groups consisted of approximately five teachers. The interviews were held at the convenience of the teachers with most interviews occurring during school or immediately after school, lasting 60-90 minutes.

After welcoming the teachers and explaining the purpose of the focus group interviews, the moderator posed questions included in the protocol and when appropriate, asked probing follow-up questions. Teacher responses were digitally recorded and transcribed verbatim to the extent possible.

## Data Analysis

### Survey Data

A multivariate analysis of variance (MANOVA) was conducted on student survey data to address the research questions regarding the relationships among Academic Press, Social Support for Learning and Academic Engagement. Academic Press and classroom Personalism (student-teacher rapport), Socialization (student-student rapport), ethnicity, and gender were used as independent variables, while the three measures of Academic Engagement (general engagement, Quality Math Instruction and Quality English Instruction) were used as the dependent variables variable. The independent variables and dependent variables were divided into three equal groups and differences among levels of groups were examined for main and interaction effects.

### Observation Data

The frequency of target behaviors from class observations was tabulated and analyzed using descriptive statistics (i.e. mean, standard deviation, and range). Results were used to describe observed levels of Academic Press, Social Support for Learning and Academic Engagement present in the sample. Additionally, a regression analysis was conducted using Academic Press and Social Support for Learning as predictor variables and Academic Engagement as a criterion variable.

### Focus Group Data

Interview transcripts were analyzed to identify topics, categories, themes or patterns that occurred most frequently across schools. Transcripts were read carefully with notes regarding themes, topics, and patterns written in the margins. This process yielded a coding system that facilitated categorization of data. Transcripts were read a second time to code data into categories. Patterns or themes among or within categories were identified. Transcripts were read until all relevant interview responses were coded. Quotes were used to illustrate responses by category and establish reliability of findings.

## Limitations

Although this study will make a significant contribution to the research literature, there were several limitations inherent in the methodology. Due to its non-experimental design, reliability and external validity is suspect. Samples for all of the data collected were not random. Student surveys were administered to all students present the day of survey administration, but no efforts were made to secure survey responses from students absent during the initial administration. Classroom observations and teacher focus groups were purposefully sampled and thus external validity is questionable. Moreover,

there was no comparison group, nor was there any manipulation of the independent variables involved, thus it is challenging to isolate those variables (Academic Press and Social Support for Learning) as significant influences on Academic Engagement the dependent variable for populations outside the samples of this study. Thus, it is difficult to isolate smaller learning communities alone as the cause of increased social support or engagement.

Additionally, there may have been confounding variables that also had an impact on the target variables. For example, the presence of a well-established International Baccalaureate Diploma program at one of the high schools in the sample could certainly have affected the level of academic expectations ingrained among students at that school, which in turn would impact students' responses to the questionnaire and teachers' responses to the focus group questions.

Reliability of results may also be an issue. This study also relies heavily on self-report data for both the student survey and teacher focus group. Participating students and teachers may have responded to survey and interview items in ways they perceived to be socially desirable. Due to the use of self-report data, the internal validity of the survey and teacher focus group is less than optimal, however these datum will be used in triangulation.

Furthermore, the means by which data was collected introduces threats to the reliability of the measures that may raise questions about the conclusions derived. For example, teachers knew in advance when their classes would be observed and were provided with a copy of the observation instrument in advance. Teachers and students

may have behaved differently in observed classes because they were participants in a study, thus introducing the possibility of the Hawthorne effect.

The collection of observation data also introduces reliability issues. Although the researchers involved participated in in-depth discussions around the items in the observation instrument after its pilot and came to consensus regarding the conception of the various constructs it measures, each observer's interpretation of student and teacher behavior and how it relates to the items in the observation instrument is somewhat questionable because interrater reliability was not established for this instrument among observers. This issue is also relevant to the focus interview data because several different researchers collected interview data.

# CHAPTER IV: RESULTS

Results and findings are organized by data source. First, data from the student questionnaire examining perceptions of the SLC experience were examined using multivariate analysis of variance to determine if Academic Press and Social Support for Learning significantly impact Academic Engagement and to determine whether particular demographic characteristics influence this relationship. Next, descriptive statistics of data from classroom observations are presented illustrating the levels of Academic Press, Social Support for Learning and Academic Engagement that were observed in the participating high schools. Finally, emergent themes based on focus group interview data are described to add depth and context to the subsequent findings.

## Questionnaire Findings

The overall means and standard deviations for each measure of Academic Engagement (i.e. General engagement, Quality English Instruction, and Quality Math Instruction) were calculated and are shown in Table 7. As noted in the previous chapter, the scales for Quality English and math instruction used a five point scale, while the General engagement measure used a four point scale. The overall mean for General engagement was at the midpoint, 2.38 on a four point scale, while the means for Quality English Instruction and Quality Math Instruction were also at midpoints, 3.06 and 2.98 on a five point scale. These results indicate that SLC students self-reported that they look forward to class, work hard to do their best, are not usually bored and make good use of their time in their classes (general engagement) to only a marginally greater degree than they solve math problems involving multiple steps that take long periods of time, have to write out explanations of solutions to problems in math classes or discuss point of view,

symbolism and metaphor regarding literature, or write extended responses to essay questions in their English classes (Quality of Math and English Instruction).

Table 7

*Overall Descriptive Statistics for General engagement, Quality English Instruction and Quality Math Instruction*

| | N | Mean | Range | SD |
|---|---|---|---|---|
| General Engagement | 1,147 | 2.38 | 1-4 | .52 |
| Quality English Instruction | 1,157 | 3.06 | 1-5 | .99 |
| Quality Math Instruction | 1,174 | 2.98 | 1-5 | .92 |

**MANOVA Findings**

In order to investigate the influence of relationships among Social Support for Learning, Academic Press, ethnicity, gender, and engagement a factorial multivariate analysis (MANOVA) was conducted. The independent variables were Academic Press, Personalism, Socialization, ethnic group and gender. Academic Press, Personalism and Socialization (student-student rapport) were divided into three equal groups (i.e. low Press, medium Press, and high Press) according to scores on the relevant scale items. Ethnic groups were divided into three groups also (white, African American, and Other). The number of student ethnic groups comprising the Other category were too low to enable valid comparisons individually. The dependent variables included General engagement, Quality English Instruction, and Quality Math Instruction. Analysis of the linear combination of the three dependent variables was conducted as well as follow-up factorial analyses of variance (ANOVA) in order to determine main effects and interaction effects. Scheffe's post hoc test was also conducted on main effects to

determine which levels of independent factors significantly differ from others with respect to each dependent variable.

The MANOVA results indicate a significant main effect for each factor included in the model except gender, including: Academic Press, Personalism, Socialization, and ethnic group. Significant interaction effects were identified between Academic Press and ethnic group, Academic Press and gender, Academic Press and Personalism, and Socialization and ethnic group. Significant results of are presented in Table 8.

Table 8

*Results of MANOVA (Wilks' Lambda) for Academic Press, Personalism, Socialization, Ethnicity, and Gender on General engagement, Quality of English Instruction and Quality of Math Instruction*

| | $F$ | df | Sig. | $\lambda$ | $\eta^2$ |
|---|---|---|---|---|---|
| Academic Press | 5.44 | 6, 1794 | .00 | .965 | .018 |
| Personalism | 7.08 | 6, 1794 | .00 | .954 | .023 |
| Socialization | 5.16 | 6, 1794 | .00 | .966 | .017 |
| Ethnic Group | 2.14 | 6, 1794 | .05 | .986 | .007 |
| Academic Press x Ethnic Group | 2.45 | 12, 2373 | .00 | .968 | .011 |
| Academic Press x Gender | 3.13 | 6, 1794 | .00 | .979 | .010 |
| Academic Press x Personalism | 1.76 | 12, 2373 | .05 | .977 | .008 |
| Socialization x Ethnic Group | 3.08 | 12, 2373 | .00 | .960 | .014 |
| Socialization x Gender | 2.11 | 6, 1794 | .05 | .986 | .007 |

Follow-up analyses focused on the significant main effects and interaction effects described above. Significant follow-up ANOVA results are organized by factor and presented in Table 9. Academic Press and Personalism resulted in main effects on each dependent variable: General engagement, Quality English Instruction and Quality Math Instruction. Socialization significantly influenced General engagement and Quality of Math Instruction. The ethnic group variable showed a main effect only for General engagement and gender indicated a main effect only for Quality of Math Instruction. Academic Press and ethnic groups resulted in an interaction effect only for Quality of Math Instruction. Academic Press and gender significantly influenced only General engagement. There were no interaction effects observed for Academic Press and Personalism for specific dependent variables. Socialization and ethnic group significantly influenced General engagement. There was not a significant interaction effect for Socialization and gender on any of the individual dependent variables.

Table 9

*Follow-up ANOVA results for Academic Press, Personalism, Socialization, Ethnicity, and Gender on General engagement, Quality of English Instruction and Quality of Math Instruction*

| Source | Dep. Var | $F$ | df | Sig. | $\eta^2$ |
|---|---|---|---|---|---|
| Academic Press | | | | | |
| | Gen. Engagement | 8.77 | 2, 3.90 | .00 | .019 |
| | Quality English | 9.40 | 2, 16.64 | .00 | .020 |
| | Quality Math | 3.73 | 2, 5.65 | .024 | .008 |
| Personalism | | | | | |
| | Gen. Engagement | 14.93 | 2, 6.64 | .00 | .032 |
| | Qual. English | 5.03 | 2, 8.91 | .01 | .011 |

| Source | Dep. Var | *F* | df | Sig. | $\eta^2$ |
|---|---|---|---|---|---|
| Socialization | Qual. Math | 6.79 | 2, 10.30 | .00 | .015 |
| | Gen. Engagement | 8.40 | 2, 3.73 | .00 | .018 |
| Ethnic Group | Qual. Math | 6.503 | 2, 9.87 | .00 | .014 |
| | Gen. Engagement | 5.38 | 2, 2.39 | .01 | .012 |
| Academic Press x Ethnic Group | Qual. Math | 2.92 | 6, 8.87 | .02 | .013 |
| Academic Press x Gender | Gen. Engagement | 7.919 | 6, 3.52 | .00 | .017 |
| Socialization x Ethnic Group | Gen. Engagement | 3.18 | 6, 2.83 | .013 | .014 |

**Academic Press.**

Table 10 presents the means and standard errors of the main effect for Academic Press on the three measures of Academic Engagement: General engagement, Quality of English Instruction, and Quality of Math Instruction. Scheffe's test revealed that each of the groups comprising the Academic Press variable (low, medium, and high) are significantly different from one another on all three dependent measures. As shown in Table 10, high Press groups reported higher levels of general engagement than did medium Press and low Press groups. The post-hoc comparisons indicate that the mean difference among all three groups were statistically significant, low Press and medium Press groups (*M* difference = -.209, $p<.01$); low Press and high Press groups (*M* difference = -.386, $p<.01$); medium Press and high Press groups (*M* difference = -.176,

$p<.01$). The mean General engagement score for students that perceived low Academic Press was 2.20, while those in the high Academic Press group had 2.50 on a 4 point scale. Of all the dependent measures, General engagement showed the lowest variability, however Academic Press was still a significant factor in the Quality English and Math measures.

Table 10

*Means and Standard Deviations for Main Effect of Academic Press on General engagement, Quality of English Instruction and Quality Math Instruction*

| Dependent Variable | IV Subset | n | Mean | SE |
|---|---|---|---|---|
| General engagement | | | | |
| | Low Press | 335 | 2.20 | .039 |
| | Medium Press | 412 | 2.38 | .031 |
| | High Press | 307 | 2.47 | .037 |
| Quality English Instruction | | | | |
| | Low Press | 335 | 2.76 | .077 |
| | Medium Press | 412 | 3.07 | .062 |
| | High Press | 307 | 3.29 | .074 |
| Quality Math Instruction | | | | |
| | Low Press | 335 | 2.72 | .071 |
| | Medium Press | 412 | 2.94 | .057 |
| | High Press | 307 | 3.08 | .069 |

The mean Quality English Instruction score for students perceiving low Academic Press was 2.76, for those in the high Academic Press group it was 3.29 on a 5 point scale. Scheffe's test revealed that all groups comprising the Academic Press variable were significantly different from one another. As shown in Table 10, high Press groups reported higher levels of engagement in cognitively challenging English instruction than did medium Press and low Press groups. The post-hoc comparisons indicate that the mean difference among all three groups were statistically significant, low Press and medium Press groups (*M* difference = -.346, $p<.01$); low Press and high Press groups (*M* difference = -.619, $p<.01$); medium Press and high Press groups (*M* difference = -.273, $p<.01$).These results indicate that Academic Press is also a significant factor in determining levels of Academic Engagement characterized by cognitively challenging English instruction. Students who perceived higher levels of Academic Press also reported higher engagement in English instruction.

The group scores on the Quality Math Instruction score are not as discrepant as group scores on the other variables. The scores ranged from 2.72 on a five-point scale for students perceiving low Academic Press to 3.08 for the high Press group. These results indicate that Academic Press is a significant factor in determining levels of Academic Engagement characterized by cognitively challenging math instruction. Scheffe's tests also revealed all three Press groups as significantly different from one another. As shown in Table 9, high Press groups reported higher levels of engagement in cognitively challenging math instruction than did medium Press and low Press groups. The post-hoc comparisons indicate that the mean difference among all three groups were statistically significant, low Press and medium Press groups (*M* difference = -.351, $p<.01$); low Press

and high Press groups (*M* difference = -.554, p<.01); medium Press and high Press groups (*M* difference = -.203, p<.01).Those students that reported high levels of press also reported high levels of engagement in cognitively challenging math instruction, while those in low Press groups reported the lowest levels of engagement in math classes. Thus, when students experienced high levels of press in math class, they were also more likely to find instruction stimulating.

**Personalism.**

Table 11 provides the means and standard errors for the main effect of Personalism on all three dependent variables, General engagement, Quality of English Instruction and Quality of Math Instruction. Scheffe's test revealed that all Personalism groups significantly differed from one another on the General engagement variable. The results indicate that students perceiving high levels of Personalism are more generally engaged, with a mean of 2.50, than students perceiving medium levels of Personalism, mean equals 2.34, and those in the medium group are more engaged than those in the low group that reported a mean of 2.19. As shown in Table 11, high Personalism groups reported higher levels of general engagement than did medium Personalism and low Personalism groups. The post-hoc comparisons indicate that the mean difference among all three groups were statistically significant, low Personalism and medium Personalism groups (*M* difference = -.192, p<.01); low Personalism and high Personalism groups (*M* difference = -.418, p<.01); medium Personalism and high Personalism groups (*M* difference = -.226, p<.01).

Table 11

*Means and Standard Deviations for Main Effect of Personalism on General engagement, Quality of English Instruction and Quality Math Instruction*

| Dependent Variable | IV Subset | n | Mean | SE |
|---|---|---|---|---|
| General engagement | | | | |
| | Low Personalism | 343 | 2.19 | .035 |
| | Medium Personalism | 375 | 2.34 | .034 |
| | High Personalism | 336 | 2.50 | .038 |
| Quality English Instruction | | | | |
| | Low Personalism | 343 | 2.86 | .069 |
| | Medium Personalism | 375 | 2.97 | .067 |
| | High Personalism | 336 | 3.26 | .077 |
| Quality Math Instruction | | | | |
| | Low Personalism | 343 | 2.78 | .064 |
| | Medium Personalism | 375 | 2.82 | .062 |
| | High Personalism | 336 | 3.12 | .071 |

The results related to the Quality English Instruction and Quality Math Instruction dependent variables are less straight forward. Scheffe's test indicates that low Personalism groups and medium Personalism groups were significantly different from the high Personalism groups on the Quality English Instruction and Quality Math Instruction dependent variables, but not significantly different from each other suggesting that high levels of Personalism can impact engagement as defined by cognitively challenging work in math and English classes.

The high Personalism group had a mean of 3.26 for the Quality English variable, while the low Personalism group had a mean of 2.86. The mean difference among low Personalism and high Personalism groups were statistically significant, (*M* difference = -.526, $p<.01$); as was the mean difference between medium Personalism and high Personalism groups (*M* difference = -.420, $p<.01$); the mean differences between the medium Personalism and low Personalism groups were not significant.

Differences on the Quality Math Instruction dependent variable indicated a similar trend; the mean of the low Personalism group was 2.78, the medium group's mean was 2.82 and the high Personalism group's mean was 3.12. The mean differences between the medium and low Personalism groups were statistically significant different from the high Personalism group, (*M* difference = -.506, $p<.01$) and (*M* difference = -.369, $p<.01$) respectively, but these groups were not statistically different from each other. This pattern of means suggest that students perceiving their math and English teachers as taking a high levels of personal interests in them also perceive instruction in these classes as more challenging than those that believe their teachers take little or only moderate interest in them.

**Socialization.**

Table 12 presents the means and standard errors for the main effect of Socialization, the quality of social relationships among students, on General engagement and Quality Math Instruction. The follow up ANOVA did not indicate a significant effect for Quality English Instruction, but did indicate a main effect for General engagement. Scheffe's post-hoc tests indicated that the low Socialization group is significantly different from the middle and high Socialization groups, (*M* difference = -.167, $p<.01$) between the low and medium Socialization groups and (*M* difference = -.158, $p<.01$) between the low and high groups. However, the middle and high Socialization groups had means that were virtually identical. Thus, students in classes with poor student-student rapport $M = 2.22$ reported lower general engagement than those in classes with moderate or high student rapport.

Table 12

*Means and Standard Deviations for Main Effect of Socialization on General engagement and Quality Math Instruction*

| Dependent Variable | IV Subset | n | Mean | SE |
|---|---|---|---|---|
| General engagement | | | | |
| | Low Socialization | 299 | 2.22 | .038 |
| | Medium Socialization | 269 | 2.42 | .039 |
| | High Socialization | 486 | 2.40 | .030 |
| Quality Math Instruction | | | | |
| | Low Socialization | 299 | 2.75 | .070 |

| Dependent Variable | IV Subset | n | Mean | SE |
|---|---|---|---|---|
| | Medium Socialization | 269 | 2.91 | .072 |
| | High Socialization | 486 | 3.07 | .055 |

Scheffe's test also revealed that students in the high Socialization group were significantly different from those in the low Socialization group on the Quality Math Instruction dependent variable (*M* difference = -.175, p<.05), but neither the high Socialization nor the low Socialization group were significantly different from the middle group. The high Socialization group had a mean of 3.07, while the low Socialization group had a mean of 2.75 suggesting that classes made up of students with strong social bonds found their math classes more challenging than those classes with weak bonds.

**Ethnicity.**

Table 13 describes the means and standard errors for the ethnic group main effect on General engagement. Follow up ANOVA tests did not indicate significant effects for Quality English or math instruction. Scheffe's test revealed that white students and African American students were significantly different from one another on this dependent variable (*M* difference = -.161, p<.01), as were the African American group and the "other" group (*M* difference = -.108, p<.05). However, the White group and "other" group were not significantly different from one another. Thus, African Americans reported being more generally engaged, albeit only minimally, than either White students or students characterized as "other" category.

Table 13

*Means and Standard Errors for Main Effect of Ethnic Group on General engagement*

| Ethnic Group | n | Mean | SE |
|---|---|---|---|
| White | 297 | 2.30 | .036 |
| African American | 582 | 2.43 | .025 |
| Other | 175 | 2.30 | .044 |

**Academic Press x Ethnicity.**

Table 14 describes the means and standard errors for the interaction of Academic Press and ethnic group on Quality Math Instruction and Figure 1 graphically illustrates this interaction. There were no significant interactions for these variables on General engagement and Quality English Instruction. Among students experiencing low levels of Academic Press, "other" students scored higher than the African American and White groups with the highest mean at 2.97 on the Quality Math Instruction scale, but among students experiencing medium and high Press African American students had the highest means, M = 3.08 and 3.25 respectively. Thus, while students in the "Other" ethnic group category perceived instruction as somewhat challenging in low Press math classes, African American students perceived their math classes as relatively challenging when they also perceive moderately high expectations from their teachers. Conversely, white and "other" students did not experience instruction as challenging when expectations were low or moderate.

Table 14

*Means and Standard Deviations for Interaction of Academic Press and Ethnic Group on Quality Math Instruction*

| Ethnic Group | Academic Press | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Low Press | | | Medium Press | | | High Press | | |
| | n | Mean | SE | n | Mean | SE | n | Mean | SE |
| White | 117 | 2.60 | .110 | 124 | 2.97 | .098 | 67 | 2.94 | .143 |
| African American | 180 | 2.61 | .099 | 225 | 3.08 | .068 | 200 | 3.25 | .069 |
| Other | 55 | 2.97 | .157 | 74 | 2.76 | .124 | 60 | 3.01 | .143 |

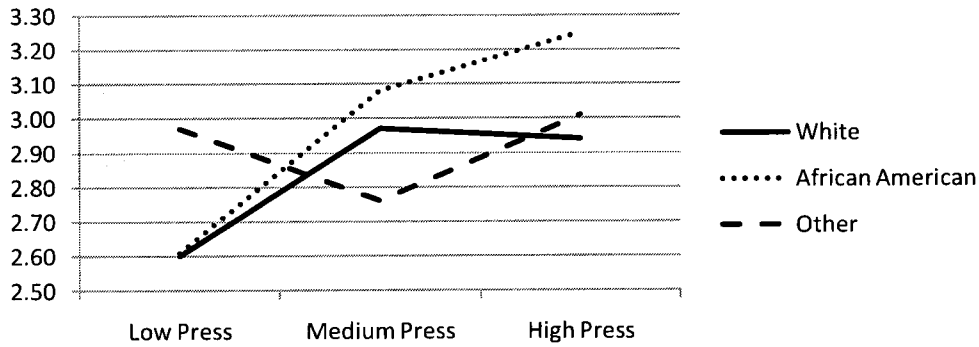


*Figure1.* Interaction for Academic Press and Ethnic Group on Quality Math Instruction.

Among students in the high Press group, African Americans perceived math instruction as most challenging, M=3.25. Whites were the least challenged by math instruction, M=2.94. Students in the "other" ethnic group category had a mean of 3.01. As with the middle Press group, African Americans that perceived their math teachers as having high expectations also felt that the instruction in those classes was more challenging than students in the other two ethnic groups. In summary, while there were no substantial differences in engagement measures for white students across levels of

Academic Press; in low Press classes, students in the "other ethnic group category were most engaged. Furthermore, in classes perceiving medium and high levels of Academic Press, African American students were more likely to be engaged.

**Academic Press x Gender.**

Table 15 describes the means and standard errors for the interaction of Academic Press and gender on Quality Math Instruction. Figure 2 graphically depicts the interaction of Academic Press and gender. Among students in the low Press group, girls had a higher mean, 2.31 than boys, 2.09. This result was reversed in the medium and high Press groups. Boys had a mean of 2.43 in the middle press group and 2.55 in the high Press group while girls had means of 2.32 and 2.41 in the middle and high Press groups respectively. These results suggest that in math classes, when expectations are perceived as high or relatively high, girls find the instruction more cognitively challenging than boys.

Table 15

*Means and Standard Errors for Interaction of Academic Press and Gender on General engagement*

| Gender | Academic Press | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Low Press | | | Medium Press | | | High Press | | |
| | n | Mean | SE | n | Mean | SE | n | Mean | SE |
| Female | 189 | 2.31 | .053 | 271 | 2.32 | .036 | 199 | 2.41 | .050 |
| Male | 179 | 2.09 | .056 | 167 | 2.43 | .050 | 148 | 2.55 | .055 |

n=1153

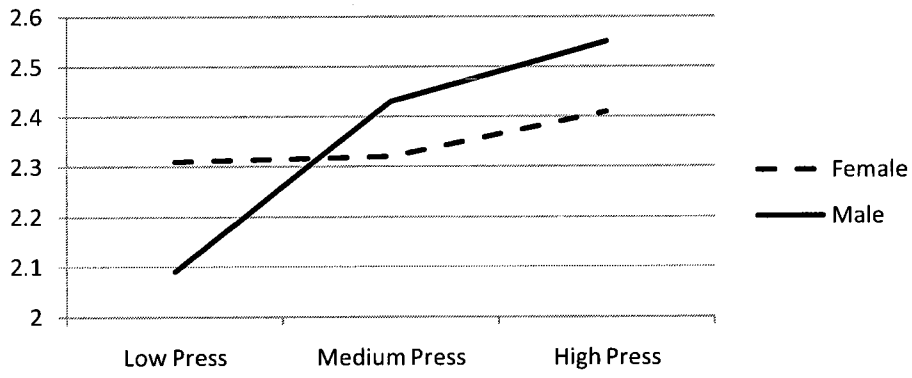


*Figure2.* Interaction for Academic Press and Gender on General engagement.

**Socialization x Ethnic Group.**

Table 16 describes the means and standard errors for the interaction of Socialization and ethnic group on General engagement. Figure 3 further illustrates this interaction. Among students in the low and medium Socialization Groups, African American students had the highest means on the General engagement scale at 2.35 and 2.51 respectively. In the low Socialization group "other" students had the lowest mean of 2.02 and White students had the lowest mean in the medium and high Socialization groups at 2.29 and 2.31. Students in the "other" ethnic group category had the highest mean of 2.46 among students in the high Socialization group. These results suggest the perceived level of challenge inherent in math instruction differs according to ethnic group and also by the quality of social bonds among students in these classes. More specifically, there was hardly any difference in the engagement measure across levels of Socialization among white students. However, among students experiencing mid-level to strong social bonds, White students were less engaged in math instruction than the other two ethnic groups.

Table 16.

*Means and Standard Errors for Interaction of Socialization and Ethnic Group on General engagement*

| Ethnic Group | Socialization | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Low Behavior | | | Medium Behavior | | | High Behavior | | |
| | n | Mean | SE | n | Mean | SE | n | Mean | SE |
| White | 79 | 2.30 | .067 | 72 | 2.29 | .073 | 155 | 2.31 | .047 |
| African American | 184 | 2.35 | .046 | 162 | 2.51 | .042 | 257 | 2.43 | .041 |
| Other | 55 | 2.02 | .079 | 43 | 2.45 | .085 | 89 | 2.46 | .065 |

n=1096

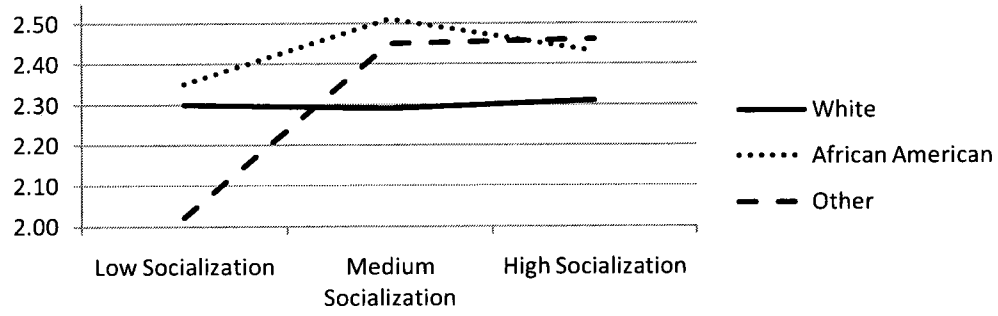


*Figure 3.* Interaction for Socialization and Ethnicity on General engagement.

**Observation Findings**

Four researchers completed a total of 79 observations in the four participating high schools. The observation instrument was composed of Likert-type items assessing the application of target behaviors illustrating each of the constructs at focus in the research questions. A rating of zero indicated the target behavior related to either Academic Press, Social Support for Learning or Academic Engagement was *Not Observed*, a rating of one indicated a *Limited Application*, while a rating of four indicated a *Strong Application.* It also included space for observers to record open-ended

comments for each behavior observed. Results are presented for each scale and include descriptive statistics from the quantitative data as well as qualitative analysis identifying emergent themes and using illustrative quotes from the open-ended field notes. Additionally, observation data was used to conduct a regression analysis examining the extent to which Academic Press, Social Support for Learning predicted Academic Engagement measures. The results of that analysis are reported at the end of this section.

**Academic Press.** Table 17 describes the percentage by response category for each item making up the Academic Press scale. As is evident in Table 17, observations were positively skewed with a substantial proportion of responses indicating that behaviors were not observed. When instructional practices reflecting Academic Press were observed, the item examining the level of rigor promoted by classroom instruction was recorded most frequently in the *Somewhat Strong* and *Strong Applications* response categories.

However, framing these behaviors as observed or unobserved is misleading because of how the items were named and scaled. The observation scale was anchored on a continuum with low scores reflecting negative or superficial instances of behaviors not associated with Academic Press. For example, the descriptors for the two ends of the continuum for the rigor item ranged from (1) *Rote memorization or repetition of factual knowledge* to (4) *Develops or uses higher order thinking skills/habits of mind (perspective, evidence, relevance, connection, prediction)*. To score as Observed, students would have to engage in some learning activity, and one would expect that some activity around academic content would be taking place. Indeed in nearly 90 percent of the observations students demonstrated behaviors described on the rigor scale.

Therefore, to gain a more cogent understanding of the levels of each behavior observed, an examination of mean values on each item is appropriate.

Table 17.

*Percentage by response category for Academic Press scale*

| | *Not Observed* | *Limited Application* | *Somewhat Limited Application* | *Somewhat Strong Application* | *Strong Application* |
|---|---|---|---|---|---|
| Independent Inquiry/Research | 54.4% | 16.5% | 13.9% | 7.6% | 7.6% |
| Project Based Learning | 63.3% | 6.3% | 15.2% | 3.8% | 11.4% |
| Rigor | 10.1% | 25.3% | 29.1% | 21.5% | 13.9% |
| Study/Note Taking Skills | 30.4% | 22.8% | 22.8% | 20.3% | 3.8% |
| Metacognition | 30.4% | 24.1% | 21.5% | 16.5% | 7.6% |
| Assessment | 62.0% | 20.3% | 8.9% | 7.6% | 1.3% |

n=474

Table 18 illustrates descriptive statistics for the items making up the scale. It should be noted that these statistics were computed using only observed behaviors and thus the sample size for each item varies greatly. The application of Academic Press in observed classes was moderate with the total scale indicating a mean rating of 2.11 and a standard deviation of .86 suggesting some spread among observers' ratings. Among these items, classroom rigor had the highest mean, 2.27. However, a standard deviation of 1.04 suggests considerable variation among responses for this item. As noted earlier, a strong application indicated that higher-order thinking skills were demonstrated while a limited application signifies rote memorization or repetition of factual knowledge. The Assessment item had the lowest mean of 1.73 among the items on the scale, with high ratings representing innovative assessments requiring synthesis, evaluation and transfer

using a variety of methods and low ratings denoting the use of traditional assessments requiring recall of factual knowledge.

Table 18.

*Descriptive Statistics for the Academic Press scale (excludes Not Observed category)*

| | *n* | *Mean* | *SD* |
|---|---|---|---|
| Item 7: Independent Inquiry/Research | 36 | 2.14 | 1.01 |
| Item 8: Project Based Learning | 29 | 2.15 | 1.12 |
| Item 11: Rigor | 71 | 2.27 | 1.04 |
| Item 12: Study/Note Taking Skills | 55 | 2.07 | .92 |
| Item 13: Metacognition | 55 | 2.11 | 1.01 |
| Item 16: Assessment | 30 | 1.73 | .91 |
| Total Scale | 276 | 2.11 | .86 |

These findings are somewhat surprising given the paradigm of high stakes testing pervasive in the school district under study. Indeed, the field notes accompanying the observations include scant mention of any systematic press toward high academic achievement as described in the items making up the measure. Out of 79 classes observed, there were only 24 examples of Academic Press coded from observers' field notes.

In observers' field notes there was frequent mention of individual teacher efforts to press students academically. These efforts manifested as reminders for students to study for upcoming tests or as admonitions after poor test performance. For example, as students completed practice items in preparation for a test, their teacher warned them that

scores on the last test were low, but that their class averages would improve if students did well on the upcoming tests. In addition to the objectives for the lesson, the teacher had posted on the board, "What do we need to know for the district test?" The majority of instances categorized as Academic Press likewise focused on test performance. Furthermore, many of the examples of press evident in field notes referenced the state end of course test and featured activities attempting to mimic those assessments.

Teacher disappointment in students' test performance was also a recurring theme in the observers' field notes. The reader is reminded that the majority of assessments observed were characterized as low level emphasizing the recall of factual knowledge. While returning recently completed tests to students, one teacher expressed her disappointment in her students' scores and encouraged them to stay after school to "redo test questions for a better grade." Other examples of Academic Press evident in observers' field notes included teachers announcing to students comparisons of test performance across their classes, sarcastic adulation for mediocre performance, and prompting students to reflect upon the reasons for their test performance.

**Social Support for Learning.** The observation data indicated mixed results describing social behaviors that support learning. The scale includes items measuring rapport among students and among students and teachers as well as instruction involving students in social situations explicitly centered on academic content. Table 19 presents the percentage of behaviors observed by response category for each item. It is clear that social behavior channeled toward academic content skewed toward the *Not Observed* to *Limited Application* response categories, while behaviors fostering rapport among students and among students and teachers was observed in *Somewhat Strong* and *Strong*

*Application* response categories. When social behavior aimed explicitly at academic content was observed it was fairly evenly distributed across response categories. Items aimed solely at strengthening social bonds among students and students and teachers devoid of any academic contexts were substantially skewed toward the *Somewhat Strong* and *Strong Application* response categories.

Table 19

*Percentage by response category for Social Support for Learning scale*

| | *Not Observed* | *Limited Application* | *Somewhat Limited Application* | *Somewhat Strong Application* | *Strong Application* |
|---|---|---|---|---|---|
| Cooperative/ Collaborative Learning | 44.3% | 15.2% | 20.3% | 6.3% | 13.9% |
| Student Discussion | 38.0% | 16.5% | 17.7% | 12.7% | 15.2% |
| Student-Teacher Rapport | 3.8% | 2.5% | 19.0% | 38.0% | 36.7% |
| Student-Student Rapport | 8.9% | 5.1% | 20.3% | 29.1% | 36.7% |

n= 316

The descriptive statistics for the items in the Social Support for Learning scale in Table 20 further illustrate the distinction between social behavior aimed solely at promoting strong relationships and social behavior for a specific academic purpose. Two items examined academically focused social behavior, collaborative learning situations and student discussion. Collaborative learning situations returned the lowest mean at 1.39. Its scope describes *Limited Application* as limited student interactions and independent work and *Strong Application* as small group activity requiring critical thinking and mutual support and articulation of ideas. Student discussions ranging on the low end from discourse primarily involving factual information up through students

building upon each others' complex ideas were also observed in primarily limited applications with a mean of 1.51. However, the items describing behaviors aimed only at promoting strong relationships were observed in stronger applications. The item that described student-teacher rapport indicated a *Somewhat Strong Application* of 3.01. Its scale ranged from *Limited Application,* superficial and limited interactions with little evidence of personal knowledge to *Strong Application,* frequent interactions among students and teachers that reflect personal knowledge;. The item looking at relationships among students was also *Somewhat Strong* with a mean of 2.80. Its range included limited or negative interactions and a reluctance to take social risks up through frequent interactions among students that reflect trust collaboration and a willingness to take risks.

Table 20

*Descriptive Statistics for the Social Support Scale (excludes Not Observed category)*

| | *n* | *Mean* | *SD* |
|---|---|---|---|
| Cooperative/ Collaborative Learning | 79 | 1.30 | 1.44 |
| Student Discussion | 79 | 1.51 | 1.48 |
| Student-Teacher Rapport | 79 | 3.01 | 1.01 |
| Student-Student Rapport | 79 | 2.80 | 1.24 |
| Total | 395 | 2.15 | 1.08 |

Observers' field notes also reflect the dichotomy described earlier. The field notes describe 41 anecdotes coded as examples social situations among students and teachers. Of those anecdotes, there were many examples of classroom Personalism, a

variant of student-teacher rapport, which describes teachers connecting with students on a personal level by sharing information about their personal lives and seeking to draw parallels between their lives and those of their students. Field notes frequently mentioned teachers' offers to stay after school for extra help and weaving personal details about themselves as well as personal information about their students into classroom discussions. For example, while handing out paper for an activity one teacher talked about her son that was enrolled in an elementary school in a neighboring city. She parlayed that story into a conversation about the high school basketball team demonstrating knowledge of the team's season and its players. Another teacher fielded questions from her students about her childhood. One student asked her, "You were a crazy child, right?" The teacher replied, "no, I was shy." Teachers also often provided affirmation and support to students. While jumping from student to student monitoring progress, one teacher told his student, "I can tell you're going to get a good grade. You're working hard." There was mention of a few disturbing instances where teachers were not supportive. When a student mispronounced "Europe," his teacher laughed. This same teacher commanded another student to, "stop interrupting, you don't even know what manners are."

Constructive socialization that illustrated students treating each other with respect, working well together and discouraging class disruptions was also evident in field notes. Observers noted a handful of instances of positive interactions among students. As one student recited a poem she had written about her experiences with HIV AIDS, students hushed each other and all commented on how moving it was. One student stood up and applauded. In a math class, as one student attempted to solve a problem in front of the

class, the rest of the class chanted, "Ok, uh huh," reminding the observer of affirmation and encouragements seen in a church service.

Behaviors promoting strong social bonds among students were also apparent in field notes, however there was no mention of any systematic initiative on the part of the SLCs to organize support among students in academic contexts. While there was mention of students grouped collaboratively to work on instructional activities, observers commented on how despite the group structure, students worked separately. For example, one observer noted "even when sitting together students worked mostly independently, there was friendly chatting but not heavily focused on content."

**Academic Engagement.** Table 21 illustrates percentages of observations by response category for the items making up the Academic Engagement scale. Items associated with cognitively challenging instruction, what Nystrand and Gamoran (1991) referred to as substantive engagement were most often either not observed or predominated in the *Limited Application* or *Somewhat Limited Application* response categories. However, there are differences in the distribution of the items examining higher order questioning strategies and higher order feedback. *Somewhat Limited Applications* and *Somewhat Strong Applications* of higher order feedback were observed much more often than higher order questioning strategies.

Table 21.

*Percentage by response category for Academic Engagement scale*

| | *Not Observed* | *Limited Application* | *Somewhat Limited Application* | *Somewhat Strong Application* | *Strong Application* |
|---|---|---|---|---|---|
| Teacher-Centered Direct Instruction | 10.1% | 25.3% | 31.6% | 25.3% | 7.6% |
| Independent Seat Work | 12.7% | 19.0% | 29.1% | 25.3% | 13.9% |

| | *Not Observed* | *Limited Application* | *Somewhat Limited Application* | *Somewhat Strong Application* | *Strong Application* |
|---|---|---|---|---|---|
| Authenticity | 11.4% | 29.1% | 25.3% | 19.0% | 15.2% |
| Authenticity of Student Products | 15.2% | 48.1% | 13.9% | 15.2% | 7.6% |
| Student Presentation of Knowledge | 24.1% | 35.4% | 20.3% | 10.1% | 10.1% |
| Higher Order Feedback | 20.3% | 15.2% | 29.1% | 27.8% | 7.6% |
| Higher-Level Questioning Strategies | 22.8% | 32.9% | 21.5% | 13.9% | 8.9% |
| Classroom Management | 3.8% | 1.3% | 21.5% | 34.2% | 39.2% |

n=553

Items reflecting more surface level "on task" engagement such as classroom management prevail in the *Strong Application* and *Somewhat Strong Application* response categories. A distinction is also evident in Table 22 including descriptive statistics (excluding the not observed category) for each item making up the Academic Engagement scale. The mean for the classroom management and independent seat work scales are the largest among all items at 3.04 and 2.09 respectively. Classroom management is defined at the *Limited Application* end of the continuum as a disruptive climate with little Academic Engagement and in *Strong Application* as most students academically engaged and non-disruptive. The other items making up the scale all have consistent relatively low means ranging from 1.47 (student presentation of knowledge) to 1.97, all below the midpoint for the scale. Extemporaneous student responses to questions through communication of learning through formal/informal presentations characterize the scope of the continuum for the student presentation of knowledge item.

Observers' field notes also illustrate the variation in levels and types of engagement observed and are congruent with the findings of the quantitative data in that

Classroom Management had the highest mean at 3.04 a *Somewhat Strong Application.* The field notes include several examples of procedural engagement defined by (Nystrand & Gamoran, 1991), as students abiding by classroom rules and regulations. For example, one observer noted that, "students were generally well behaved, yet not really engaged." In another class, students were quiet and paying attention, but the observer noted that a few students were "languishing in boredom with their eyes closed." During a world history class, students identified the people of the middle ages by copying a chart from an overhead projector. The observer noted that the teacher presented factual information and did not make an effort to draw comparisons to current events or the lives of students.

Table 22

*Descriptive Statistics for the Academic Engagement (excludes Not Observed category)*

| | *n* | *Mean* | *SD* |
|---|---|---|---|
| Teacher-Centered Direct Instruction | 79 | 1.95 | 1.11 |
| Independent Seat Work | 79 | 2.09 | 1.23 |
| Authenticity | 79 | 1.97 | 1.25 |
| Authenticity of Student Products | 79 | 1.52 | 1.15 |
| Student Presentation of Knowledge | 79 | 1.47 | 1.25 |
| Higher Order Feedback | 79 | 1.87 | 1.24 |
| Higher-Level Questioning Strategies | 79 | 1.53 | 1.24 |
| Classroom Management | 79 | 3.04 | 1.01 |
| Total Scale | 76 | 2.31 | .65 |

n=76

Overt disengagement stemming from low-level inauthentic instruction was also frequently identified in the field notes. In one classroom, as a teacher's aide read to the students from a slide show presentation, two students read novels, and others chatted quietly. Another observation described a class where students "rolled their heads and groaned" as the teacher handed out worksheets. The field notes also described missed opportunities to connect academic content to current events. In a math class, when students asked why they needed to know how to graph the slope of lines, the teacher said that students "need to know lots of things in graphs, just look in the newspaper," no follow up discussion was attempted and students "continued chatting but were not rowdy."

Observers did note a few examples of students engaged in class discussions aimed at establishing connections with topics relevant to students' lives that may also elicit higher order thinking skills. In a government class, students tied anarchy to punk rock music when asked to connect forms of government with music genres. During the discussion, the teacher expanded on students' responses and asked follow-up questions. Another observer described an English teacher that used current television shows to exemplify character archetypes. She asked questions requiring critical analysis of the story her students had just read and followed-up with questions prompting deeper examination. For example, the teacher asked "what do you notice that is different about this plot compared to the plots of other stories we've been reading?" The observer noted that the class was "attentive and engaged almost all hour."

**Academic Press and Social Support as Predictors of Academic Engagement.**

Multiple linear regression analysis was performed to evaluate how well observed levels

of Academic Press and Social Support for Learning predicted observed levels of Academic Engagement. The predictor variables were the mean scale scores for observed levels of *Academic Press* and *Social Support*. The criterion variable was the mean scale score for observed levels of *Academic Engagement*.

Diagnostic examination of the criterion and predictor variables indicated that all three variables were normally distributed and linear. An examination of Mahalonobis distances did not turn up any values that exceeded the Chi-square ($\kappa^2$) critical value 13.82 derived from a standard $\kappa^2$ table. Thus, no transformations nor substitutes for outlier data were made. A check for multicollinearity was completed by examining the tolerance indices. Tolerance values were well above the .01 standard, indicating acceptable levels of inter-correlation among predictor variables. The linear combination of *Academic Press* and *Social Support for Learning* was significantly related to *Academic Engagement*, $F(1, 71) = 191.50$, $p<.01$. The multiple correlation coefficient of .72 indicated that approximately 72% of the variance of the Academic Engagement scale could be accounted for by the Academic Press and Social Support for Learning scales. Table 23 illustrates the Beta coefficient for the model that includes the *Social Support* and *Academic Press* predictors.

Table 23

*Summary of Regression Analyses for Predicting Academic Engagement (n = 225)*

| | Academic Engagement | | |
|---|---|---|---|
| Variable | *B* | *SE B* | *B* |
| Academic Press | 0.65 | 0.07 | -0.85** |
| Social Support | - 0.002 | 0.80 | 0.022 |

$^{**}p < .01$.

The beta coefficients associated with *Academic Press* and Social Support for Learning were .652 and -0.02 respectively. The t-test for this model indicates that only *Academic Press* was a significant predictor for this model, the t-value for *Academic Press* = 9.122, $p<.001$. An analysis of the partial correlation statistic indicates that *Academic Press* accounted for 54% (.737=.543) of the variance in the model. Thus this predictor makes up for 54% of the 72% accounted for in the linear combination of predictors.

## Focus Group Findings

Data for this analysis was derived from five focus group questions that were part of the larger SLC program evaluation. However, responses from other questions that might have elicited relevant responses were also analyzed. Interview transcripts from six interviews at four schools were analyzed to identify emergent themes that occurred most frequently across schools. First, all of the transcripts were read carefully noting ideas and topics relevant to the three constructs at focus in the research questions. From these initial concepts, categories were identified into which interview data was coded during subsequent readings. Patterns within categories were then identified. Verbatim quotes were utilized to illustrate responses by category and enhance credibility of findings.

Generally, emergent themes were consistent across schools. The emergent themes described in this section are derived from the constructs in the research questions: Academic Engagement, Academic Press and Social Support for Learning. Table 24 includes each theme and its subthemes.

Table 24.

*Focus Group Themes and Subthemes.*

| Theme | Subtheme |
|---|---|
| Academic Press | Teacher Instigated Motivation<br>Community Directed Motivation |
| Social Support for Learning | Student-teacher relationships<br>Student-student rapport and accountability |
| Academic Engagement | Disengagement<br>Engagement as a function of curriculum<br>Engagement as a function of relationships |

**Academic Press**

This category focuses on efforts to push students to perform at higher academic levels. While teacher comments related to the subthemes may have been in response to other questions, the specific interview questions addressing these subthemes were:

- How do you encourage your students to put forth their best efforts?
- How do you provide this encouragement?
- How do you communicate encouragement?

Student motivation emerged as the central theme from participants' responses. The vast majority of participants described individual efforts to motivate students toward higher levels of academic achievement. These efforts were generally either instigated by individual teachers' efforts or were the result of the collective efforts of teachers in the SLC.

**Teacher Instigated Motivation.** Teachers described several strategies they employed to compel particular student behaviors, as one teacher remarked, "throw everything at them...every student has a different motivation threshold." Participants reported using

personal encouragement, tokens such as candy and even ridicule to coerce increased student achievement. For example, "I compare them to other schools' students and that fires them up. We try to motivate them about academics." Leveraging the power of their relationships with students also emerged as an arrow in the motivation quiver. Teachers often described students putting forth effort simply to receive adulation from their teachers. For example, "I had one boy who made me post a 70 on the wall because he was so proud of it...I probably heard every single SOL score from every child."

Other strategies attempted to foster a goal orientation among students. Teachers helped students set realistic goals requiring academic success to motivate them to work and study hard. "Ms. Smith used the phrase of 'College Going Culture' honing in on kids' goals and use those goals as motivators-relating kids choices to their futures really gets them excited."

**Community Directed Motivation.** While most efforts to press students academically were the result of individual teacher efforts, there were some responses indicating a systematic SLC-wide effort to motivate students toward academic success. A common strategy described was to hold student conferences involving SLC teachers and individual students. In conferences students would be recognized for positive behaviors and admonished for bad behaviors. As one teacher commented, "we encourage a lot in conferences when we pull them in here."

Additionally participants mentioned utilizing recognition programs rewarding academic success such as meals and parties as rewards for good behavior and breakfast with the principal for honor roll recipients. One teacher described the objective behind these recognition strategies, "They don't know we're giving them parties. We surprise

them and that motivates students. Even a piece of chicken. But I try to show them that they are capable."

**Social Support for Learning**

This category refers to the extent to which social supports were developed among students and between students and staff within the SLC. It also refers to the specific attributes of the learning environment such as student-teacher rapport, personalism and teacher collaboration. The specific interview question addressing social supports for learning:

- Looking back to before smaller learning communities were implemented, how do your relationships with students differ now versus before implementation?

**Student-Teacher Relationships.** Most of the focus group participants agreed that SLCs promote potent relationships among students and teachers. The power of these relationships is summarized by the following participant's comment, "They see teachers as people who aren't out to get them, but more as people who are warm and nurturing."

While the majority of teachers agreed that enhanced social relationships the SLCs facilitate are beneficial, a minority of teachers described some drawbacks to the social bonds established with their students. Some teachers suggested that students can become too familiar and the traditional lines between student and teacher become blurred. As one teacher explained, "I taught them again in $11^{th}$ grade and they made my life miserable. I had more trouble with those kids than those who didn't know me." Concern over teacher burnout as the result of the intense effort required to maintain social bonds also emerged as an issue. "As much as I love doing this, I feel strongly that there needs to be some sort

of sabbatical for those who do this for long periods because [these] kids are so needy that you pour everything into them."

However, the vast majority of responses viewed SLCs as central contributor to enhanced rapport with their students. Due to the sense of community created within an SLC, teachers believe they know their students better and are therefore more responsive to the individual warning signs students display when they may be at-risk. Similar to other participants, one teacher said, "it's like you belong to them. And they know they can go to you and express their feelings. You get to know them, their fears as well ...it's very important that they feel like they belong."

The personal relationships established within SLCs also empowered teachers with regard to maintaining classroom discipline. For example, "it [relationship] allows me to take control of situations and make it positive for students." Another teacher elaborated on this point, "I have some kids that are wild and because of that relationship, I can just give them a look. I just don't have to deal with certain issues."

Teachers also credited the relationships they've developed with the other teachers in the SLC cohort as a means for increasing the strength of social bonds with their students. One teacher compared her work with troubled students to before the SLC initiative, " before it was difficult to track down students' other teachers to discuss common problems. SLCs allow me to work with other teachers on a common student and address their problems as a group." The idea of presenting a "common front" of teachers to students and parents was often cited as beneficial. Teachers also mentioned the benefit of leveraging other teachers' knowledge and relationships with students to address issues with students and parents. For example, one teacher commented, "its nice

to know who has certain kids. That's really nice to know we can just go next door and talk about a specific students' situation." In another school, teachers described the agility to redistribute resources the SLC structure provided. "If she (teacher) has 20 kids not doing well, we take the other kids and let her work with the 20. It impresses upon the kids that we need to do better and get out of 9th grade. We have the ability to switch kids and that's been good."

**Student-Student Rapport and accountability.** Teachers often described their SLC as a family or team where students look out for each other. Participants' comments revealed a sense of responsibility for one another among SLC students, "it helps to have all the same classmates from class to class. Almost all of them have all the same students, and I think they are now accountable to one another. Everyone knows who you are."

The sense of community that exists among SLC students was also at least partly attributed to the development of service learning activities. The importance of service learning activities toward fostering positive social bonds among students was exemplified when a teacher said, "building trust at the beginning allows for self-policing, more respect, etc. Students can calm each other down. The trust thing came in really late this year because spirit of service days started so late." However, other teachers commented that not everyone recognized the benefits of the community service activities. One teacher described push back from one of her parents, "[a parent] said something about it as if it isn't a good thing and maybe more like a punishment." Another teacher echoed this notion, "students complain that community service is punishment." When asked directly about the perception of community service as punishment the majority of

responses are summed up by the following teacher's comment, "Most don't see it as a punishment. They feel good that they're getting out of school. They also seem to like the idea that someone appreciated the power that they put behind doing something."

Teachers also indicated that SLC classes with students in different grade levels presented a challenge to establishing rapport and maintaining order. These issues were most prevalent in math and science classes, where the variety in course offerings made it difficult to maintain pure SLC classes. For example, several participants credited the inclusion of ninth grade repeaters in smaller learning communities with adversely affecting the SLC. Ninth grade repeaters were cited as a reason for large class sizes and teachers identified these students as the largest threat to maintaining order in class. "I hope we can find some alternatives for students that don't want to be here. They have to have attention and be disruptive...the same kids come to you again and again."

**Academic Engagement**

This category focused on students' interest and focus in class as well as the characteristics of what teachers perceive to be engaging instruction. While teacher comments related to these subthemes (see Table VII) may have been in response to other questions, the specific interview questions addressing these subthemes were:

- How do you make instruction relevant to students' lives?
- When do students engage in in-depth discussions involving HOTs?
- How would you describe your students' academic enthusiasm and focus in class?
- To what extent are they engaged with the class activities (i.e. time on task, interest, challenge)?

**Disengagement.** Participants generally described their students as unfocused, disengaged and not prepared for the more rigorous curriculum in high school. When asked about his students' academic enthusiasm one teacher replied, "on a scale of 1 to 10, a zero. It's very hard to motivate them." Another lamented that as first-time ninth graders, "they don't always come to us with the skills and abilities needed. They're less focused." He continued, "I've been wondering whether or not there is a harder push to get them out of middle school than usual. There are fewer and fewer kids ready or that can even read on a 5th grade level."

The central reasons teachers cited explaining student disengagement included large class sizes and lack of time to address content in-depth due to pressure regarding state end of course tests. One participant complained, "there often is not deep thought…I don't know if they even think in a day at all. Sometimes I just tell them you just want to get information to pass a test. You don't really know anything." When asked how she relates instruction to students' lives a teacher responded, "we haven't done anything like that this year. They've been just strictly following the SOL guidelines."

Class size also emerged among teachers as an obstacle to promoting engaging instruction. While describing difficulties initiating class discussions, one teacher explained, "its hard to get a good discussion going with 35 kids. They can't get settled down enough to have debate or discussions."

**Engagement as a function of curriculum.** Relevancy emerged as the dominant theme among descriptions of engaging instruction. Teachers most often described engaging instruction as involving class activities related to issues of direct relevance to students' personal experiences or that made connections to current events that were more abstractly

relevant to students' lives or futures. Flexibility to differentiate the curriculum also surfaced as a key factor in delivering engaging instruction. When asked about their students' academic enthusiasm and focus in class, English teachers among all other participants, most often described their students as alert and engaged in class activities through reading selections or writing assignments. One teacher described herself as "fortunate enough to have the freedom to write the SLC curriculum." Some participants credited interdisciplinary collaboration as a factor in student engagement. For example, "The first year the history teacher and leadership teacher and I would coordinate lessons. We all had the same students. Even in the second year. That was really effective. We did something in poetry with Napoleon's conquest. We discussed direct illusion. That was perfect."

Descriptions of engaging classes addressed course standards, but were tailored to contexts more authentic to students' lives. In one English class students discussed rap artist Tupac Shakur's, *The Rose*. The teacher explained "its poetry that is simple enough, speaks to where they are...is very metaphorical, plus I get street cred." The teacher explained that such activities help kids to "immediately see that this class is applicable...that the things you learn in this class you can take back home." Other English teachers described class discussions that focus on provocative issues related to course literature selections. For example, "statements about life and the world that are related to the literature makes them more connected...they can see the connection to their opinion and their world in the literature." Another teacher described discussions inspired by the novel *Monster* about life in prison, "countless students talked about a sibling in prison, the kids did a lot of predicting...they used their own life experience."

Teachers also mentioned using current events to establish more abstract connections between the curriculum and students' personal experiences. In one English class, students wrote letters to war veterans during the holidays and also wrote letters to the governor regarding budget cuts. The teacher explained, when they "were able to discuss how the (budget) cuts will affect them, they were very much engaged and took the assignment seriously."

Teachers in English, social studies and freshmen leadership/AVID classes all described engaging class discussions regarding topics of direct significance to students' lives. For example, "in freshman leadership class or AVID, we do a lot of discussion around different things we're reading. We talk about dropping out and why they shouldn't...that doesn't come from the curriculum." Other freshman leadership classes described engaging classes focusing on interpersonal skills, public speaking skills, developing empathy for others, and dealing with peer pressure. As one teacher put it, "it's nice for students to see applicability to their lives. At first the students didn't realize this class was important at all, but now all they can say is why people need to take this class."

While engaging instruction establishing explicit connections to students' lives was often described in classes with content standards focused on skills directly relevant to students' experiences such as English or freshmen leadership, science and math teachers reported having more difficulty making such connections. One teacher asked her students if they had ever hula-hooped to introduce a lesson about circles, but she complained, "sometimes the conversations can go too long and get away from the curriculum." In a science class, students' frustration with scientific literacy provided a

significant connection. The teacher explained, "students make predictions and it doesn't work out and their hypothesis isn't supported and kids get upset and the fact that science is based on learning through mistakes generates lots of discussion."

Engagement in math and science classes was often described as a function of student motivation dependent upon the topics covered during class. One science teacher described her students' academic enthusiasm as "high and low based on the topic." She further elaborated, "science has some things that aren't that interesting...students want to do things that are hands on, they want to cut things up (dissections)." In an AP calculus class the teacher, "can tell them to do anything and they do it, because they are self motivated. In freshman classes, we have so much expectations on us that we need to be paid more."

**Engagement as a function of social relationships.** A small minority of participants indicated student engagement in their classes was the result of the relationships developed among themselves and their students. In explaining why students feel free to participate in in-depth discussions, one participant explained, "the kids go to all other classes together and know each other very well...kids feel their not talking in front of strangers." Additionally, student interest was described as influenced by other students, "they have their good days and bad days and feed off each others' enthusiasm." Students' fear of disappointing their teachers was also cited as encouraging student engagement. For example, "if you have a good rapport, they'll work with you," and "they (students) say they like my class. They know we care and that affects their self esteem and they want to try."

## Summary

In summary, the questionnaire results imply that in general students that perceive high levels of the independent variables at focus (i.e. Academic Press, Personalism and Socialization) also experience higher levels of Academic Engagement. However, Socialization did not indicate a main effect for the Quality English Instruction dependent variable.

Additionally, the interaction effects of Academic Press and ethnic group, Academic Press and gender, and Socialization and ethnic group indicated mixed results in terms of their relationships with the engagement dependent variables. For example, African Americans that experienced high levels of Academic Press reported being engaged in cognitively challenging math instruction, but these findings did not hold for white or "other" students nor were there any significant effects for the general engagement measure or the Quality English Instruction measure. Similarly, when pressed by teachers, males were generally more engaged, in terms of interest and effort expended than females. The trend of mixed results was also apparent for the effect of Socialization and ethnic group on general engagement. For white and African American students, the general engagement mean was actually higher those students experiencing moderate social bonds among students than for those experiencing strong social bonds in the high Socialization group. Only "other" students indicated a consistent albeit marginal increase in general engagement as the quality of social bonds among students increased.

The qualitative and quantitative observation data indicated limited applications of Academic Press, Social Support for Learning and Academic Engagement among the classes observed. Academic Engagement received the highest mean rating at 2.31 while

Academic Press and Social Support for Learning barely rose above the midpoint on the rating scale. Observers' field notes support the analysis of descriptive statistics, however distinctions regarding the nuances within the Social Support for Learning and Academic Engagement constructs emerged. The type and purpose of social activity made a substantial difference in their level of application. Those social activities and behaviors that had explicit academic purposes were observed in weaker applications than those activities and behaviors aimed solely at strengthening relationships among students and between teachers and students. Behaviors reflecting strong relationships between teachers and students were applied most strongly. Findings related to Academic Engagement also showed mixed results. Observers noted strong applications of "on-task" type engagement, however only low to moderate applications of engagement characterized by cognitively challenging instruction were observed and noted in the observers' field notes. Regression analysis of the observation data indicated that Academic Press is strongly and significantly related to Academic Engagement, however Social Support for Learning was not.

Data from the focus group analysis largely echoed the findings of the observation data. That is, Academic Press and Engagement are not present to a large degree within SLC classrooms, but Social Support, particularly as a result of individual teachers' efforts, was fairly common. The analysis yielded several subthemes related to the central themes (i.e., Academic Press, Social Support for Learning and Academic Engagement). Motivation either instigated by teachers or directed by SLCs was central to Academic Press. Student-teacher relationships and rapport among students were the central subthemes surrounding Social Support for Learning. Several subthemes emerged around

Academic Engagement, including disengagement and engagement as function of the curriculum and as a function of social relationships.

# CHAPTER V: DISCUSSION

The literature on smaller learning communities suggests that SLCs are designed to promote increased learning through an emphasis on Academic Press while providing solid social supports that help students deal with the heightened expectations. The purpose of this study was to examine the impact of smaller learning communities on measures of Academic Press, Social Support for Learning and Acadesmic Engagement, to identify relationships among these outcome measures and to determine whether ethnicity or gender affect these relationships.

This discussion first addresses the levels of Academic Press, Social Support for Learning and Academic Engagement that are evident in smaller learning community classrooms, then it examines the relationships among Academic Press and Social Support for Learning, how they impact Academic Engagement, and whether ethnicity or gender are mitigating factors in these relationships. It interprets relevant findings and describes their significance in the context of the present study and the current literature. The chapter concludes with a discussion of the study's limitations, directions for future research and practical implications of the findings from this study.

## Impact of SLCs on Academic Press, Social Support for Learning and Engagement

Descriptive statistics of each construct from the quantitative data indicated moderate levels of Academic Press, Social Support for Learning and Academic Engagement among SLC students. The means of each measure on the questionnaire were all above the midpoints of their scales indicating students in SLCs perceived moderately high levels of these constructs. Overall, SLC students felt they had strong relationships with their teachers and moderately strong relationships with each other. They reported

feeling somewhat high levels of Academic Press and means on the general engagement and engagement in cognitively challenging math and English instruction measures were all above the midpoints of each scale.

The observation data also demonstrated moderate levels of these constructs evident in SLC classrooms; however, the questionnaire data suggested higher levels of Academic Press, Social Support for Learning and Academic Engagement than did observations. Field notes from the observations suggested procedural engagement in "on-task" behaviors was often observed, but engagement in cognitively challenging instruction was not frequently observed. Additionally, student-teacher rapport was evident, but learning situated within social contexts with explicit academic purposes was rare. The analysis of the focus group data supports the more modest levels of press, social support and engagement evident in the observations. It indicated that teachers did not perceive high levels of Academic Press and engagement in their classrooms and that efforts to promote strong social ties were mainly due to their individual efforts as opposed to any systematic attempts emanating from the SLC structure.

Taken together, the findings are somewhat mixed with regard to the impact of the SLC structure on Academic Press, Social Support for Learning and Academic Engagement. While the self-report student data indicated moderate to high levels of these constructs present in SLC classrooms, the qualitative and observation data do not point to the SLC structure as a central influence on these factors. Shear et al. (2008) reported similar results. Teacher and student self-report data showed high levels of analogues to Academic Press and Social Support for Learning in SLC schools in their second year of implementation; however, document analysis of the class assignments did

not illustrate high levels of cognitively challenging work. These findings are consistent with Kahne's et al. (2008) findings that the SLC structure, "did not foster a pathway toward curricular change, instructional improvement or improved academic outcomes, (p. 297)." Kahne identified several factors that may play a role into the lack of instructional change within SLCs that may also be at work in this study. First, they suggested teachers' lack of time and training in how to work collaboratively as an obstacle to instructional improvements. Kahne's (2008) research described meetings among teachers as focusing on discipline issues, individual students' personal or academic problems or planned smaller learning community field trips or parties instead of instruction. Including analysis of test data, these were the same topics teachers participating in the present study described as the focus of their collaborative time. As was evident in the focus group data, Kahne (2008) also identified an overemphasis on test performance as key obstacles to instructional reform as a byproduct of SLC implementation. This finding is not surprising, there is much research that suggests school reform programs aimed at addressing disparities among at risk populations in achievement and other outcome measures are often stymied by the high stakes testing paradigm.

Unfortunately, the absence of baseline data from the SLC classrooms regarding these constructs makes it difficult to infer any influence from the SLC structure on the levels of the constructs at focus in this study. It is possible that the observed and self-reported levels of press, social support and engagement may not have changed as result of SLC implementation or were influenced by other factors. Without a comparison group or baseline data to contrast against, it is impossible to establish SLCs as the proximate cause for any outcomes.

**Relationships among Academic Press, Social Support for Learning and impact on Academic Engagement**

It is difficult to establish SLCs as having a central influence on the self-reported and observed levels of Academic Press, Social Support for Learning and Academic Engagement in the SLC schools at focus. However, the relationships among these constructs are similar to relationships found in the SLC literature, with some important caveats. Lee and Smith (1999) reported a strong positive relationship between Academic Press and performance on the Iowa Test of Basic Skills (ITBS) in elementary school students and a slightly weaker relationship between Social Support for Learning and test performance. Kahne (2008) reported comparable results with middle and high school students. Therefore, one might expect similar results using engagement measures as dependent variables.

The results from the MANOVA analysis of questionnaire data indicated Academic Press was a significant factor in all three engagement measures. Additionally, Scheffe's tests revealed that students reporting high levels of Academic Press reported that they were also more engaged on all three measures of engagement, than those students feeling low levels of Academic Press. Thus, the same patterns Lee & Smith (1999) and Kahne (2008) observed among Academic Press and academic achievement were also evident in the present study regarding Academic Engagement. This finding is important in that the measures of engagement used in this study examine on-task type engagement but also engagement characterized by cognitively challenging math and English instruction. Taken with the Kahne (2008) and Lee and Smith (1999) findings,

these results suggest Academic Press was a statistically significant factor in student learning, especially for minority students.

The promise of smaller learning communities is that they combine Academic Press with the context of social support necessary for traditionally at-risk students to be successful (Wasley, 2000; Cotton, 2001; Lee & Smith, 1999). To determine if SLCs can deliver on this promise, it was necessary to identify the impact of Social Support for Learning on Academic Engagement. The relationship between Social Support for Learning and Academic Engagement evident from the MANOVA was not as straightforward. While Personalism also demonstrated significant main effects on all three engagement measures, there was no main effect for Socialization on cognitively challenging English instruction. Additionally, Scheffe's tests did not establish the expected trends of relationships between levels of Personalism or Socialization groups (low, medium and high groups) and the three measures of engagement used in this study. Furthermore, there were no interaction effects observed on any combination of Academic Press, Personalism and Socialization. In addition, the regression analysis of observation data indicated a significant relationship between Academic Press and Academic Engagement, but not between Social Support for Learning and Academic Engagement. These results imply that Social Support for Learning may not be as important a factor in Academic Engagement as Academic Press.

The observation results reflect Shouse's (1996) findings that Academic Press, but not Social Support, influences achievement gains. However, they stand in contrast to Bryk, Lee & Holland (1993) results which found positive correlations with measures of Social Support for Learning and Academic Engagement and Marks et al., (1996) who

found that students in restructured schools perceived high levels of social support, Academic Press and engagement during their classes. It is also not congruent with Marks (2000) examination of high school students' self-report data that found Social Support for Learning to be positively associated with engagement characterized by cognitively challenging work. The present study's findings are also inconsistent with Lee and Smith's (1999) results that found significant but only modest positive relationships among Social Support for Learning, Academic Press and achievement. However, the authors did concede that the significant relationships they discovered were only moderate.

The differences in the nature of self-report versus observation data collection may be one reason for the disparity in the results from this study. While other studies rely exclusively on self-reports, they may over estimate the frequency or intensity of the behaviors at focus. While the small sample size of the observation data was a limitation of the regression analysis results, the measures for Academic Press and Academic Engagement examined student and teacher behaviors consistent with these constructs and the self-report data explicitly asked students whether they perceived these constructs during classes.

**Ethnicity, Gender, Academic Press, Social Support and Engagement**

The findings informing this issue come from MANOVA analysis of questionnaire data that identified a main effect for ethnicity on the General Engagement measure, interaction effects between ethnicity and Academic Press on cognitively engaging instruction in math, and interaction effects between ethnicity and Socialization on General Engagement. Also significant was the interaction effect between press and

gender. In high Academic Press classes, boys were more engaged in cognitively engaging instruction than were girls.

The results from the present study are consistent with Johnson, Crosnoe, and Elder's (2001), findings that African Americans are more likely to be engaged at school than other ethnic groups. Their research used a measure of engagement similar to the general engagement scale from the student questionnaire. Additionally, previous research identified benefits for ethnic minorities in math and social studies classes when high levels of social support were coupled with cognitively challenging instruction in math and social studies (Nystrand and Gamoran, 1991) and several other studies have identified a benefit in engagement for African Americans and other minorities associated with increases in social support (Lee and Smith, 1999; Marks, 2000; Ryan and Patrick, 2001). Shernoff & Schmidt (2008) also suggested that emotional measures of engagement are more likely higher for African American students than other measures of engagement. While the present study does not fully support these findings, it is consistent with the literature regarding the main effect of ethnicity showing African American students as the most generally engaged SLC students. Moreover, this study identified a significant, but moderate, interaction effect between Academic Press and ethnicity showing that African American students were the most engaged in cognitively challenging instruction in high Press math classes compared to white students and students classified as "other."

Although promising, these findings should be considered along with the engagement-achievement paradox that suggests African American students reported higher engagement, intrinsic motivation and affect in classrooms but lower GPAs relative

to white students (Shernoff & Schmidt, 2007). The researchers suggests several reasons for the paradox, including external attributions of poor performance to prevent self-blame and a refusal to interpret low achievement as personal failure, but places most stock in contextual and environmental factors. The authors explain there are great differences in opportunities for engagement at home and in public among children from different ethnic backgrounds. Minority children, particularly those living in poverty, are more likely to come from single-parent homes and are faced with great social hardships and chronic stress. For students facing these challenges, structured academic settings may be highly conducive to promoting engagement. Whatever the reason for this paradox, this research serves as a caveat to equating high engagement in African American students observed in this study with enhanced learning.

As mentioned earlier, a significant interaction effect was observed between Academic Press and gender showing that boys were more likely than girls to be engaged in cognitively engaging instruction in high Academic Press math classes. However, there was no main effect observed for gender on any of the three engagement measures. This finding contradicts several studies establishing that girls are consistently more engaged than boys (Finn & Cox, 1992; Lee and Smith, 1995; Marks, 2000). It is possible that boys thrive in high-pressure competitive situations, thus explaining this finding. Allison & Patrick (2001) found that boys were more likely to be succesful in classes where relative performance was empahsized and girls were more succesful in classes emphasizing social support and mutual respect. It is possible that high Academic Press classes did not provide the social supports observed in prior research as promoting engagement among girls. Of course, this finding is based on student self-report data,

which as establihsed earlier, may over emphsize the frequency or intensity of the behaviors at focus.

## Implications and Conclusions

While not the purpose of this study, the implications of high stakes testing on the implementation and sustainability of smaller learning communities and the ensuing benefits could not be ignored in addressing the research questions. Critics of high stakes accountability programs and the standardized tests on which they are based contend that they measure low-level knowledge products, driving instruction and curriculum to prepare students only for the demands of the test, and thus may have a substantial influence on the levels of engagement identified (Au, 2007; Kohn, 2007; Bol, 2004). Furthermore, Bol and Nunnery (2004) identified authentic assessments and student centered classroom orientations as among the first instructional elements that would be omitted in response to high stakes testing demands.

Additionally, Bol, Ross, Nunnery and Alberg (2002) identified pressure from high stakes accountability programs as substantial influences on the allocation of resources and instructional time in school districts with teacher accountability plans in place. Desimone's (2002) research implicates high stakes accountability systems as a barrier to the successful implementation of comprehensive school reform models. She notes teachers', principals' and district level leadership concerns regarding alignment between the goals and demands of reform programs and state assessment systems as key impediments. High stakes testing is also an issue in the sustainability of reform programs already in place. In a study using longitudinal data examining the sustainability of comprehensive school reform models, Datnow (2005) reported high stakes accountability

systems hinder long term implementation of reform efforts particularly in schools with histories of low academic performance stating that, "in schools where state accountability demands were high, reform strategies were abandoned in favor of test preparation (p. 147)".

The SLCs at focus in this study did not result in particularly high levels of Academic Press, Social Support for Learning nor any of the measures of engagement. However in those instances when Academic Press and/or Social Support for Learning were at high levels, several of the benefits of SLCs noted in the research literature emerged. These findings partially support the research literature regarding the benefits of social support and Academic Press associated with smaller learning communities, especially for minority groups. It indicates that these factors alone are significant in Academic Engagement, but did not indicate that the combination of these factors made a significant impact on perceived levels of Engagement. In these findings, Academic Press emerged as the central influence on Academic Engagement with social support, specifically student-teacher rapport also surfacing as key factor.

Given these findings and those evident in the literature, one has to question whether SLCs are the most efficient means for promoting higher academic expectations while providing social support and enhancing instruction through curriculum change and professional development for teachers. The resources allocated toward implementing and maintaining the SLC structure might be better utilized in professional development for teachers and administrators regarding methods for enhancing Academic Press and Socialization in classrooms. Thus, rather than these constructs being a byproduct of the school structure, they would be the targeted outcome.

These results also imply some useful suggestions for schools as they attempt to promote learning across all their student sub-groups. First, Academic Press should be the central emphasis of a school's culture. This study underscores the message from most of the research literature, namely that students, regardless of background characteristic, in high Press classes are more engaged. To facilitate this culture of high academic expectations, division level departments of curriculum and instruction should structure curriculum and assessment so that Press is stressed and is associated with cognitively challenging instruction. A key element of which will be to clearly differentiate Academic Press in cognitively challenging work from a zealous focus on high stakes test performance.

## Limitations

Because this study was part of a U.S. Department of Education Smaller Learning Communities grant, there were several constraints imposed by the school district on the research design and methods that limit the application of findings. As is the case with much educational research investigating educational reform efforts in real-world classrooms, this study was non-experimental, lacking control of treatment and other factors. Therefore, random assignment to groups for the various units of study (e.g. classrooms observed, teachers interviewed, groups of students surveyed) was not possible, nor was manipulation of the independent variables or control over school and classroom conditions. Thus, it is difficult to control for confounding variables or to isolate specific cause and effect relationships. These and other limitations are described in more detail below and are organized by data source.

Sampling was a major area of concern with the observation data. Observed classes were not selected randomly, but were instead organized through a purposeful sample with the aim of spreading observations across as many SLC classrooms as possible given the limited number of observers. In order to ease the anxiety of participating teachers and grant coordinators, observation schedules were published well in advance so teachers knew when their classes would be observed. Furthermore, teachers had access to the instrument and were aware of the observers' focus.

Reliability across observers and observations was another drawback. The observation instrument was developed collaboratively by the research team and was modeled after an existing observation protocol with published reliability statistics and validity documentation. Additionally, collected data from each of the scales examined indicated very strong alpha coefficients (see Table 6) and thus reliable measures. However, because of the limited time-window for observations, interrater reliability was not established among the researchers. The participating observers did develop the scale items collaboratively, discussing each item and its relationship to the scale at length which suggests a common understanding of the behaviors each observation item was designed to measure. Furthermore, observer effects may also introduce the potential for unreliable ratings within the observation data. Moreover, the measures comprising the observation instrument and the questionnaire were not perfectly consistent. The observation instrument was developed by project staff, while the questionnaire scales were taken from published literature. The constructs being measured are similar, but not identical, and thus triangulation is not as well established as it could be.

The questionnaire data also has some reliability issues. The measures making up the instrument had solid internal consistency (see Table 5 for Cronbach alpha scores), but the results from the survey administration may not be perfectly reliable. An attempt was made to survey the entire population of students under study, however no attempt was made to include those students absent the day of administration. The timing of the survey administration may also raise concern. The questionnaire was given after the end of year Standards of Learning Tests in the waning weeks of the school year. Items asking students about the levels of Academic Press they perceive or the extent to which they were engaged in instruction may have elicited different responses if posed during the testing window or while classes were preparing for testing. These issues all call into question the validity of questionnaire data on which much of the study is based. Other confounding variables that often accompany self-report methods, such as socially desirable responses to items instead of authentic responses is a concern that may be exacerbated when coming from adolescent participants.

The focus group data also poses some reliability concerns. The timing of the interviews, while organized to be as convenient as possible for participants were scheduled at the end of the school year when teachers are busy tying up loose ends before the last day of school. Participation in the focus group interviews did not always include representatives from each SLC in a building. Participants also understood that the interviews were not purely for academic purposes, but were collected as part of evaluation of the grant and that their school's progress regarding grant implementation was at least partially contingent on their responses to questions. Therefore, responses may not have been as candid as possible. Because the central purpose of the focus group

interviews were for program evaluation, the items relevant to Academic Press, Social Support for Learning and Academic Engagement, and follow-up questions were limited in scope to make room for questions about other aspects of the SLC efforts.

Overall, the non-experimental nature of the research design raises some concerns when investigating the influence of SLCs on Academic Press, Social Supports for Learning and Academic Engagement. Because there was no baseline data or control groups to compare observation, questionnaire, and interview responses against, no causal inferences could be established. Furthermore, as with most educational research, the ability to control for confounding variables was limited. For example, each school was at different levels of implementation of their SLC structure and the nature of the grant limited comparison of participating schools. Thus, this study investigated the smaller learning community reform initiative as a whole instead of examining the constructs at focus within the unique contexts of each participating high school. The fact that some schools already had programs similar to smaller learning communities in place may certainly have limited the effectiveness of the SLC structure.

## Directions for Future Research

The results and conclusions yielded from this study imply the necessity for further research on the effectiveness of smaller learning communities to significantly impact student learning. First, research should be undertaken that includes baseline data in a within-subjects design so that meaningful comparisons can be made regarding the impacts of SLCs on levels of Academic Press and Social Support for Learning. Ideally, data would be collected prior to implementation and then periodically as students matriculated through high school. Follow-up research may also be conducted in SLCs

that are fully implemented. Second, comparison groups with closely matched schools without SLCs would provide an appropriate between subjects design. Additionally, studies using other measures such as a document analysis of teachers' assignments and student work would provide valuable triangulation for observations and self-reports of Academic Press and Academic Engagement, constructs that have proven difficult to isolate in observations.

Research examining the nature of Academic Engagement and the contributions of Academic Press and Social Support for learning is also warranted. This research should be conducted in SLC contexts but also in more traditional school environments. The SLC literature asserts that when Academic Press is combined with strong social supports, students learn more and are more engaged. However, whether there is a critical proportion of Academic Press and Social Support for Learning necessary to promote learning via engagement has not been established. A between subjects design could be used to make comparisons among SLCs and other school structures with differing emphases on Academic Press and Social support to determine if particular proportions of press and social support consistently yield gains in achievement, Academic Engagement or other outcome measures associated with student learning.

Furthermore, in depth investigation into the nature of Academic Press is also warranted. According to McDill, Natriello and Pallas (1986), Academic Press is defined as the extent to which school members (teachers and students) experience a normative emphasis on academic excellence and conformity to specified academic standards. However, how academic excellence is defined is contingent on the particular standards in play. Further research should be done to tease out which contexts of Academic Press

(i.e., emphasis on increased test performance and constant practice, or enhanced rigor via instruction incorporating higher order thinking that grapples with deep problems within a discipline) result in greater or lesser impacts on student learning. The assertion that cognitively challenging instruction engages students' in deeper levels of cognitive processing should come as no surprise, however understanding the nature of that challenging instruction is somewhat unclear from the existing literature on the topic. Ethnographic research deeply examining the roles of teachers, building administrators and even central office staff have been conducted in SLC contexts, but not specifically investigating the nature of Academic Press and Social Support for Learning in successful SLCs.

As was mentioned earlier in this discussion, more research should be conducted examining the impact of high stakes testing on the benefits of SLCs. Desimone (2002) identified high stakes testing as an obstacle to the successful implementation of school reform measures and Datnow (2005) suggested it prohibits the long-term sustainability of reform programs. Further research comparing SLC initiatives with and without the pressures of high stakes testing paradigms could help determine the impact of testing on the successful implementation of SLCs. Additionally, in-depth ethnographic research with SLCs that are successful in high stakes testing environments may help identify strategies and structures that mitigate its deleterious effects.

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# Appendix A

## Survey of Norfolk Public School Students

## 9th Grade Student Edition

We want to know what YOU think!

**This is not a test.**

There are no wrong answers. We want to know what you think about your classes, homework, and clubs.

**Your answers are confidential.**

Your answers will be combined with those of other students to describe what NPS students think, do and experience.

**This survey is voluntary.**

You do not have to answer any questions that you don't want to answer, but we hope that you will answer as many questions as you can.

**Thank you for your help!**

**Your Name:** _____

**Teacher Name:** _____

**Block:** _____

**Administered by Old Dominion University. Survey developed by the Consortium on Chicago School Research.**

| **19. In your MATH class this year, how often do you do the following?** | Never | Once or Twice this Semester | Once or Twice a Month | Once or Twice a Week | Almost Every Day |
|---|---|---|---|---|---|
| Write a few sentences to explain how you solved a math problem. | Quality Math Instruction Engagement Scale | | | | |
| Explain how you solved a problem to the class. | O | O | O | O | O |
| Write a math problem for other students to solve. | O | O | O | O | O |
| Discuss possible solutions to problems with other students. | O | O | O | O | O |
| Apply math to situations in life outside of school. | O | O | O | O | O |
| Use a graphing calculator to complete an assignment. | O | O | O | O | O |
| Solve a problem with multiple steps that takes more than 20 minutes. | O | O | O | O | O |

| **20. In your ENGLISH class this year, how often do you do the following?** | Never | Once or Twice this Semester | Once or Twice a Month | Once or Twice a Week | Almost Every Day |
|---|---|---|---|---|---|
| Explain your point of view or an idea in a class discussion about something you've read. | Quality English Instruction Engagement Scale | | | | |
| Write a paper or essay of three or more pages. | O | O | O | O | O |
| Rewrite a paper or essay in response to comments. | O | O | O | O | O |
| Discuss connections between a reading and real life people or situations. | O | O | O | O | O |
| Discuss how culture, time, or place affects an author's writing. | O | O | O | O | O |
| Write a few paragraphs to answer questions about a reading. | O | O | O | O | O |
| Explain how writers use tools like symbolism and metaphor to communicate meaning. | O | O | O | O | O |

**PART 6: The questions in this section ask you about your English OR Math Classes.**

**21. Which classes do you have first on EVEN days?** O English O Math

**ANSWER QUESTIONS 22-24 ABOUT THE CLASS YOU'VE MARKED ABOVE IN 21.**

| **22. How much do you agree with the following statements about this class?** *The teacher for this class:* | Strongly Disagree | Disagree | Agree | Strongly Agree |
|---|---|---|---|---|
| Expects me to do my best all the time. | Academic Press Scale | | | |
| Expects everyone to work hard. | O | O | O | O |

| **23. In this class, how often:** | Never | Once in a While | Most of the Time | All the Time |
|---|---|---|---|---|
| Do you find the work difficult? | O | O | O | O |
| Are you challenged? | O | O | O | O |
| Does the teacher ask difficult questions on tests? | O | O | O | O |
| Does the teacher ask difficult questions in class? | O | O | O | O |
| Do you have to work hard to do well? | O | O | O | O |

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| | Strongly Disagree | Disagree | Agree | Strongly Agree |
|---|---|---|---|---|
| ***Most students in this class:*** | | | | |
| **Classroom Behavior Scale** | | | | |
| Don't really care about each other. | | | | |
| Like to put others down. | O | O | O | O |
| Help each other learn. | O | O | O | O |
| Don't get along together very well. | O | O | O | O |
| Just look out for themselves | O | O | O | O |
| Treat each other with respect. | O | O | O | O |

| **22. How much do you agree with the following statements about this class?** ***The teacher for this class:*** | Strongly Disagree | Disagree | Agree | Strongly Agree |
|---|---|---|---|---|
| **Personalism Scale** | | | | |
| Really listens to what I have to say. | O | O | O | O |
| Believes I can do well in school. | O | O | O | O |
| Is willing to give extra help on schoolwork if I need it. | O | O | O | O |
| Helps me catch up if I am behind. | O | O | O | O |
| Notices if I have trouble learning something. | O | O | O | O |

| **24. How much do you agree with the following statements about this class?** | Strongly Disagree | Disagree | Agree | Strongly Agree |
|---|---|---|---|---|
| **General Engagement Scale** | | | | |
| The topics we are studying are interesting and challenging. | | | | |
| I usually look forward to [illegible] class. | | | | |
| I work hard to do my best in this class. | O | O | O | O |
| I am usually bored in this class. | O | O | O | O |
| Sometimes I get so interested in my work I don't want to stop. | O | O | O | O |
| I often count the minutes until class ends. | O | O | O | O |
| This class really makes me think. | O | O | O | O |
| No one wastes time in this class. | O | O | O | O |

# Appendix B
## Classroom Observation Notes for Norfolk SLC Evaluation

**School:** _____ **Observer:** _____ **Observation Date:** _____ **Time In/Out:** _____ / _____

**Subject/Activity Overview:**

_____

_____

## I. Instructional Strategies

1. Teacher-Centered Direct Instruction

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Not Observed | Limited Application | Somewhat Limited Application | Somewhat Strong Application | Strong Application |
| | *Teacher acting as coach or facilitator* | | | *Lecture with minimal student input* |

2. SLC Collaboration

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Not Observed | Limited Application | Somewhat Limited Application | Somewhat Strong Application | Strong Application |
| | *Casual reference to other SLC core classes* | | | *Instruction is cross-curricular, encourages transfer of skills/content from other SLC classes* |

3R. Cooperative/Collaborative Learning

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Not Observed | Limited Application | Somewhat Limited Application | Somewhat Strong Application | Strong Application |
| | *Limited interaction generally focused on independent work involving little communication and low level thinking* | | | *Small group activity; interaction required use of critical thinking skills and mutual articulation and support of ideas.* |

4. Individual Instruction

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Not Observed | Limited Application | Somewhat Limited Application | Somewhat Strong Application | Strong Application |
| | *Encourages on-task behavior but focus on management not content* | | | *Extensive one to one interaction with individual students based in content* |

5. Independent Seat Work

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Not Observed | Limited Application | Somewhat Limited Application | Somewhat Strong Application | Strong Application |
| | *Students engaged in busy work or* | | | *Student centered activity* |

| | | | | |
|---|---|---|---|---|
| | *trivial tasks* | | | *completed individually; constructive academic exercise involving critical thinking* |

6R. Experiential Hands-on Learning

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Not Observed | Limited Application | Somewhat Limited Application | Somewhat Strong Application | Strong Application |
| | *Students activities involved limited and ineffectual use of manipulatives* | | | *Student activities involved extensive and effective use of manipulatives or hands-on experiences-engaged students in sense making* |

7R. Independent Inquiry/Research

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Not Observed | Limited Application | Somewhat Limited Application | Somewhat Strong Application | Strong Application |
| | *Student activities involved finding factual information.* | | | *Student activities involved research design, execution and interpretation of results.* |

8R. Project Based Learning

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Not Observed | Limited Application | Somewhat Limited Application | Somewhat Strong Application | Strong Application |
| | *Project activities required a low level of student engagements and mostly involved fact-based information.* | | | *Project activities were engaging, student-centered, and involved students in solving complex problems.* |

## II. Academic Press

9. Authenticity

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Not Observed | Limited Application | Somewhat Limited Application | Somewhat Strong Application | Strong Application |
| | *Abstract content disconnected from students' everyday lives* | | | *Content emanates from problems meaningful to the students* |

10. Authenticity of Student Products

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Not Observed | Limited Application | Somewhat Limited Application | Somewhat Strong Application | Strong Application |
| | *Student products disconnected from their everyday lives* | | | *Student products are personal; have value beyond school setting* |

11. Rigor

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Not Observed | Limited Application | Somewhat Limited Application | Somewhat Strong Application | Strong Application |
| | *Rote memorization or repetition of factual knowledge* | | | *Develops and uses higher order thinking skills/ habits of mind* |

| | | | | |
|---|---|---|---|---|
| | | | | *(perspective, evidence, relevance, connection, prediction)* |

12. Study/Note taking Skills

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Not Observed | Limited Application | Somewhat Limited Application | Somewhat Strong Application | Strong Application |
| | *Teacher makes minimal reference to study/note-taking skills* | | | *Teacher encourages autonomous application and development of advanced study skills and/or note-taking skills* |

13. Meta-Cognitive Skills

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Not Observed | Limited Application | Somewhat Limited Application | Somewhat Strong Application | Strong Application |
| | *Teacher makes minimal reference to the development of organizational, self-regulation/reflection/management skills* | | | *Encourages the development of organizational, self-regulation/ reflection/management skill through modeling and tasks* |

14. Student Presentation of Knowledge

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Not Observed | Limited Application | Somewhat Limited Application | Somewhat Strong Application | Strong Application |
| | *Extemporaneous student responses to teacher's questions* | | | *Students communicate learning through formal/informal presentations (class discussions-student lead presentations)* |

15R. Student Discussion

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Not Observed | Limited Application | Somewhat Limited Application | Somewhat Strong Application | Strong Application |
| | *Student discussion primarily involved factual information e.g. Discuss your summer vacation. Tell each other how the story ended.* | | | *Students responded to and built on one another's ideas: and conjecture regarding complex concepts, e.g. What do we know about planets that must be considered in launching a rocket to Mars?* |

16. Assessment

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Not Observed | Limited Application | Somewhat Limited Application | Somewhat Strong Application | Strong Application |
| | *Traditional assessment for recognition/recall of factual knowledge* | | | *Innovative assessment demanding synthesis, application, or evaluation of students using a variety of methods (exhibitions, portfolios, etc…)* |

17. Higher Order Feedback

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Not Observed | Limited Application | Somewhat Limited Application | Somewhat Strong Application | Strong Application |
| | *Superficial feedback irrelevant to content* | | | *Feedback features rich and critical information relevant to learning objectives* |

18R. Higher-Level Questioning Strategies

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Not Observed | Limited Application | Somewhat Limited Application | Somewhat Strong Application | Strong Application |
| | *Teacher questions were simplistic in nature (i.e. gives a summary of a story)* | | | *Teacher questions involved analysis or analogies representing a synthesis of concepts; teacher elicited multiple students' thoughts about the question (so as to build knowledge).* |

## III. Classroom Climate (Personalization)

19. Student-Teacher Rapport

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Not Observed | Limited Application | Somewhat Limited Application | Somewhat Strong Application | Strong Application |
| | *Superficial/limited interactions with little evidence of personal knowledge* | | | *Frequent interactions among students and teachers that reflect personal knowledge* |

20. Belongingness

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Not Observed | Limited Application | Somewhat Limited Application | Somewhat Strong Application | Strong Application |
| | *Casual references to SLCs* | | | *Identifies with SLCs through language, symbols, name or other means* |

21. Classroom Management

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Not Observed | Limited Application | Somewhat Limited Application | Somewhat Strong Application | Strong Application |
| | *Disruptive climate with little academic engagement* | | | *Most students are academically engaged and non-disruptive* |

22. Student-Student Rapport

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Not Observed | Limited Application | Somewhat Limited Application | Somewhat Strong Application | Strong Application |
| | *Limited or negative interaction among students; reluctance to take social risks* | | | *Frequent interactions among students that reflect trust, collaboration and willingness to take risks* |

Appendix C

## Teacher Focus Group
## Smaller Learning Communities

Thank you for participating in this focus group. We randomly selected two communities from each high school to talk with. In the next hour or so I am going to ask you questions about your experiences with smaller learning communities. Feel free to chime in whenever you want with your opinions and comments. Occasionally I may ask you to clarify your comments. But, what we are shooting for is an open conversation about smaller learning communities – with both positive and negative comments. Your comments are confidential. We are looking for themes that bubble up across all the focus groups. No names or identifying remarks will appear in any document or report.

Does anyone have any questions before we start?

1. How have smaller learning communities affected how you do your job?
   a. Planning/Collaboration
   b. Student contact
   c. Parent contact

2. What do you *like* about working together as a community of teachers?

3. What do you *dislike* about working together as a community of teachers?

4. What could make your collaboration as a group stronger?

5. What kinds of decisions – either individually or as a group – do you have the authority to make about discipline?

   a. What kinds of decisions can you make about budget?
   b. What kinds of decisions can you make about the Leadership/Scholars course?

6. Tell me about your efforts to do community service with your students – what did and did not work?
   a. How would you modify community service for next year?

7. Looking back to before smaller learning communities were implemented, how do your relationships with students differ now versus before implementation?

8. Have your relationships with parents changed due to smaller learning communities? How so?

9. How has your relationship with teaching and the school developed over the

past year?

a. Thinking of leaving
b. Stronger – want to stay
c. Go to school events to see students?

10. **How do you relate instruction to situations relevant to students' lives?**
    a. **What are some examples?**

11. **Describe times during your classes when most students engage in in-depth discussions about complex problems?**
    a. **How often do these discussions occur?**
    b. **In what context do they typically occur (e.g., in conjunction with written assignments)?**

12. **How do you encourage your students to put forth their best efforts?**
    a. **How do you provide this encouragement?**
    b. **How do you communicate this encouragement**?

13. **How would you describe your students' academic enthusiasm and focus in class?**
    a. **To what extent are they engaged with the class activities (ie time on task, interest, challenge)**

14. If you were in charge, how would you change smaller learning communities at your school?

15. What haven't we talked about that would help us better understand smaller learning communities at this school? What else would you like to add?

Appendix D

**Evaluation of the U.S. Department of Education's Smaller Learning Communities Grant Norfolk, Virginia, 2005/06 to 2009/10**

**Classroom Observation Protocol Description**

Old Dominion University has been asked to evaluate the implementation of smaller learning communities in Norfolk, Virginia high schools. The broad evaluation is designed to assess the effectiveness, efficiency, and equity of the smaller learning communities. Classroom observations of students are part of that process. Specifically, they help address the following evaluation question: To what degree were Smaller Learning Communities successfully implemented?

Attached is the classroom observation protocol we will be using in our observations. The observation instrument touches on criteria that scholars have found to be evident in successful smaller learning communities: SLC identity, student and teacher interactions, Academic Press, academic rigor, organizational skills, and authentic assessment. We also use an instrument called the Rubric for Student Centered Activities (RSCA) to validate our own instrument. This data collection instrument has been extensively tested by the University of Memphis and intentionally overlaps with our instrument.

Please note that **we are not evaluating the instructor or the academic preparedness of students**. Classroom observations are conducted purely to gather a long-range view of how students are interacting within the structure of smaller learning communities. We expect that as SLCs are implemented over time that students, on average, may display some of the qualities thought to be a byproduct of SLCs.

In 2007-08, we are visiting 9$^{th}$ grade classrooms and observing a different subject area each week. In 2008-09, we will add 10$^{th}$ grade classrooms as SLCs in Norfolk expand.

**We want to make sure you understand that this is not an evaluation of teachers.** We will not share any information gathered in your classroom with administrators – both within the school or at the central office. We do not record identifying information about students or teachers. And, all information is aggregated before presented in reports so that individual teachers, students, or classrooms cannot be identified. If you have any questions or concerns about our observations, please do not hesitate to contact Dr. Shana Pribesh at 683-6684 or spribesh@odu.edu.

# VITA

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1. 2008-present — Administrative Coordinator, Department of Curriculum and Instruction, Virginia Beach City Public Schools

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**Publications/Presentations**

Fischer, C. M., Bol, L., Pribesh, S. (In press). An investigation of higher-order thinking skills in smaller learning community social studies classrooms. *American Secondary Education.*

Fischer, C. M., Bol, L., Pribesh, S. (2009). An investigation of higher-order thinking skills in smaller learning community social studies classrooms. Paper presentation AERA National Conference, Denver Colorado.

Fischer, C. M. Manfra, M. (2008) Using Digital Documentaries to Teach about the Civil War. Paper presentation, National Council for the Social Studies Annual Conference, Houston, Texas.