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By

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The purpose of this study was to explore the adoption by U.S. middle schools of key practices recommended by the 1989 *Turning Points* report. Three questions were examined: (1) To what extent have the organizational practices identified by research to impact the development of “small learning communities” been adopted by U.S. middle schools? (2) To what extent do the instructional practices of U.S. middle school teachers reflect developmentally responsive or traditional/bureaucratic methods?, and (3) Do the instructional practices of U.S. middle school teachers differ between those who teach in schools with developmentally responsive organizational practices and those who teach in schools with more traditional/bureaucratic organizational practices?

National data gathered by the National Center for Education Statistics through the 1993-94 Schools and Staffing Survey were extracted for this study. A sample of 423 fulltime sixth, seventh, and eighth grade teachers of core academic subjects was derived from the 1994-95 Teacher Followup Survey (TFS) component. Frequency distributions were run on five dimensions of organizational practices identified with the development of “small learning communities”, in order to determine the extent of use of each practice in U.S. middle schools. Mean levels of the use of fourteen
instructional practices identified as "active"/developmentally responsive and eleven as "passive"/traditional practices were computed to examine the predominant instructional practices of U.S. middle school teachers. One-way ANOVAs were run to compare instructional practices of teachers who teach in schools with developmentally responsive organizational practices and those who teach in schools with more traditional/bureaucratic organizational practices.

Findings indicated that 4.3 percent of U.S. middle schools could be characterized as having organizational practices that support the development of "small learning communities", while the organizational practices of 45.7 percent reflected a "traditional/bureaucratic" pattern. Passive learning activities were more frequently employed than were active and/or developmentally responsive instructional strategies: Seven of the top ten most frequently used teaching methods found in the study reflected traditional, teacher-centered practices. Though the reported use of instructional practices tended to vary according to organizational practices as theorized, practically no significant differences of importance were observed.
CHAPTER I

INTRODUCTION

Most of today's educators cannot recall a time when American schools were not being called upon to engage in fundamental reform. The call for the improved academic achievement of American students has grown exponentially since the release of *A Nation At Risk* in 1982. Shifts in the social culture have become distilled and focused into political battles over the basic role and purpose of public education (Anfara, Jr., and Waks, 2000; Osuch, 1997). The current political climate has brought a widespread clamor for educational "accountability" and the achievement of "high standards" (Manzo, 2001).

Initially after *A Nation at Risk* was published, states placed much of their attention on high school reforms such as minimum competency exit exams and increased graduation requirements (Viadro, 2001; Killion and Hirsh, 1998). However, in 1996 American middle-grades education came into the scope of public concern with the release of the Third International Mathematics and Science Study (TIMSS). TIMSS results saw U.S. 8th grade achievement scores plummet from near the top of the international sample in 4th grade, to substantially below the international average of 41 nations (Alt and Choy, 2001). These findings were supported by lackluster 8th grade results on the 1994 and 1996 National Assessment of Educational Progress (NAEP) (Killion and Hirsh, 1998).
These assessments have called into question the effectiveness of current American middle school programs (Manzo and Bradley, 2000). Middle schools have been accused of placing too much emphasis on the physical, social, and emotional development of students at the expense of their academic development (Alt and Choy, 2001; Lewis, 2000; Manzo, 2000c). Consequentially, the nation’s middle school educators are facing increasing pressure to implement practices that can strongly raise student achievement for a much higher proportion of the student population (Dickinson and Butler, 2001; Jackson and Davis, 2000). Many educators are worried that this pressure will result in the dismissal and premature abandonment of hard-won middle school policies and practices (Nori, 2002; Bradley, 1998). However, it is not at all clear how warranted these charges are, nor how realistic it is to blame poor student achievement on a national overabundance of developmentally responsive programs and practices: A number of middle school researchers have stated that it may be more likely that U.S. middle school student achievement is dismal because of a widespread lack of student-centered programs and practices in U.S. middle schools (Dickinson and Butler, 2001; Lewis and Norton, 2000, Ruenzel, 1998).

Background

As a reform movement of nearly 40 years, the middle school educational model has been squarely based on the concept of “developmental responsiveness” (National Middle School Association, 1995, 1982; Clark and Clark, 1993). Middle
schools were originally designed to transform middle-level education from the bureaucratized, depersonalized, subject-centered model of programming found in junior high schools by the 1940s (Oakes, Quartz, Gong, Guiton, and Lipton, 1993; Lee and Smith, 1993; Cuban, 1992; Carnegie Council on Adolescent Development, 1989). Critics charged junior high schools with an “overemphasis on teacher-centered, academic, and disciplinary approaches” derivative of senior high school programs, and were deemed to be inappropriate for the effective and equitable education of young adolescents (Anfara, Jr., and Waks, 2000, p. 47). Starting in the early 1960s, middle level education advocates and organizations such as the National Association of Secondary School Principals called for the creation of middle schools to provide instruction and curriculum that engaged middle level students through a focus on their physical, social, and emotional development (Oakes, et. al., 1993). Coinciding with an era of rapid social change, dramatic shifts in student enrollments, and an increased focus on 9-12 grade high school programs, the middle school 6-8th grade or 7-8th grade configuration quickly grew to become the dominant form of middle grade organization by the mid 1980s (Valentine, 2000; George, Stevenson, Thomason, and Beane, 1992).

At the present time, middle school advocates fear that if blame for low student achievement is placed on programs and practices that respond to student developmental needs, there will be increasing pressure on them to return to more traditional bureaucratic and standardized practices—practices which they fear are ultimately less effective and more inequitable in their impact on student achievement.
Indeed, the beliefs of advocates regarding the value of developmentally responsive middle school programs have been strongly supported: Recently published results from studies undertaken in the early and mid 1990s have revealed a dramatic and positive impact on teaching, learning and student adjustment in schools that have implemented key developmentally responsive program policies and practices (Flowers, Mertens, and Mulhall, 1999; Felner, Jackson, Kasak, Mulhall, Brand, and Flowers, 1997; Lee and Smith, 1993).

Research on the Effectiveness of Developmentally Responsive Organizational and Instructional Practices

In a 1993 study, Lee & Smith use a theoretical framework in which the middle school model is part of the general educational reform movement away from bureaucratic organizations toward more communally organized schools. The traditional secondary schooling model commonly associated with the comprehensive senior high school is identified as a "rational-bureaucratic" model, that "focuses on formal functions and specialized tasks, with teachers and students interacting in roles that are affectively neutral, rule governed, and differentiated by status" (pg. 165). The description of the communal schooling model emphasizes the importance of social relationships within schools, minimizes role differentiation, and promotes a common culture marked by informal social interactions and consensus. Lee and Smith cited persuasive empirical evidence that bureaucratized schools lead to student and teacher disengagement and alienation, and that the increased differentiation in
ability-based groupings found in these environments magnifies the social distribution of achievement. On the other hand, Lee and Smith found in their study middle grades students who attend schools that are less bureaucratically structured, and that have implemented a number of responsive organizational reforms that foster “small societies” for teaching and learning (such as less ability grouping, more team teaching, less academic departmentalization, smaller student groupings) demonstrated higher academic achievement, more engagement, and that the distribution of achievement was more equitable across the demographic student population.

Felner Jackson, Kasak, Mulhall, et. al. (1997) found that students in middle grades schools that have “created small communities for learning” report greater psycho-social well-being and receive higher achievement scores than students from more traditionally organized schools. One of the organizational features found to be key in creating “small communities” is interdisciplinary teacher teaming. Moreover, this research discovered that the effectiveness of teacher teaming is strongly related to the overall level of implementation of the particular reform. Among the factors found to impact the level of implementation of interdisciplinary teaming are (1) the amount of teacher collaboration and coordination of instruction, (2) the total number of students for which a teacher or teacher team is accountable, as well as (3) the overall student-teacher ratio. Indices of student adjustment and achievement on standardized assessments showed a strong, significant positive relationship to the level of implementation of reforms.
Flowers, et. al. (2000, 1999) have found Michigan middle schools that start with interdisciplinary teaming as a reform priority tend to be more successful at implementing responsive instructional practices such as small-group instruction, heterogeneous grouping, integrated and interdisciplinary teaching, as well as increased student achievement and adjustment. In a synthesis of this research Norton (2000) cited their findings that the establishment of “teaming structures enable the deeper issues to manifest because the school has already addressed the common issues of teachers working and planning together, establishing small communities for learning, and addressing individual student needs” (pg. K-7). Flowers, et. al. (1999) also explored the relationship between the organizational features of teacher collaboration and the use of recommended and effective responsive instructional practices. Supporting Felner’s research, these researchers found the effectiveness of teaming and the use of developmentally responsive instructional practices are impacted by the overall size of the group of students for which a particular group of teachers are responsible.

The three groups of research cited above indicate the importance of implementing organizational practices in middle schools that support the development of small, more personalized teaching and learning environments. When the conditions for these environments have been met, stronger relationships can result between students and teachers, and more responsive instructional practices are more likely to be practiced by middle school teachers. In the studies cited above, schools that were able to successfully implement the responsive organizational and
instructional features described above saw improvement in student achievement scores as well as in student adjustment indicators.

**Little Evidence of Widespread Adoption of Key Developmentally Responsive Practices**

The research cited above provides persuasive evidence that developmentally responsive organizational and instructional practices improve middle school student outcomes in academic achievement and psycho-social adjustment, when compared to more traditional, bureaucratic educational practices. These findings indicate that U.S. middle school student achievement is more likely to improve with the use of student-centered practices. However, there is evidence to suggest that widespread adoption of key practices did not accompany the shift from junior highs to middle schools. Though the developmental orientation of the middle school received strong support among educators and national policy makers between 1960 and 1990, the actual implementation of developmentally responsive programs and practices appears to have lagged significantly behind the national establishment of school organizations labeled “middle schools”: A 1993 survey by the National Middle School Association indicated that nearly 90 percent of the grade 6-8 schools had not significantly changed their instructional practices from the teacher and subject-centered ones of the traditional junior high (McEwen, Dickinson, and Jenkins, 1996). In fact, the authors of that study estimated that, at best, only one-third of U.S. middle schools had “actively” pursued reforms in programs and practices to increase developmental responsiveness by 1993.
Practice has not appeared to change over the course of the 1990s. In 1997, Felner, et. al. wrote "... neither the research literature nor our own findings to date support the contention that structural changes have been institutionalized" (p. 530). The evidence cited above indicates that the most common model of middle school education in use during the early 1990s was not the developmentally based middle school (Viadro, 1996; Sommerfeld, 1995). Therefore, it is most likely that the academic achievement of U.S. middle school students during the 1990s was not strongly impacted by the use of effective, developmentally responsive programs and practices (Ankara, Jr., and Waks, 2000, Ruenzel, 1998).

How can we know which type of middle school program is predominant in the U.S. today? How great has been the adoption of effective, developmentally responsive policies and practices in the nation’s middle schools, compared to more traditional bureaucratic practices? Perhaps an answer to the dissatisfaction with the achievement results of U.S. middle school students in the 1990s lies in what didn’t happen in American schools after the nationwide establishment of middle schools in the 70s and 80s.

Statement of the Problem

It is clear that the middle school (grades 6-8 or 7-8) has become the predominant organizational pattern for American middle-level education (Valentine, 2000, George, et.al., 1992). However, it is not clear to what degree the nation’s middle schools have implemented developmentally responsive program and policy
elements recommended by the educators, policymakers and advocates—practices that have been found effective in responding to both the academic as well as the socio-emotional needs of young adolescents (Flowers, et.al., 2000, 1999; Felner, et.al., 1997; Lee and Smith, 1993; George, et.al., 1992). A study to identify key program characteristics in operation in the nation’s middle schools is needed because middle school educators are being asked to change their programs to increase student achievement. But what does this mean? Change from what to what? Drop the developmental focus of middle school practice and return to earlier subject-centered junior high-style practices? How sure are we that the majority of American middle schools ever changed from key practices associated with the traditional junior high program to the developmentally responsive programs and practices recommended by middle school advocates? Perhaps instead it is an older program model that has prevailed and now deserves the indictment of educators and policymakers.

Purpose of the Study

The purpose of this study was to uncover the extent to which U.S. middle schools have adopted developmentally responsive organizational and instructional practices that have been associated with improved student achievement (Flowers, et. al., 2000, 1999; Felner, et. al., 1997; Lee and Smith, 1993). The data for this study were extracted from the Schools and Staffing Survey (SASS), 1993-94, and the corresponding Teacher Followup Survey (TFS), 1994-95 conducted by the National Center for Education Statistics (NCES) of the U.S. Department of Education. The
1993-94 SASS is a nationally representative survey that collected public- and private-sector data on the nation’s elementary and secondary schools, teachers, principals, and their school districts (Alt & Choy, 2000). In addition, this study looked for preliminary evidence of a relationship between organizational and instructional practices, in order to see whether SASS data appear to generally support the findings of a positive relationship reported by earlier researchers (Flowers, et. al., 2000, 1999; Felner, et. al., 1997). These findings provide valuable evidence for U.S. educators and policymakers on which to base decisions regarding the reforms needed to improve the academic achievement of U.S. middle school students in present-day middle school programs.

Research Questions

1. What are the levels/patterns of use of organizational practices that have been found by researchers to impact the development of “small learning communities”?
   1.1 Do the data indicate a predominant pattern of organizational practice, e.g., “developmentally responsive” and/or “traditional/bureaucratic”?

2. What are the levels/patterns of use of instructional practices that have been found by researchers to impact the engagement and learning of early adolescents?
   2.1 Do the data indicate a predominant a predominant pattern of instructional practices, e.g., “developmentally responsive” and/or “traditional/bureaucratic”?
3. Is there any evidence of a relationship between the organizational and the instructional practices used in middle schools?

3.1 What does instructional practice look like in schools that have “high” levels/use of developmentally responsive organizational practices?

3.2 What does instructional practice look like in schools that have “low-no” levels/use of developmentally responsive organizational practices?

Significance of the Study

America’s schools have been handed their biggest challenge to date: “Leave no child behind” (President G.W. Bush, 2002). The country has asked educators to raise student achievement for all students. To offer effective programs for all learners will take perseverance, creativity, and knowledge of best practices based on current research. It is important that American middle school educators and policymakers understand the current realities of middle school practice when evaluating its effectiveness, in order to prevent the premature abandonment of demonstrably effective programs and policies.

The SASS data is unique in the scope and breadth of the information collected. Gathering input from a variety of school stakeholders in a national stratified sample, the SASS can provide multiple perspectives on educational practice, including organizational structures, school policies, student support services, school climate, teacher satisfaction, teacher training, professional development, and teaching and assessment methods, which will allow this study to assess the relationship
between a variety of middle school programs and practices. The SASS offers longitudinal data that offers the opportunity to identify trends or patterns of practice. Finally, the SASS provides unique information that is representative of educational practice at both the state and national level.

The middle school concept was originally proposed for a very specific purpose: To raise student achievement equitably and effectively by engaging students with programs and practices that address their physical, social, and emotional developmental needs (NMSA, 1982; 1995; Oakes, et. al., 1993; Carnegie Council, 1989). Though this orientation was widely acclaimed, there is little evidence that reforms based on this model of education were ever widely implemented in U.S. middle schools (Jackson and Davis, 20001; Viadro, 1996; Sommerfeld, 1995; NMSA 1995). Despite this finding, the developmentally responsive middle school has now been charged with the poor achievement of U.S. middle school students (Manzo, 2001; Lewis, 2000; Killion and Hirsh, 1998). The middle school movement is 30-40 years old, yet it has made very few documented gains. Research needs to be conducted that will shed light on strides made—if any—in the middle school movement.

Definitions

For the purpose of this study the following definitions are used:

**Developmental needs:** Scales (1991, cited in NMSA, 2001) identified seven key developmental needs of young adolescents that educators should consider when
designing and delivering education: Positive social interaction with adults and peers, structure and clear limits, physical activity, creative expression, competence and achievement, meaningful social participation in families, schools, and opportunities for self definition. Other researchers have identified an increase in the desire for autonomy, growing orientation to peers and social acceptance, and an increased need to work on personal identity issues (Wigfield and Eccles, 1994).

**Developmentally responsive/**developmentally appropriate:** A phrase used to describe practices primarily designed to take into consideration, or to address students' growth in the developmental characteristics as described above (NMSA, 1995).

**Student-centered:** A popular phrase used to describe practices whose purpose is to address or take into consideration student developmental characteristics, as opposed to those actions or practices primarily designed for the ease, efficiency, or needs of those other than the student (Anfara, Jr., and Waks, 2000).

**Teacher-centered:** A popular phrase used to described practices (primarily instructional and/or organizational) whose design or intent place the convenience or needs of teachers before those of students (Anfara, Jr., and Waks, 2000).

**Middle school:** A school organized to house grades 6-8 (primarily), or other combinations of grades between 4th (at the extreme) and 8th; designed to educate students roughly between the ages of 10-14 (Valentine, 2000). Middle schools are based on the social and academic developmental needs of young adolescents (Miles and Valentine, 2001).
Junior high school: A school organization designed in the first part of the 20th century to bridge the gap between elementary grades and senior high school, primarily in grade 7-9 (Cuban. 1992). The design of the junior high school was based on the secondary education model of organization by subjects and departments (Miles and Valentine, 2001).

Limitations

The primary limitations of this study are based in the nature of most post-hoc analyses: The SASS was not created specifically for the theoretical construct of this study. Therefore the accuracy of this study’s conclusions have been influenced by the researcher’s assumptions regarding the applicability and/or intent of the data collected by each item on the survey.

Perhaps of most concern, the most recent year for which SASS data are currently available is 1993-1995, which may provide only incrementally more information on middle school program implementation than the last national survey undertaken in 1993 by NMSA. However, the 1999-2001 SASS results are scheduled to be released in the summer of 2002. It is anticipated that the present study will be used as a template for the future analysis of up-to-date, nationally representative data on middle school programs that will be offered by the soon-to-be-released 1999-2001 SASS data.
Organization of the Study

In the following chapter, greater background information is provided through a review of related literature. The design and methods used to answer the research questions are described in Chapter III. In Chapter IV the data gathered and its analyses will be described. Last, in Chapter V, the findings and their implications will be discussed.
CHAPTER II

REVIEW OF RELATED LITERATURE

The purpose of this study was to uncover the extent to which U.S. middle schools have adopted developmentally responsive organizational and instructional practices that have been associated with improved student achievement (Flowers, et al., 2000, 1999; Felner, et al., 1997; Lee and Smith, 1993). In addition, this study examined the relationship between the selected organizational practices and the use of recommended, effective and developmentally responsive instructional practices. The degree of use of organizational and instructional practices associated with the older model of middle grades education, and the relationship between these practices and the selected organizational practices was also studied in order to identify, where possible, the extent of the use of traditional, less effective practices. These findings provide valuable evidence for U.S. educators and policymakers on which to base decisions regarding the reforms needed to improve the academic achievement of U.S. middle school students in present-day middle school programs.

This chapter presents background information regarding key issues, initiatives, and principles of middle-level education through a review of related literature. In the first section of this chapter, the background of today's current issues in middle-level educations will be examined. This will be followed by a section exploring the literature on the developmental characteristics and needs of young
adolescents, and the related instructional/organizational implications for
developmentally responsive programs and practices. Next, evidence regarding the
relationship between student achievement and school organizational practices will be
discussed. In the fourth section of the chapter, the most recent evidence on the level
of adoption of these practices in U.S. middle schools will be described.

Background of Current Issues in Middle Level Education

Calls for reform in middle-level (roughly, between grades 5 and 8) education
have been evident since the early 20th century, when the junior high school was
established to “... rescue teenage boys and girls from dropping out in the eighth
grade, and provide prevocational choices to uncertain youth” (Cuban, 1992). Junior
high educators sought ways to address developmental as well as intellectual needs of
young adolescents (Vasallo, 1990). However, within two decades of its founding the
junior high was faced with charges to improve. And within fifty years, the junior
high reform was itself reformed by the middle school movement (Cuban, 1992).

Some of the criticisms leveled at junior high schools seem familiar today: A
fragmented, departmentalized curriculum, over-reliance on an instructional style
characterized by teacher lecture, student passivity and heavy dependence upon
textbooks, the lack of equitable access to quality education through the practice of
student tracking, and a lack of teacher expertise in both the developmental needs of
eyear adolescent youth, as well as intellectual depth in the subjects taught (Alt and
Choy, 2000). Junior high schools were perceived to have evolved into watered-down
versions of the comprehensive senior high school, ill-suited to address the emergent social, emotional, and learning needs of young adolescents (George, et. al., 1992). These concerns formed the basis of the middle school reform movement that began to grow during the 1960s.

The growth in the establishment of middle schools, and the subsequent decline in junior highs were phenomenal during the 1960s and 1970s (Valentine, 2000; MacIver and Epstein, 1993). However, many educators became concerned that middle schools were a reform in name only (Oakes, et. al., 1993, George, et. al., 1992; Epstein, 1990). There is much evidence that, in an era marked by exploding school populations and the potent issues surrounding the integration of schools, administrators rushed to organize new schooling units primarily for administrative and political purposes, failing to implement the changes in instruction, organization, and philosophy that characterized the middle school model (Clark and Clark, 1993; Cuban, 1992; George, et. al., 1992). The net result of this explosive, yet haphazard growth was the widespread repackaging of the junior high schooling model, this time for a younger student even less suited to its design (Clark and Clark, 1993: Keefe, Valentine, Clark, and Irvin, 1993; Oakes, et. al., 1993).

As concern grew among middle-level educators and researchers, a number of in-depth studies were undertaken, influential position papers crafted and middle-grade reform initiatives implemented. Beginning with the publication of the National Middle School Association’s (NMSA) manifesto, This We Believe in 1982, and the National Association of Secondary School Principals’ (NASSP) An Agenda for
Excellence at the Middle School Level (1985), a new, stronger focus for school programs to meet adolescents’ physical, emotional, and social needs was called for. In fact, a concern for students’ developmental needs came for some to take priority over the meeting of expected norms of student academic achievement: “While societal expectations are important and tradition ought not be ignored, a true middle school curriculum will actually be based largely upon student needs” (NMSA, 1982).

The Impact, Influence, and Implementation of the Turning Points Principles

In 1989 the Carnegie Council on Adolescent Development released Turning Points: Preparing American Youth for the 21st Century, a report that became tremendously influential in the middle school reform movement (Dickinson and Butler, 2001; Norton, 2000; Felner, et. al., 1997; Clark and Clark, 1993; MacIver and Epstein, 1993). Turning Points stressed the need to address both the academic and socio-emotional development of adolescents. Identifying the middle grades as the weak link in education, the report’s authors asserted:

“A volatile mismatch exists between the organization and curriculum of middle-grade schools and the intellectual and emotional needs of young adolescents. Caught in a vortex of changing demands, the engagement of many youth in learning diminishes, and their rates of alienation, substance abuse, absenteeism, and dropping out of school begin to rise” (Carnegie Council on Adolescent Development, 1989, p. 8).

Among the Council’s research and findings were eight recommendations for the organization and focus of an optimal middle school program. These recommendations were rather unique in that they offered a comprehensive blueprint
of professional practices or elements that could be readily translated into programmatic structures or practices that could, when implemented, be empirically measured and evaluated (Dickinson and Butler, 2001; Anfara, Jr., and Waks, 2000; Stevenson and Erb, 1998; Felner, Kasak, Mulhall, and Flowers, 1997).

The Turning Points Recommendations

1. Divide large middle-grades schools into smaller communities for learning. “Schools should be a place where close, trusting relationships with adults and peers create a climate for personal growth and intellectual development” (p. 37).

2. Provide all students access to a common core of high-level knowledge and skills. “Every student in the middle grades should learn to think critically through mastery of an appropriate body of knowledge, lead a healthy life, behave ethically and lawfully, and assume the responsibilities of citizenship in a pluralistic society” (p. 42).

3. Organize instruction to ensure success for all middle-grade students. “All young adolescents should have the opportunity to succeed in every aspect of the middle grade program, regardless of previous achievement or the pace at which they learn” (p. 49).

4. Empower teachers and administrators to make key pedagogical, management, and budgetary decisions. “Decisions concerning the
experiences of middle grade students should be made by the adults who know them best" (p. 54).

5. Prepare middle-grades teachers specifically to teach young adolescents. “Teachers in the middle grade schools should be selected and specially educated to teach young adolescents” (p. 58).

6. Improve academic performance through better fitness and health. “Young adolescents must be healthy in order to learn” (p. 60).

7. Reengage families in the education of young adolescents. “Families and middle grade schools must be allied through trust and respect if young adolescents are to succeed in school” (p. 66).

8. Connect schools with communities. “Schools and community organizations should share responsibility for each middle grade student’s success” (p. 70).

Within a year of the publication of *Turning Points*, a number of foundation-based middle school initiatives were undertaken to promote and support implementation of the *Turning Points* recommendations. The Middle Grade School State Policy Initiative (MGSSPI) was underwritten by the Carnegie Foundation to stimulate statewide changes in policy and practice that ultimately focused its funding efforts to 15 states. Three other initiatives designed to promote middle school reform based on the *Turning Points* recommendations were the Middle Grades Improvement Program (Lilly Foundation, begun in 1987 and based in Indiana schools), the Illinois

Era of "Accountability"

However, the tone of the times changed during the decade between the mid-to-late 1980s and mid-to-late 1990s. Political pressure for educational accountability through minimum competency testing in the 1980s grew into the present-day national emphasis on student achievement in mandated, "standards-based" curriculum and assessments (Manzo, 2001, 2000a; Viadro, 1999; Bradley, 1998). Middle school education especially came under attack upon the release of the Third International Mathematics and Science Study (TIMSS) report in 1996 (Alt, Choy, and Hammer, 2000). TIMSS found American elementary students scored above the international average and placed in the top eight of nations in mathematics, yet fell below the international average of 41 nations by eighth grade, not even placing within the top 20 nations. By 1997, the basic premises of the middle school movement started to be questioned. Middle schools began to be accused of neglecting academic outcomes as a result of placing too great a priority on students' emotional and social development (Manzo, 2001, 2000a; Viadro, 1999; Bradley, 1998).

The current social and political environment is placing great pressure on U.S. middle schools to improve student achievement (Manzo, 2001; Jackson and Davis, 2000; Norton, 2000). However, many middle-level educators fear that a predominant focus on academics will lead once again to a fragmented, departmentalized
curriculum and teacher-centered, directive instruction, ill-suited to the unique learning and development needs of young adolescents (Nori, 2002; Bradley, 1998). These concerns will be returned to and explored in depth through an examination of the validity of the current charges against middle schools later in the chapter. At this point it may be useful to find out more concerning the basic precepts on which the movement for developmentally responsive middle level education is based. In the next section of this chapter, descriptions of the developmental characteristics of early adolescents will be identified, followed by a summary of the corresponding instructional/organizational programs and practices recommended by middle school advocates and researchers.

Developmental Needs and Characteristics of Young Adolescents

In the early part of the 20th century, G. Stanley Hall characterized adolescence as a “period of emotional upheaval, expanding interests, and a widened perspective on life” (cited in Oakes, 1993). Scales (1991, cited in NMSA, 2001) identified seven key developmental needs of young adolescents that educators should consider when designing and delivering education: (1) Positive social interaction with adults and peers, (2) structure and clear limits, (3) physical activity, (4) creative expression, (5) competence and achievement, (6) meaningful social participation in families, schools, and (7) opportunities for self definition. Other researchers have identified an increase in the desire for autonomy, growing orientation to peers and social acceptance, and an increased need to work on personal identity issues (Wigfield and Eccles, 1994).
The 1995 edition of *This We Believe: Developmentally Responsive Middle Level Schools*, produced and published by the National Middle School Association, contained a comprehensive description of the developmental characteristics of young adolescents in the areas of intellectual, moral, physical, emotional/psychological, and social growth, as summarized below:

**Intellectual development:** There are wide variations in stages of intellectual development in young adolescents; they are generally in transition from concrete to abstract thinking phases. They are very curious, but interests are transitory. Active learning is preferred over passive, as are opportunities to interact with peers and/or real-life situations as part of learning activities (NMSA, 1995; p. 36).

**Moral development:** Young adolescents are generally idealistic, and wanting to have a socially useful role in making the world a better place. They are transitioning from an egocentric value system to one that is more considerate of others' feelings and rights. Relying on significant adults for important advice, students are growing in ability to assess moral matters in “shades of gray”. They can be quick to judge others, but slow to admit their own faults; they greatly value direct experiences in participatory democracy (p. 37).

**Physical development:** There is a great variety between the rapid, irregular physical growth and physical maturity rates that may cause lack of coordination among young adolescents. Hormonal changes leads to increased restlessness, fatigue, and a need for daily physical activity because of increased energy. They can be very
concerned with bodily changes, and can be physically vulnerable and prone to adopting poor nutritional or risky behavioral habits (p. 38).

**Emotional/Psychological development:** Many of the characteristics of the emotional/psychological development of young adolescents described in *This We Believe* have been included in the earlier descriptions, above. A brief list here is given: Mood swings of intensity and unpredictability; increasingly desirous of independence and autonomy and an adult sense of self; very concerned with peer acceptance, tending to be very self-conscious, lacking self-esteem, and highly sensitive to personal criticism. Most importantly, young adolescents are highly vulnerable psychologically, because they encounter more differences between themselves and others than at any other stage in their lives (p. 38-9).

**Social development:** As was found in the descriptions of emotional/psychological characteristics above, many of the characteristics of early adolescent social development have been stated or strongly implied by the earlier descriptions in the other developmental areas. Attributes unique to this area of development listed by the NMSA (1995) document are initial intimidation and fear on first middle school experiences; enjoy following fads; overreaction to ridicule, embarrassment, or rejection; desire for recognition of effort and achievement; strong need to belong to a group; great sensitivity to peer approval, and a tendency to model behavior after an older, highly regarded student or non-parent adult (p. 37-8).
Instructional and Organizational Implications

Wigfield and Eccles (1994) hypothesized that inappropriate school settings may be the cause of recorded declines in the values, self-esteem, and beliefs of young adolescents. They concluded that the developmental characteristics of students are thwarted by traditional junior high school programs that promote more controlled settings and less opportunities for student decision making, self-management or choice; less positive or close relationships between teachers and students, and more passive, whole-group instruction in a more competitive environment. On the other hand, the primary precept of the middle school concept is to premise all programs and practices on the “developmental needs” of young adolescents (NMSA, 1995, 1982; Clark and Clark, 1993; George, et al., 1992). Therefore, all decisions made and practices followed—such as policy, educational delivery structures and systems (divisions and allocations of time, space, students, and staff), decision making processes, curriculum, and instruction—should ideally be answers to the question of what learning, instruction, policies, etc., best meets the social, emotional, intellectual and physical needs of middle grades learners. Among the strategies suggested by middle school researchers to address these needs are active learning strategies, real-life and exploratory experiences, and instructional activities that allow for opportunities for socialization and the development of positive relationships between peer students, and students and teachers (Manning, 1997; NMSA, 1995; Oakes et al., 1993; Carnegie Council on Adolescent Development, 1989; NMSA, 1982). Moving away from ability grouping, or tracking, in order to increase access for all children to
high-quality educational opportunities leads to a need for instructional methods that promote cooperative student learning and choice (Oakes, et. al., 1993; Slavin, 1993; Carnegie Corporation, 1989). Other researchers urge the use of a task-focused motivational orientation (as opposed to ability-focused) in the design and evaluation of instructional activities, in order to avoid unhealthy social and ability comparisons between students and promote the development of positive self-image through task-completion motivation (Urdan, Midgley, and Wood, 1995).

In *This We Believe* (NMSA, 1995), middle schools were called upon to create programs that met certain standards. These standards and their descriptions are summarized below:

**Developmentally responsive middle level schools provide:**

**Curriculum that is challenging, integrative, and exploratory.** Challenging curriculum is substantive, relevant, rich in personal meaning, individualized, and guides them in gaining responsibility for making choices and decisions about their own education. An integrative curriculum is one that helps students make sense out of their life experiences, coherent, and helps students make connections between school and their daily lives. An exploratory curriculum has three earmarks: (1) It enables students to discover their own talents, interests, values and preferences, (2) It reveals opportunities for making meaningful contributions to society, (3) It acquaints young adolescents with enriching life-time activities in the physical activity, the arts, and social services.
Varied teaching and learning approaches. “Since young adolescents learn best through engagement and interaction” (p. 25) teaching strategies that get students actively involved in hands-on participation are favored. In addition to traditional direct instruction, a variety of approaches are listed such as experiments, demonstrations, opinion polls, simulations, and independent study. Strategies that promote collaboration, cooperation, and peer interaction, in different groups formed on the basis of a variety of criteria (random, ability, interest, etc.) are encouraged. Individual differences are addressed through collaboration between the regular and special education teachers in the development of learning activities that provide “appropriate challenges for all types of learners”.

Assessment and evaluation that promote learning. Assessment and evaluation activities should ideally be learning strategies as well: Assessments can be culminations of learning activities in the form of demonstrating, displaying, publishing, or other behavioral evidence that supplements assessments obtained through traditional testing. The NMSA authors make a distinction between assessment (“the process of measuring a student’s progress toward a goal or objective”) and evaluation (“the process of using data and standards to judge the quality of progress”) (p. 26), and state that both activities should measure the processes as well as the products of student learning. In addition to academic knowledge and skill, aspects such as critical thinking, curiosity, and other desired personal attributes should be measured, which requires a variety of procedures such as the use of checklists and observation scales. Very importantly, since this age
group is a crucial time in developing self-image and social self-concept, it is urged that assessment and evaluation emphasizes individual growth, and not comparison among students. NMSA also encourages an emphasis on rewarding all reasonable student effort and accomplishments made, in addition to helping students and families understand how their performance corresponds to state or national norms.

**Flexible organizational structures.** “Organizational structures” refer to the grouping of students, the scheduling of instruction, and the staffing of teachers for instruction. NMSA recommends that large schools be broken into smaller “schools-within-schools” or “houses”, and that teachers and students be assigned together into smaller interdisciplinary teams. Ability grouping is not used; individual differences are met through such activities as enrichment programs, cooperative learning, or student groups based on student ability or interest, as is needed. The daily schedule is sufficiently flexible as to allow different class groups and/or grades to meet together when needed. Instruction may occur in a variety of settings around the school campus or community; daily common planning time is provided for teachers, who are empowered to design and operate and moderate programs and practices to meet the unique needs of their learners.

**Programs and policies that foster health, wellness, and safety.** A comprehensive program is offered in physical education, and in physically active educational activities. Health and fitness issues are addressed as well with such topics as nutrition, peer mediation, mental health, and the program provides opportunities
for students to develop and practice healthy decision-making, coping, and refusal skills.

**Comprehensive guidance and support services.** The use of advisory programs that help students develop respect for self and others is promoted, as well as the use of “teacher advocates” to serve as adult mentors and advisors to small groups of individual students. The school guidance program, counseling staff, and social and health-care services are important supports that should be comprehensively coordinated by the school counselors (p. 32).

Middle school researchers and advocates have created a very specific vision for the types of programs and practices necessary for providing a developmentally responsive education to middle level students. The intent of such an education is to help students become “good citizens, lifelong learners, and healthy, caring, ethical, and intellectually reflective individuals” (NMSA, 1995, p. 5). Though these outcomes are broad-based and highly laudable, there is an omission both in the NMSA and *Turning Points* recommendations that is glaring from the perspective of today’s political climate: Missing from this list of learner outcomes is “excellence in academic achievement”. Whether or not today’s focus on academic achievement is overly narrow, there is some evidence that attention to academic goals has been neglected in the middle school movement through an overemphasis by both local and national educators and advocates on school organizational issues and student developmental needs (Jackson and Davis, 2000; Lewis and Norton, 2000; Sommerfeld, 1995).
What is the record regarding the impact of developmentally responsive practices on student achievement? Designed to promote a broad set of learner outcomes, how do such practices meet today’s demand for a more narrowly defined outcome of academic achievement? In the next section of this chapter, evidence on the effectiveness of developmentally responsive middle level programs and practices on student achievement will be explored.

The Relationship Between Student Academic Achievement and School Organizational and Instructional Practices

In many regards the current debate between the developmental vs. the more traditional, subject- and teacher-centered program orientation is only the current battle between two age-old educational/philosophical value concepts (Anfara, Jr., and Waks, 2000). Neither value concept is based on primarily empirical grounds, and therefore solutions or reforms associated with each value tend to be ideologically, not empirically, based. Beliefs as to the value and effectiveness of policies and practices based on such concepts tend to gain or lose favor as public opinion shifts, rather than on the basis of findings of empirical research (Cuban, 1992). However, in this case, research on the characteristics and effectiveness of U.S. middle school programs could remove the question from the realm of ideological debate, and provide vital empirical, objective information by which to guide future policy and practice (Felner, Kasak, Mulhall, and Flowers, 1997).

A large reason there is current disagreement on which program orientation has a more positive impact on student achievement is that there is little research available
on the actual nature of the middle grades educational programs and practices currently implemented across the U.S (Dickinson and Butler, 2001; Felner, et. al., 1997; Lee and Smith, 1993). In other words, information is needed regarding which type of educational program and/or practices is predominant, and therefore most "at fault" for the lack of U.S. middle school achievement (Dickinson and Butler, 2001). This data, when coupled with empirical data on the educational outcomes shown by research to be associated with the particular programs and/or practices, can provide policymakers and educators with the information necessary for an objective evaluation of the effectiveness of current programs and practices.

In decrying the "striking lack of empirical studies that evaluate actual implementation of systematic education reform and its impact on student outcomes" (Felner, Kasak, et. al., 1997; p.524), researchers from the Project on High Performance Learning Communities promoted the need for more such research: "The undeniable linkage between learning and achieving at high levels on the one hand and full participation in society and the economy on the other makes [this research goal] one that transcends liberal and conservative ideologies" (1997, p. 522).

A Paucity of Data

A summary of research on academic achievement published by NMSA (2001) reports that the determination of the relationship between student achievement and school organization is a complex issue. First, the summary states that the research focusing on achievement primarily looks at the relationship between student
academic gains and rather discrete and isolated (by the nature of research practice) educational practices or programs, not to entire types of school organization. Not only may these specific programs and practices exist at either middle or traditional junior high schools, their impact on student achievement is greatly more direct and individually capable of assessment than the identification of the effects of an overall aggregation of variables, such as would be needed to evaluate the type of school organization. The summary identifies other factors responsible for the lack of data on this issue are the difficulty of comparing studies, and weak and conflicting research methodologies (Hough, 1989, cited in NMSA, 2001 #12).

Lee and Smith (1993) concluded that the paucity of data on the relationship of middle school reforms on student academic achievement was due to three factors: (1) The relative lack of variability or change in “the independent variable of interest” (i.e., middle school organization) over the past century; (2) A relative lack of research interest in middle-grade education, compared to the interest in the distinctly disparate models of organization found in elementary and secondary schools; and, (3) Misconceptualization of the questions to be investigated by those empirical studies evaluating the effects of variations of school organization on students, as well as a lack of statistical methods adequate to encompass the complexity of this interaction (p. 168). The complexity of the assessment of the independent, school organizational variables is matched by that of the measurement of the dependent variable, achievement. Both Lee and Smith and the authors of the NMSA research summary on academic achievement caution that the construct of student achievement must take
into account the type of gains made by all types of students, including assessment of such things as drop-out rates, absenteeism, and incremental growth in the achievement of even the most at-risk students, making the measurement of "academic achievement" a complex undertaking.

The Effect of Responsive Organizational and Instructional Practices on Student Achievement

An 1992 study found that students in middle level schools that emphasized "active, interactive, and discovery" instructional approaches, showed higher student achievement, while an emphasis on passive, drill-oriented instruction was significantly associated with greater student boredom, lower rates of homework completion, and less confidence that schoolwork would be useful in the future (Epstein and MacIver, 1992, cited in MacIver and Epstein, 1993). The implications of this study is that the organizational and instructional factors associated with the traditional junior high form of schooling have a negative impact on student learning and attitudes.

One of the first studies to look at the impact of primarily organizational middle school reforms on student outcomes using a nationally representative sample was done by Valerie E. Lee and Julia B. Smith (1993). Utilizing data obtained from the National Education Longitudinal Study of 1988 (NELS:88), these researchers discovered a consistent, positive relationship between reforms that corresponded to those recommended by the NMSA (1982; 1995) and the Turning Points report on
both student achievement and engagement, as well as a more equitable social
distribution of those outcomes.

In their study, Lee and Smith used a theoretical framework in which the
middle school model is seen as part of the general educational reform movement
away from bureaucratic organizations toward more communally organized schools.
The traditional secondary schooling model commonly associated with the
comprehensive senior high school is identified as a “rational-bureaucratic” model,
that “focuses on formal functions and specialized tasks, with teachers and students
interacting in roles that are affectively neutral, rule governed, and differentiated by
status” (pg. 165). The description of the communal schooling model emphasizes the
importance of social relationships within schools, minimizes role differentiation, and
promotes a common culture marked by informal social interactions and consensus.

Lee and Smith cited persuasive empirical evidence that bureaucratized schools
lead to student and teacher disengagement and alienation, and that the increased
differentiation in ability-based groupings found in these environments magnifies the
social distribution of achievement. On the other hand, Lee and Smith found in their
study middle grades students who attend schools that are less bureaucratically
structured, and that have implemented a number of responsive organizational reforms
that foster “small societies” for teaching and learning (such as less ability grouping,
more team teaching, less academic departmentalization, smaller student groupings)
demonstrate higher academic achievement, more engagement, and that the
distribution of achievement is more equitable across the demographic student population.

In a national study of leadership in middle level schools, researchers from the National Association of Secondary School Principals (NASSP, 1993) compared the student outcomes of a small sample of restructured middle schools to similar data obtained by the team on a nationally representative sample of middle schools. These researchers found that students’ average scores in mathematics and reading in the reformed schools were above the average of the national norm group in the study.

The most comprehensive, systematic body of research on the effects of developmentally responsive reforms in middle school programs and practices on student achievement has come from researchers studying the outcomes of middle schools that have implemented reforms based on the programmatic recommendations found in the Turning Points report. Research published by Robert D. Felner and colleagues on 31 Illinois middle schools show that the greater the degree of implementation of recommended responsive programs and practices, the greater is student achievement on standardized tests in mathematics and reading (Felner, et. al., 1997). In addition, these researchers reported that as schools increase the quality of the implementation of these reforms, student “adjustment” ratings improved, and reports of behavioral problems declined. Similar results were reported in a study on 26 Massachusetts schools that also used Turning Points as a basis for reform during the 1990s (DePascale, 1997, as cited in Jackson and Davis, 2000, p. 4).
Felner, et. al. (1997) found that students in middle grades schools that have “created small communities for learning” reported greater psycho-social well-being and receive higher achievement scores than students from more traditionally organized schools. One of the organizational features identified as to be key in the creation of “small communities” is interdisciplinary teacher teaming. Moreover, this research discovered that the impact of teacher teaming is strongly related to the overall level of implementation of the particular reform. Among the factors reported to impact the level of implementation of interdisciplinary teaming are (1) the amount of teacher collaboration and coordination of instruction, (2) the total number of students for which a teacher or teacher team is accountable, as well as (3) the overall student-teacher ratio. Indices of student adjustment and achievement on standardized assessments show a strong, significant positive relationship to the level of implementation of reforms. However, Felner’s team reported that there appears to be critical levels of implementation in the three factors listed below or above which changes make little difference: “Teams that exceed approximately 120 students, that have fewer than four common planning periods per week, and that have student/teacher ratios beyond the middle 20s tend to show little impact on instructional practices or student well-being” (p. 548). Felner’s research identified a variety of problems that occur when these variables are inadequately implemented: (1) Teachers fail to work together to focus on curriculum coordination, integration, and collaboration around student needs, (2) Students report a more negative school
climate, (3) Student and teachers report more behavioral and psychological problems, and, (4) Student achievement lags.

Utilizing measures and methodologies in common with Feiner’s original studies, researchers from the Center for Prevention Research and Development (CPRD) at the University of Illinois have substantiated Felner’s results in their research on Michigan middle schools involved in the Middle Start initiative, once again an initiative designed to promote the implementation of developmentally-responsive practices recommended by *Turning Points* (Flowers, Mertens, and Mulhall, 2000, 1999). Michigan Middle Start schools with “moderate” and “high” levels of implementation saw greater increases in the average student scores in reading and mathematics on the Michigan Education Assessment Program (MEAP) than the increase in state average scores for the years studied. Moreover, the length of time a school had experienced the reforms and the degree to which the reforms were implemented are positively related to increases in MEAP scores (Flowers, et. al, 1999).

Flowers, et. al. (2000, 1999) have found middle schools that start with interdisciplinary teaming as their first reform priority tend to be more successful at implementing responsive instructional practices such as small-group instruction, heterogeneous grouping, integrated and interdisciplinary teaching, as well as increased student achievement and adjustment. In a synthesis of Flowers’ research Norton (2000) described their finding that the establishment of teaming structures as a first step in reform enables “. . .the deeper issues to manifest because the school has
already addressed the common issues of teachers working and planning together, establishing small communities for learning, and addressing individual student needs" (pg. K-7). Flowers, et.al. (2000) reported a strong positive correlation between the practice of teacher collaboration on the coordination of curriculum and student assignments and the use of responsive instructional practices such as small group active instruction, integration and interdisciplinary practices, mastery-based assessment, critical thinking enhancement practices, authentic instruction and assessment, and reading, writing, and mathematical reasoning skill enhancement practices (p. 54).

Flowers, et. al. (1999) also explored the relationship between the organizational features of teacher collaboration and the use of recommended and effective responsive instructional practices. Supporting Felner’s research, these researchers found that the effectiveness of teaming and the use of developmentally responsive instructional practices are impacted by the overall size of the group of students for which a particular group of teachers are responsible. Clear patterns of difference in the effect of group size on instructional practice were seen in groups of (a) 90 or less, (b) 91 to 120, and, (c) 121 or more, though the differences in effect between group size (b) and group size (c) were in most cases quite small.

Conclusions

The research cited above indicates the importance of implementing organizational practices in middle schools that support the development of small,
more personalized teaching and learning environments. When the conditions for these environments have been met, stronger relationships can result between students and teachers, and responsive instructional practices are more likely to be practiced by middle school teachers. In these studies, schools that were able to successfully implement the responsive organizational and instructional features described above saw improvement in student achievement scores as well as in student adjustment indicators.

This research strongly indicates the positive effect on student achievement and socio-emotional outcomes observed in middle schools that have implemented important responsive organizational and instructional practices. These studies provide persuasive evidence that developmentally responsive middle school programs can boost student achievement in comparison to schools that do not utilize such practices. Following the line of reasoning in this study, it would appear that the use of developmentally responsive programs/practices is actually effective for improving the academic achievement of middle school students above the levels typically obtained through less responsive, traditional programs. Indeed, a number of persons have concluded that U.S. middle school student achievement is suffering because middle school reform has stalled (Dickinson and Butler, 2001; Anfara, Jr., and Waks, 2000). If this is the case—that there is scant evidence of demonstrably effective responsive practices in U.S. schools—then the conclusion that we need more developmentally responsive programs may be supported.
Evidence of the Prevalence of Key Organizational and Instructional Responsive Practices

It is important to note that the findings of Felner, et. al. and Flowers, et. al. stem from longitudinal evaluations of a number of major initiatives to promote the broad based reforms recommended by the *Turning Points* report for the creation of developmentally responsive middle schools. Lee and Smith’s study (1993), virtually the only study that has provided national data on the impact of responsive organizational practices on middle grade student outcomes, also cites the *Turning Points* recommendations as a rationale for examining features thought to affect the development of “small communities for teaching and learning”. What Felner, et. al., and Flowers, et. al. have found (and were supported by Lee and Smith’s findings) is, that among all the different sorts of practices recommended and variously implemented by participating schools, certain practices or reforms have more impact on student outcomes than did others. These key practices serve as building blocks on which to mount additional recommended reforms (Flowers, et. al., 2000; Felner, et. al., 1997, p. 547). The key areas of practice identified by these researchers fall into two broad categories, organizational and instructional.

Evidence of Key Responsive Organizational Practices

The key organizational practices that impact student achievement identified by the researchers cited above were those that supported the development of “small communities for learning” (Carnegie Council, 1989). As quoted earlier, *Turning*
Points recommended, “Schools should be a place where close, trusting relationships with adults and peers create a climate for personal growth and intellectual development” (p. 37). The combination of factors that create these “small communities” are described in This We Believe (NMSA, 1995) under the recommendation of “flexible organizational structures”. As summarized earlier, NMSA recommended that large schools be broken into smaller “schools-within-schools” or “houses”, and that teachers and students be assigned together into small, interdisciplinary teams to promote more personalized relationships. Flowers, et. al. (2000) indicated that the most effective size of the total group of students for which a team of teachers is responsible is around 90, and ideally should not exceed 120. Furthermore, Felner, et.al. (1997) reported that the minimum average level of student/teacher ratio sufficient to positively affect student achievement in schools with interdisciplinary teacher teaming was 20-24 students per teacher. Above the ratio of 20-24 students, no effect on student achievement was seen from teacher teaming.

Based on a 1988 survey, MacIver and Epstein (1993) found that most middle school did not use structures such as houses, teams, or schools-within-schools. Using data from the same survey, Epstein (1990) reported that the average grade-level enrollment in 6-8 middle schools was 180 students, and for 7-8 middle schools, 249 students. No national-level study has cited grade-level enrollment data since this report. In their study of the results of a 1992 national survey of principals of middle grades schools, Valentine, et. al. (1993) stated that 42 percent of the principals
reported teacher/student ratios between 21-25; 33 percent reported ratios between 26-30. Only six percent of the principals reported higher ratios; 19 percent reported teacher/student ratios lower than 20.

Interpretation of the data available on “teaming” in U.S. middle schools is somewhat problematic due to differences in definitions used by major national-level studies. Interdisciplinary teaming, where a group of 4-5 teachers from each of the major disciplines collaborates to share instruction and responsibility for a common group of students, was originally proposed to counteract the negative impacts of the depersonalized, standardized delivery of instruction found in the highly departmentalized bureaucratic structure instruction associated with traditional junior and senior high schools (Carnegie Council, 1989; Lee and Smith, 1993). Schools that say they are “teaming” can have teams as small as two-three teachers of 60-70 students responsible for covering any configuration of academic subjects from 1 to all; or as large as 10-12 teachers of 240 students, depending on the school (Felner, et. al., 1997; Valentine, et. al., 1993). Valentine, et. al, (1993) found that 57 percent of the school respondents indicated they used interdisciplinary teaming in their school. However, in terms of how instruction is actually organized, U.S. middle school teachers still meet with students in a highly departmentalized structure: Using 1994 SASS data Alt and Choy (2000) found that “close to 80 percent” of middle school teachers reported departmentalized teaching, or teaching the same subject to several different groups of students in the same day (p. 11). In a 1992 survey, between 50 to
60 percent of the principals reported a "period by period departmentalized" organization of scheduling (Valentine, et. al., 1993, p. 66).

One of the goals of interdisciplinary teams is to enhance interpersonal connections between students and students to teachers by reducing the number of teachers and class "regroupings" (McEwin, et. al., 1996). Teachers are encouraged to limit the number of academic classes to which a student is assigned by integrating or connecting curriculum across subject areas (McEwin, et. al., 1996; Valentine, et. al., 1993). One way to examine whether a school has a reduced departmental structure is to determine whether students meet fewer than five academic teachers per day (Lee and Smith, 1993). Valentine, et. al. (1993) found that 49 percent of U.S. middle schools had a daily student schedule with seven periods; another 30 percent had eight or more class periods per day, indicating that close to 80 percent of U.S. middle school students are frequently regrouped and provided instruction in a highly bureaucratic manner.

What appears to be a critical element of the less-departmentalized, interdisciplinary team structure, in addition to the important factors of grouping, is the amount and quality of the teacher collaboration (Flowers, et. al., 1999, 2000; Felner, et. al., 1997). Higher levels of cross-disciplinary teacher collaboration and curriculum coordination are associated both with increases in the use of responsive instructional practices and improved student outcomes (Flowers, et. al. 1999; Felner, et. al., 1997). Increased levels of teacher collaboration are positively related to the amount of common planning time provided to a group of teachers (McEwen, 1996).
In their report on a 1993 national survey for NMSA, McEwen, Dickinson, and Jenkins (1996) found that 58 percent of 6-8 grade middle schools with interdisciplinary teams had a daily common planning period in addition to personal planning time, for a total of 22 percent overall. However, the provision of planning time does not guarantee benefits for students unless team efforts strongly emphasize the coordination of curriculum and student assignments (Flowers, et al., 2000).

Lee and Smith (1993) cautioned that the size of the school may impact educational equity, as larger schools tend to differentiate instruction more and stratify students by ability in their placement in classes. Ability grouping, or tracking, is not recommended by the NMSA, as it limits access to high quality learning opportunities for many students. Tracking and course-taking in high schools have been shown to be a more powerful predictor of academic achievement than family background (Oakes, 1985). Turning Points (1989) called tracking "one of the most divisive and damaging school practices in existence" (p. 49).

In NASSP's 1992 national survey, 82 percent of the respondents reported that some form of ability grouping was used to assign students to classes, down from 88 percent in 1981 (Valentine, et al., 1993). NMSA's 1993 national study reported that 68 percent of their respondents reported use of ability grouping for some or all of the classes in their schools (McEwen, et al., 1996). However, there is evidence that the practice of "random assignment" to basic academic classes increased from 25 percent to over 50 percent between 1988 and 1993, indicating that the practice of ability
grouping may be markedly decreasing across U.S. middle schools (McEwen, et. al., 1996).

Evidence of Key Responsive Instructional Practices

In 1993, MacIver and Epstein noted, “Currently, few middle grades schools have implemented many of the practices recommended for the education of early adolescents, and even fewer have implemented them well.” (1993, p. 530).

Mergendollar (1993) suggested that one reason middle school progress is slow is that reformers have tended to emphasize structural changes, which are relatively easy to make and create an appearance of significant change. However, he cautions, often these changes do little to change the central experience of students, or to cause fundamental change in the purposes, priorities, and functions of the school (p. 444).

Mergendollar reports that structural changes by themselves are too “distal” to directly affect student outcomes, advising that

“it is how teachers and administrators take advantage of the opportunities made available by structural changes that determines whether there is a productive effect on student’s learning and attitudes. Such changes are not trivial and require significant reorientation in the ways teachers and administrators understand and carry out their jobs. .” (1993, p. 444).

Educators’ perceptions are another issue that is seen to impact reform: One of the major authors of the Turning Points report, Andrew Jackson, reported “We are already doing that” is the very common response he has received from educators
about the report, though research indicates that very few of the recommendations are actually practiced in schools (cited by Clark and Clark, 1993, p. 455).

MacIver and Epstein (1993) found at the start of the 1990s, most middle grades classes emphasized passive learning, and drill and practice, basic skills, mathematical computation, and learning of historical facts. Use of active and interactive instructional approaches, such as cooperative learning groups, composing and editing, and technology in science or math was infrequent.

A 1993 NMSA survey (McEwen, et. al., 1996) asked nationally representative sample of middle school principals to estimate the levels of use of interdisciplinary instruction, and frequency of selected instructional strategies. Respondents from the vast majority (84%) of schools estimated that their schools use interdisciplinary instruction a minority (1-40%) of the time (p. 60). This study also reported that ninety percent of the middle schools reported they “regularly” employed direct instruction (teacher presentation, drill, practice, etc.) at extremely high levels. Cooperative learning (structured group work and reward for achievement) was used “regularly” by approximately one-half of the schools; inquiry teaching (gathering information, deriving conclusions) was found to be used “only occasionally” by approximately one-half of the schools, but used “regularly” by thirty-five percent. Finally, independent study (students working individually on selected or assigned tasks) was used by approximately one-half of the schools occasionally, and “rarely” by thirty percent. These findings indicate that direct instruction is by far the most common and most regularly used instructional strategy in U.S. middle schools.
In *Turning Points 2000* Jackson and Davis (2000), lead authors of the original 1989 *Turning Points* report, researched the results of the initiatives undertaken and reflected on the lessons learned in the decade since its publication. They found that structural changes in middle grades education have been fairly widespread, with good results. There is evidence that these structures are related to improved relationships within the school, and greater emotional well-being of students. However, they state, their observations suggest that relatively little has changed at the core of most middle school students’ educational experience: curriculum, assessment and instruction (Jackson and Davis, 2000, p. 5). Moreover, they state that it is also clear that changes in middle grades practice have changed least often in the communities that are most in need: In high-poverty urban and rural communities where poor student achievement is rampant, and up to half the students are unable to make a successful transition to high school (p. 6).

**Summary and Conclusions**

In this chapter, the literature related to current issues in middle school reform was reviewed. Middle grades educational reform issues and initiatives of the past 100 years were summarized, and an in-depth examination of the developmental characteristics and learning needs of young adolescents, as well as the related implications for instruction, was provided. Current research on the relationship between responsive organizational and instructional practices, and their relationship
to student outcomes was also summarized. Last, the most recent evidence on the level of adoption of these practices was described.

The purpose of this study was to uncover the extent to which U.S. middle school have adopted developmentally responsive organizational and instructional practices that have been associated with improved student achievement and psycho-social outcomes (Flowers, et. al, 2000; 1999; Felner, et. al., 1997; Lee and Smith, 1993). In the next chapter, the methodology, measures, and analytic strategies employed by this study will be described.
CHAPTER III

METHODOLOGY

The use of organizational and instructional practices that have been identified by researchers to have significant impact on student achievement in U.S. middle level grades were examined in this study. First, organizational dimensions that are identified components of the developmentally responsive practice of "small communities for teaching and learning" recommended by the *Turning Points* (1989) report were examined, in order to determine the extent and quality of this practice in U.S. middle level grades (Jackson & Davis, 2000; Flowers, et. al., 2000; Flowers, et. al., 1999; Felner, et. al., 1997). Second, instructional practices of U.S. middle grades teachers were examined in order to identify the extent and quality of the use of instructional practices that been identified as developmentally responsive to the learning needs of young adolescents (Manning, 1997; NMSA, 1995; Wigfield & Eccles, 1994; Oakes, et. al., 1993; Slavin, 1993; Carnegie Corporation, 1989), as well as the extent and quality of use of instructional practices that have been identified with more traditional and/or bureaucratic forms of early adolescent education (MacIver & Epstein, 1993; Oakes, et. al, 1993; Cuban, 1992; Becker, 1990). Third, an exploratory analysis was undertaken to determine whether a relationship exists between the use of developmentally responsive organizational and instructional practices, by a comparison of the use and quality of instructional practices in schools...
that have successfully organized to create small communities for teaching and learning, to those schools that have organized instruction in more traditional, bureaucratic ways.

This chapter includes a description of the research questions and the School and Staffing Survey (SASS) and Teacher Followup Survey (TFS), as well as a description of the participants, instrumentation, and data analysis for this study.

Research Questions

1. What are the levels/patterns of use of organizational practices that have been found by researchers to impact the development of "small learning communities"?

   1.1 Do the data indicate a predominant pattern of organizational practice, e.g., "developmentally responsive" and/or "traditional/bureaucratic"?

2. What are the levels/patterns of use of instructional practices that have been found by researchers to impact the engagement and learning of early adolescents?

   2.1 Do the data indicate a predominant pattern of instructional practices, e.g., "developmentally responsive" and/or "traditional/bureaucratic"?

3. Is there any evidence of a relationship between the organizational and the instructional practices used in middle schools?

   3.1 What does instructional practice look like in schools that have "high" levels/use of developmentally responsive organizational practices?
3.2 What does instructional practice look like in schools that have "low-no" levels/use of developmentally responsive organizational practices?

Description of the Schools and Staffing and Teacher Followup Surveys

The data for this study were extracted from the Schools and Staffing Survey (SASS), 1993-94, and the corresponding Teacher Followup Survey (TFS), 1994-95 conducted by the National Center for Education Statistics (NCES) of the U.S. Department of Education, and were collected and processed by the U.S. Bureau of the Census. The 1993-94 SASS and 1994-95 TFS are the third in a series of cross-sectional surveys, following ones in 1990-91/91-92 and 1987-88/88-89). Though the most recent SASS/TFS was conducted during the 1999-2000/2000-2001 school years, these data will not be available until the summer of 2002. Therefore, the 1993 SASS data are the most comprehensive nationally oriented data on teachers and schools currently available (Alt & Choy, 2000).

The 1993 SASS is a nationally representative survey that collected public- and private-sector data on the nation’s elementary and secondary schools, teachers, principals, and their school districts (Alt & Choy, 2000). Only data from the public sector was used in this study. The public school survey consisted of four sets of linked questionnaires, including surveys of schools, principals of the selected schools, a subsample of teachers within each school, and public school districts. Only data obtained from the teacher portion of the SASS was used in this study.
The TFS is a survey of K-12 school teachers who participated in the SASS, and is conducted in the school year following the SASS data collection (U.S. Department of Education, 1998). The TFS provides data on teacher attrition rates, characteristics of those who stay in the teaching profession and those who leave, occupations or other activities for those who leave teaching and career information for those who are still teaching, and attitudes about the teaching profession and job satisfaction (Alt & Choy, 2000). This study utilized data extracted from Section IV - Teaching Methods of the 1994-95 TFS.

Participants

Data on organizational practices of survey participants’ schools were collected by the SASS, while data on the use of specific instructional practices were collected by the TFS, which is drawn from a subsample of SASS participants. Since this study was in part designed to identify whether a relationship exists between use of organizational and instructional practices, it was necessary to use data obtained from teachers who participated in both surveys. Therefore, the sample for this study was identified from those teachers who participated in the 1994-95 TFS.

Sampling Procedures

The target population for the 1994-95 TFS was the universe of K-12 school teachers who taught in schools that had a first grade and/or higher in the United States during the 1993-94 school year. The 1994-95 TFS is a survey of approximately 7,200
teachers interviewed in the 1993-94 SASS Teacher Survey. In SASS, schools were selected first in a nationally representative, stratified random sampling design based on the 1991-92 Common Core of Data (CCD), which is collected annually by the NCES and is believed to be the most complete public school listing available (U.S. Department of Education, 1998). Next, teachers were selected within each sampled school. The TFS teachers were selected from the SASS teacher sample. The TFS sample is a stratified sample that was allocated to allow comparisons of career status (movers, stayers, and leavers within public/private sector), teachers with different amounts of experience, and grade levels taught (Alt & Choy, 2000).

Within each public TFS stratum, teachers who responded to the 1993-94 SASS Teacher Survey were sorted by teachers’ main assignment field, census region, urbanicity, school enrollment, and SASS teacher control number. After they were sorted, teachers were selected within each stratum using a probability proportional to size sampling procedure (U.S. Department of Education, 1998). The measure of size was the 1993-94 SASS intermediate teacher weight, which is a product of the Basic Weight, Sampling Adjustment Factor, School Nonresponse Factor, Teacher Noninterview Factor, and the First-Stage Ratio Adjustment Factor, as described in the following section.

For the purposes of this study, the responses of TFS participants who identified themselves as full-time, “regular” (do not teach elementary enrichment classes or pull-out classes) teachers of students in grades 6-8 were selected. Due to the format of the TFS, it was necessary to include only the responses of full-time
teachers in order to accurately determine departmentalization and student load figures. The responses of teachers of elementary enrichment and pull-out classes were not used, as these teaching assignments often involve class sizes well above or below that of typical school classrooms (Alt and Choy, 2000).

Weighting

The general purpose of weighting is to produce representative estimates from the sample data. The process includes adjustment for nonresponse using respondents' data, and adjustment of the sample totals to the frame totals to reduce sampling variability (U.S. Department of Education, 1996a). The TFS teacher sample weights were derived from the SASS Teacher Weights.

The SASS teacher basic weight is the inverse of the probability of selection of the teacher. Teacher basic weights were adjusted to account for schools that refused to provide lists of teachers (the school nonresponse adjustment factor), and for teachers who were selected for the survey but did not provide questionnaire data (teacher noninterview factor). In addition the school sampling adjustment factor (to account for duplicate records, merged schools, or any other circumstance that would affect the school’s true probability of selection), and the first-stage ratio adjustment factor (which adjusts the sample weighted count of all cases to known frame totals based on the 1991-92 CCD) were also applied to produce the final weight (U.S Department of Education, 1996a, p. 20).
The final TFS sample weight is the product of (1) the TFS basic weight (itself the product of the intermediate SASS teacher weight and a TFS subsampling adjustment factor), (2) the SASS weighting adjustment factor (which adjusts for any changes that may have occurred between the preliminary and final weighting calculations), (3) the TFS noninterview adjustment factor (to account for SASS teachers who did not participate in TFS), and (4) the TFS ratio adjustment factor, which ensures that the weighted number of TFS teachers will equal the weighted number of SASS teachers (U.S. Department of Education, 1996a, p. 21).

Response Rate

According to Babbie (1990), response rates are one guide to the representativeness of the sample respondents. Though a response rate of at least 50 percent is generally regarded adequate for analysis and reporting, a response rate of 70 percent or greater is considered “very good” (p. 182). Table 1, below, has been adapted from the 1994-95 TFS Data File User’s Manual Public-use Version (NCES, 1998), and summarizes the weighted and unweighted response rates for the 1993-94 Schools and Staffing Teacher Survey and 1994-95 Teacher Followup Survey.
Table 1

Unweighted and Weighted Response Rates for the 1993-94 Schools and Staffing Teacher Survey and 1994-95 Teacher Followup Survey

<table>
<thead>
<tr>
<th>Components</th>
<th>Unweighted</th>
<th>Weighted</th>
</tr>
</thead>
<tbody>
<tr>
<td>SASS Teacher Survey response rate</td>
<td>88.9</td>
<td>88.2</td>
</tr>
<tr>
<td>Teacher Followup Survey response rate (Current teachers)</td>
<td>90.9</td>
<td>92.5</td>
</tr>
</tbody>
</table>

The unweighted questionnaire response rate is defined as the number of in-scope (eligible for interview) responding questionnaires divided by the number of in-scope cases. The weighted questionnaire response rates are defined the same way, using the basic weighted (inverse of the probability of selection) instead of unweighted numbers (NCES, 1996). The cumulative overall response rate is the product of the SASS Teacher Survey response rate, the TFS Teacher response rate, and the SASS Teacher List response rate (NCES, 1998). A cumulative overall response rate of 80.0 was calculated for the 1994-95 TFS (Public current teachers).

Instrumentation

The Schools and Staffing Survey and Teacher Followup Survey are mail surveys conducted by the U.S. Bureau of the Census for the National Center for Education Statistics (NCES), and are the most complete national survey in the history
of American education (U.S. Department of Education, 1994). The surveys are in the public domain and may be obtained through the U.S. Department of Education. The overall objective of the SASS is to collect information necessary for a complete picture of American K-12 education. The abundance of data collected permits detailed analyses of the characteristics of schools, principals, teachers, and students. The linkage of the SASS components enable researchers to examine relationships between these elements of education (U.S. Department of Education, 1996b).

Organizational Practice

This study utilized data obtained from Section D – Current Teaching Load regarding the organization and grouping of students for teaching and learning assessed by the 1993-94 SASS Teacher Survey, in order to examine U.S. middle grades organizational practices. The following dimensions that were identified as components of the developmentally responsive organizational practice of “small communities for teaching and learning” were examined: (a) Instructional (or, class) organization (type of organizational structure used to group students to teachers), (b) Student load (total number of students met daily), (c) Teacher/student ratio (or, average class size), (d) Curricular coordination (the amount of effort undertaken in the coordination of curriculum with other teachers), and (e) Ability grouping (use of homogenous or heterogeneous grouping practices).
Instructional Practice

Among the major objectives of the TFS is to collect data from a subsample of SASS teachers on their instructional practice and attitudes about the teaching profession. Data drawn from Section IV – Teaching Methods of the 1994-95 TFS for Current Teachers were used to identify instructional practices, assessment strategies, and organizational techniques used by U.S. middle grade teachers. Table 2, below, describes the items on teaching methods on which responses were analyzed.

Table 2
Selected Instructional Practices Employed by U.S. Middle Grades Teachers, As Reported on the 1994-95 TFS

<table>
<thead>
<tr>
<th>Practice</th>
<th>TFS Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Developmentally Responsive Practices</td>
<td></td>
</tr>
<tr>
<td>a. Use of hands-on materials</td>
<td>TFS 248</td>
</tr>
<tr>
<td>b. Use of supplementary reading materials</td>
<td>TFS 253</td>
</tr>
<tr>
<td>c. Student-led discussion</td>
<td>TFS 254</td>
</tr>
<tr>
<td>d. Open-ended oral response</td>
<td>TFS 255</td>
</tr>
<tr>
<td>e. Individual project/presentation</td>
<td>TFS 258</td>
</tr>
<tr>
<td>f. Cooperative group work for individual grade</td>
<td>TFS 263</td>
</tr>
<tr>
<td>g. Cooperative group work for group grade</td>
<td>TFS 265</td>
</tr>
<tr>
<td>h. Student self-assess through conferring with other students</td>
<td>TFS 268</td>
</tr>
</tbody>
</table>
Table 1 -- Continued

<table>
<thead>
<tr>
<th>Practice</th>
<th>TFS Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>i. Journaling</td>
<td>TFS 276</td>
</tr>
<tr>
<td>j. Project-based learning: Data collection, experiments</td>
<td>TFS 283</td>
</tr>
<tr>
<td>k. Evaluation/assessment based on student effort</td>
<td>TFS 302</td>
</tr>
<tr>
<td>l. Evaluation/assessment based on individual student improvement</td>
<td>TFS 303</td>
</tr>
<tr>
<td>m. Evaluation/assessment based on open-ended responses on tests</td>
<td>TFS 310</td>
</tr>
<tr>
<td>n. Use of student portfolios</td>
<td>TFS 325</td>
</tr>
<tr>
<td>2. Traditional/Bureaucratic Practices</td>
<td></td>
</tr>
<tr>
<td>a. Whole group instruction</td>
<td>TFS 233</td>
</tr>
<tr>
<td>b. Lecture</td>
<td>TFS 238</td>
</tr>
<tr>
<td>c. Oral response/recall</td>
<td>TFS 244</td>
</tr>
<tr>
<td>d. Students listen/observe teacher presentation</td>
<td>TFS 247</td>
</tr>
<tr>
<td>e. Routine practice in workbook/worksheet</td>
<td>TFS 249</td>
</tr>
<tr>
<td>f. Use of textbook</td>
<td>TFS 250</td>
</tr>
<tr>
<td>g. Teacher-led discussion</td>
<td>TFS 251</td>
</tr>
<tr>
<td>h. Homework with routine exercises on worksheet or textbook</td>
<td>TFS 282</td>
</tr>
<tr>
<td>i. Evaluation/assessment based on absolute level of achievement</td>
<td>TFS 304</td>
</tr>
<tr>
<td>j. Evaluation/assessment based on achievement relative to class</td>
<td>TFS 305</td>
</tr>
<tr>
<td>k. Evaluation/assessment based on multiple choice, T/F tests</td>
<td>TFS 311</td>
</tr>
</tbody>
</table>
Analysis

Research Question 1: What are the levels/patterns of use of organizational practices that have been found by researchers to impact the development of "small learning communities"?

Instructional Organization

This study determined the proportion of middle grades teachers that teach in the following instructional organizational patterns: Self-contained, team teaching, semi-departmentalized (less than 5 student class sections daily), or fully departmentalized (5 or more class sections daily). Semi-departmentalized and team teaching arrangements have been found to be most developmentally responsive to middle school students, while still maintaining much of the subject specialization advantages of departmentalized instruction (Flowers, et. al., 1999, 2000; Felner, et. al., 1997; Lee and Smith, 1993; Clark and Clark, 1993; Mac Iver and Epstein, 1993). Frequency distributions were run on each of these dimensions in order to determine the proportion of U.S. middle grades teachers who teach in each of the different instructional organization patterns.

Student Load

Student load, or the total number of students for which a teacher or team of teachers is responsible, has been shown to related to the development of "small learning communities" that are correlated with improved student achievement (Flowers, et. al., 1999, 2000; Felner, et. al., 1997; Lee and Smith, 1993). Frequency
distributions were run on this dimension in order to determine the range of the size of total student loads assigned to U.S. middle grades teachers. Frequency distributions on this dimension, sorted by instructional organization were also run to examine the range of total student load size assigned in different instructional organization patterns. Finally, responses were sorted into the following categories that describe the relative size of the respondents' student load: “Low” (lower than 90 students), “medium” (90 to 120 students), and “high” (more than 120 students).

**Teacher/Student Ratio**

What this study refers to as “teacher/student ratio” is perhaps more clearly described as the average number of students assigned to a teacher per class. For self-contained (one teacher responsible for teaching multiple subjects to one class grouping of students) and team teachers (teachers that share one class grouping of students, co-teaching multiple subjects), this figure was also analogous to the response reported for the student load variable described above. For teachers who report teaching in semi- or fully departmentalized settings (teaching the same subject to several different student class groupings daily), this variable was determined by dividing the reported daily student load figure for each teacher by the number of daily class sections taught. Next, frequency distributions for the national sample, and each of the four subsamples based on instructional organization were computed to examine national practices of teacher/student grouping size under each instructional organization pattern. Finally, responses were sorted into the following categories that
describe the relative size of the respondents’ teacher/student ratio: “Low” (lower 20 students), “medium” (20 to 25 students), and “high” (more than 25 students).

Curricular Coordination

Teachers were asked by the survey to report how closely they agreed the following statement described their practice: “I make a conscious effort to coordinate the content of my courses with that of other teachers”. Four levels of agreement from “Strongly disagree” to “Strongly agree” were provided. Increased coordination of curriculum and instruction between teachers have been found to be related to improved student achievement in schools that have successfully created smaller communities of learning (DePascale, 1997; Felner, et. al., 1997; Flowers, et.al., 1999, 2000). First, frequency distributions for the national sample, and each of the four subsamples based on instructional organization were computed to examine national practices of curricular collaboration among teachers under each instructional organization pattern.

Second, responses were sorted into ordinal categories that describe respondents’ relative reported effort in curricular coordination. The responses of teachers who responded they disagreed or disagreed strongly with the item statement will be placed in the “low/no” practice category; responses of teachers who reported they “agreed” will be placed into the “moderate” category, and the response of those who report they “strongly agreed” with the item were placed in the “high” category.
Ability Grouping

Ability grouping and tracking have been called “the most divisive and damaging school practices in existence” (Carnegie Council, 1989). A number of researchers have found that tracking and course taking are among the most powerful predictors of student achievement, greater than even family background (Oakes, 1985; Slavin, 1988; Carnegie Council, 1989). Among the features of middle school models based on the Turning Points recommendations is the provision of a common, high quality curriculum to all students, primarily through heterogeneous student grouping as a school organizational policy and practice. The reduction or elimination of ability grouping has been found to be related to improved student achievement among disadvantaged students, while having no impact on the achievement of more talented or advantaged students (Lee and Smith, 1993; Slavin, 1988). Alternative practices, such as smaller student groupings, lower total student load, and more active and responsive curricula and instructional practices have been recommended to promote student learning in heterogeneously-grouped classes (Carnegie Council, 1989; NMSA, 1995).

SASS respondents were asked to designate one “typical” class to describe their teaching practices, and were asked to report which of many types of ability grouping characterized their class. Respondents were allowed to report more than one description. Among the choices were: Homogeneous, heterogeneous, college-prep, remedial, gifted, honors, bilingual, special education. It was determined that every choice, apart from “heterogeneous” in fact described a form of ability grouping.
Therefore, for the purposes of this study, responses were divided into two categories: All those who reported "heterogeneous" grouping (labeled "heterogeneous"), and those who did not select "heterogeneous" and selected one or more of the other responses. Frequency distributions for the national sample, and each of the four subsamples based on instructional organization were computed to examine national practices of ability grouping, as well as those under each instructional organization pattern.

Organizational Practice Levels

Based on the pattern of responses recorded for each of the variables above, cases were sorted into three categories of organizational practice: "Developmentally responsive", "mixed", and "traditional/bureaucratic". Table 3, below, describes the criteria by which responses were characterized into each of the patterns. In order to be classified as "developmentally responsive", cases had to have reported the identified levels of practice in each of the five identified practices that were selected to describe the presence of "small learning communities". A similar process of identification, based on levels of practice in each of the five component practices was used to identify cases as "traditional/bureaucratic". Last, any school that does not meet the criteria for either pattern of practice was identified as "mixed".
Table 3

Scoring Criteria for the Identification of Organizational Practice Patterns

<table>
<thead>
<tr>
<th>Organizational Practice</th>
<th>Developmentally Responsive</th>
<th>Mixed*</th>
<th>Traditional/ Bureaucratic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instructional Organization</td>
<td>Self-contained, Team Teaching Semi-departmentalized</td>
<td>Fully Departmentalized</td>
<td></td>
</tr>
<tr>
<td>Student Load</td>
<td>Low (x&lt;90) Med (90-120)</td>
<td>High (x&gt;120)</td>
<td></td>
</tr>
<tr>
<td>Teacher/Student Ratio</td>
<td>Low (x&lt;20) Med (20-25)</td>
<td>High (x&gt;25)</td>
<td></td>
</tr>
<tr>
<td>Curricular Coordination</td>
<td>High (Strongly Agree)</td>
<td>Low/no(Disagree/Strong. Disagree)</td>
<td></td>
</tr>
<tr>
<td>Ability Grouping</td>
<td>Heterogeneous</td>
<td>Homogeneous/ Other</td>
<td></td>
</tr>
</tbody>
</table>

* Mixed = any case that does not fit the criteria for “Developmentally Responsive” or “Traditional/Bureaucratic” pattern, as defined above.

Instructional Practice Levels

In Section IV – Teaching Methods of the 1994-95 TFS for Current Teachers respondents were requested to report the quality of their use of a wide variety of instructional practices, student assessment strategies, and organizational techniques.
A number of the teaching behaviors assessed by the survey have been identified by researchers and/or middle school advocates as those that impact the engagement and learning of early adolescents either positively or negatively. These instructional practices were described in detail in the preceding chapter of this report. A number of instructional practices have been specifically identified in this study as more developmentally responsive to the learning needs of young adolescents, while others were identified as those used in more traditional and/or bureaucratically organized middle-level schools, not associated with successful middle school teaching and learning practices. TFS survey items were studied in order to identify those that provided information on teaching practices relevant to this study. The items and/or behaviors selected for this study and their designation as "developmentally responsive" or "traditional/bureaucratic" are shown on Table 1, above. The descriptive analyses of the national use of these practices computed means to determine the level of use of each practice among U.S. middle level teachers.

**Instructional Practice Patterns of Use**

Mean levels of use for each selected instructional practice were computed to compare the relative level of use of each practice among U.S. middle level teachers. The mean levels of practices identified as "developmentally responsive" were compared to those of practices labeled "traditional/bureaucratic" in order to determine the primary nature of the teaching practices engaged in by U.S. middle level teachers.

**Relationship Between Organizational and Instructional Practice**
Frequency distributions on instructional practices, sorted by organizational practice pattern, were run to compare the nature of the use of teaching practices among teachers between teachers who teach in schools characterized by the two primary organizational practice patterns identified by this study. Specifically the instructional practices of teachers in schools characterized by a developmentally responsive pattern of organizational practice were compared to the practices of those who teach in schools organized in a traditional/bureaucratic pattern. Finally, one-way ANOVAs were computed for each instructional practice by organizational practice pattern to see whether differences in teacher instructional practice in the two different organizational practice patterns, if any, were significant.
CHAPTER IV

RESULTS

Introduction

The purpose of this study is to explore the evidence of the adoption by U.S. middle schools during the 1990s of key developmentally responsive organizational and instructional practices recommended by the influential *Turning Points* (1989) report. Three primary questions are examined: (1) To what extent have the organizational practices identified by research to impact the development of “small learning communities” been adopted by U.S. middle schools? (2) To what extent do the instructional practices of U.S. middle school teachers reflect developmentally responsive or traditional/bureaucratic methods?, and (3) Do the instructional practices of U.S. middle school teachers differ between those who teach in schools with developmentally responsive organizational practices and those who teach in schools with more traditional/bureaucratic organizational practices? In this chapter, the findings of and the processes undertaken for the statistical analyses are described. First, a description of the procedures employed to extract a sample for the study are provided. Second, the procedures employed for the examination of and findings for each primary research question and sub-question are reported in order. Last, a brief summary of findings is provided.
Sampling

National data gathered by the National Center for Education Statistics through the 1993-94 Schools and Staffing Survey (SASS) were extracted for this study. Data on organizational practices of survey participants' schools were collected by the SASS, while data on the use of specific instructional practices were collected by the Teacher Followup Survey (TFS), which is drawn from a subsample of SASS participants. Since this study is in part designed to identify whether a relationship exists between use of organizational and instructional practices, it was necessary to use data obtained from teachers who participated in both surveys. Approximately ten percent of the participants of the SASS are selected to participate in the Teacher Followup Survey.

For the purposes of this study, the responses of TFS participants who identified themselves as full-time, "regular" (do not teach elementary enrichment classes or pull-out classes) teachers of students in grades 6-8 were selected. Due to the format of the TFS, it was necessary to include only the responses of full-time teachers in order to accurately determine departmentalization and student load figures. The responses of teachers of elementary enrichment, arts, physical education, vocational, and "pull-out" classes were not used, as these teaching assignments often involve class sizes well above or below that of typical school classrooms (Alt and Choy, 2000). In addition, it was believed that the use of teaching methodologies not traditionally employed in "academic" classrooms were more common among teachers of these subjects, and could possibly distort the
interpretation of the findings on instructional practices. A final sample of 423 fulltime sixth, seventh, and eighth grade teachers of core academic subjects was derived from respondents to the 1994-95 Teacher Followup Survey. Except where noted, statistical analyses were run using the TFS final sample weights in order to maintain the nationally representative, stratified random sampling design of the original sampling structure.

Research Question 1

1. What are the levels/patterns of use of organizational practices that have been found by researchers to impact the development of “small learning communities”?

Five organizational practices were identified from the literature to impact the development of “small learning communities”: (1) The organization of instruction, or how classes are organized and instruction allocated (“class organization”), (2) The total number of students for which a teacher is responsible to instruct and evaluate (“total student load”), (3) The size of the classes taught (“average class size”), (4) The amount of collaboration and coordination between teachers on the content of instruction (“curricular coordination”), and, (5) The nature of student assignment to class/instruction (“ability grouping”). The description of the procedures employed for the examination of and findings for each organizational practice is reported in order below.
Instructional (Class) Organization

This study examined the proportion of middle grades teachers who teach in the following instructional organizational patterns: Self-contained, team teaching, semi-departmentalized (less than 5 student class sections daily), or fully departmentalized (5 or more class sections daily). Semi-departmentalized and team teaching arrangements have been found to be most developmentally responsive to middle school students, while still maintaining much of the subject specialization advantages of departmentalized instruction (Flowers, et. al., 1999, 2000; Felner, et. al., 1997; Lee and Smith, 1993; Clark and Clark, 1993; Mac Iver and Epstein, 1993). Frequency distributions were run on each of these dimensions in order to determine the proportion of U.S. middle grades teachers who teach in each of the different instructional organization patterns.

Table 4
Instructional Organization Patterns in U.S. Middle Schools

<table>
<thead>
<tr>
<th>Instructional Organization</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-contained</td>
<td>16.4</td>
</tr>
<tr>
<td>Team teaching</td>
<td>12.2</td>
</tr>
<tr>
<td>Semi-departmentalized (x &lt; 5 student sections)</td>
<td>10.5</td>
</tr>
<tr>
<td>*Fully departmentalized (x ≥ 5 student sections)</td>
<td>60.9</td>
</tr>
</tbody>
</table>
### Table 4 -- Continued

<table>
<thead>
<tr>
<th>Instructional Organization</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Fully departmentalized breakdown</td>
<td></td>
</tr>
<tr>
<td>5 student sections</td>
<td>29.4</td>
</tr>
<tr>
<td>6 student sections</td>
<td>25.6</td>
</tr>
<tr>
<td>7 or more student sections</td>
<td>5.9</td>
</tr>
</tbody>
</table>

**Student Load**

Student load, or the total number of students for which a teacher or team of teachers is responsible, has been shown to related to the development of “small learning communities” that are associated with improved student achievement (Flowers, et. al., 1999, 2000; Felner, et. al., 1997; Lee and Smith, 1993). Frequency distributions were run on this dimension in order to determine the range of the size of total student loads assigned to U.S. middle grades teachers, as seen on Table 5 below.
Table 5
Size of Student Load Assigned to U.S. Middle School Teachers

<table>
<thead>
<tr>
<th>No. of students</th>
<th>Percent teachers</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-29</td>
<td>13.6</td>
<td>13.6</td>
</tr>
<tr>
<td>30-59</td>
<td>10.5</td>
<td>26.7</td>
</tr>
<tr>
<td>60-89</td>
<td>6.7</td>
<td>33.4</td>
</tr>
<tr>
<td>90-119</td>
<td>21.1</td>
<td>54.5</td>
</tr>
<tr>
<td>120-139</td>
<td>18.3</td>
<td>72.8</td>
</tr>
<tr>
<td>140-159</td>
<td>13.9</td>
<td>86.7</td>
</tr>
<tr>
<td>160-179</td>
<td>7.5</td>
<td>94.2</td>
</tr>
<tr>
<td>180+</td>
<td>5.8</td>
<td>100.0</td>
</tr>
</tbody>
</table>

The mean total number of students assigned to U.S. middle school teachers was 107. The median, or the number of assigned students at which one half of U.S. middle school teachers taught more and one half taught less, was 115 students.

Frequency distributions on this dimension, sorted by instructional organization, were also run to examine the range of total student load size assigned in different instructional organization patterns. Finally, responses were sorted into the following categories that describe the relative size of the respondents’ student load: “low” (lower than 90 students), “moderate” (90 to 120 students), and “high” (more
than 120 students), in order to reflect the levels of effect found by Felner, et. al. (1997) and Flowers, et. al. (2000, 1999). These findings are described on Table 6 below.

Table 6
The Relative Student Load Assigned to U.S. Middle School Teachers, According to Instructional Organization Pattern

<table>
<thead>
<tr>
<th>Instructional Organization Level</th>
<th>Low (x &lt; 90)</th>
<th>Moderate (90-120)</th>
<th>High (x &gt; 120)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-contained</td>
<td>% within level</td>
<td>99.2</td>
<td>.8</td>
</tr>
<tr>
<td></td>
<td>% within total</td>
<td>16.4</td>
<td>.1</td>
</tr>
<tr>
<td>Team teaching</td>
<td>% within level</td>
<td>85.5</td>
<td>2.7</td>
</tr>
<tr>
<td></td>
<td>% within total</td>
<td>10.5</td>
<td>.3</td>
</tr>
<tr>
<td>Semi-departmentalized</td>
<td>% within level</td>
<td>27.7</td>
<td>60.7</td>
</tr>
<tr>
<td></td>
<td>% within total</td>
<td>2.9</td>
<td>6.4</td>
</tr>
<tr>
<td>Fully-departmentalized</td>
<td>% within level</td>
<td>6.3</td>
<td>27.2</td>
</tr>
<tr>
<td></td>
<td>% within total</td>
<td>3.8</td>
<td>16.5</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>33.6</td>
<td>23.2</td>
</tr>
</tbody>
</table>
Teacher/Student Ratio (Average class size)

What this study refers to as "teacher/student ratio" is perhaps more clearly described as the average number of students assigned to a teacher per class. For self-contained (one teacher responsible for teaching multiple subjects to one class grouping of students) and team teachers (teachers that share one class grouping of students, co-teaching multiple subjects), it was believed that this figure would be analogous to the response reported for the student load variable described above. However, after examination of the range of the total number of assigned students reported by team teachers, it is clear that the category of "team teaching" was unclear to respondents. As defined by the survey authors, team teachers were asked to identify the total number of students taught, as were self-contained teachers, yet were not asked to identify the number of student sections taught, or otherwise indicate the overall number of teachers comprising a team. Therefore, while fifty seven percent of team teachers reported teaching 20-50 students (assumed by the survey directions to indicate two teachers assigned to a team), approximately twenty four percent reported teaching 51-80 students, eight percent reported teaching 83-139 students, and approximately eleven percent reported 140 or more students. Therefore, it was assumed that these teachers shared the responsibility of teaching these students with an unknown number of other teachers. For that reason, the average class size figure for team teachers was estimated by the researcher in the following manner: First, the mean class size was computed for self-contained, semi-departmentalized (3-4 sections), and fully departmentalized (5 or more sections) teachers. Team teachers'
average class size was estimated by matching number of total students reported to the range of students reported by self-contained, semi-departmentalized, and fully departmentalized teachers, and entering the mean class size found for the comparable group. Because the proportion of team teachers who reported large student loads was a relatively negligible amount of the total sample, it was felt this estimation would have minimal impact on the overall outcomes of the statistical analyses.

For teachers who report teaching in semi- or fully departmentalized settings (teaching the same subject to several different student class groupings daily), this variable was determined by dividing the reported daily student load figure for each teacher by the number of daily class sections taught.

Next, frequency distributions for the national sample, and each of the four subsamples based on instructional organization were computed to examine national practices of teacher/student grouping size under each instructional organization pattern. Table 7, below, summarizes the mean class size for the total sample:
Table 7

Summary of Mean Class Sizes of U.S. Middle School Teachers

<table>
<thead>
<tr>
<th>Range of mean class size</th>
<th>Percent of Teachers</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-15</td>
<td>6.8</td>
<td>6.8</td>
</tr>
<tr>
<td>16-20</td>
<td>8.3</td>
<td>15.1</td>
</tr>
<tr>
<td>21-25</td>
<td>42.8</td>
<td>57.9</td>
</tr>
<tr>
<td>26-30</td>
<td>30.9</td>
<td>88.8</td>
</tr>
<tr>
<td>31-35</td>
<td>11.2</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Finally, responses were sorted into the following categories that describe the relative size of the respondents’ teacher/student ratio: “Low” (lower 20 students), “moderate” (20 to 25 students), and “high” (more than 25 students), to reflect the levels of effect found in the literature. These figures are reported on Table 8.

Curricular Coordination

Teachers were asked by the survey to report how closely they agreed the following statement described their practice: “I make a conscious effort to coordinate the content of my courses with that of other teachers”. Four levels of agreement from “Strongly disagree” to “Strongly agree” were provided. Increased coordination of curriculum and instruction between teachers have been found to be related to improved student achievement in schools that have successfully created smaller
Table 8

Relative Levels of Average Class Size According to Instructional Organization Pattern

<table>
<thead>
<tr>
<th>Instructional Organization Level</th>
<th>Low ((x &lt; 20))</th>
<th>Moderate ((20-25))</th>
<th>High ((x &gt; 25))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-contained</td>
<td>% within level</td>
<td>15.9</td>
<td>39.2</td>
</tr>
<tr>
<td></td>
<td>% within total</td>
<td>2.6</td>
<td>6.4</td>
</tr>
<tr>
<td>Team teaching</td>
<td>% within level</td>
<td>74</td>
<td>26</td>
</tr>
<tr>
<td></td>
<td>% within total</td>
<td>9.0</td>
<td>3.2</td>
</tr>
<tr>
<td>Semi-departmentalized</td>
<td>% within level</td>
<td>14.5</td>
<td>29.9</td>
</tr>
<tr>
<td></td>
<td>% within total</td>
<td>1.5</td>
<td>3.1</td>
</tr>
<tr>
<td>Fully-departmentalized</td>
<td>% within level</td>
<td>18.0</td>
<td>49.3</td>
</tr>
<tr>
<td></td>
<td>% within total</td>
<td>11.0</td>
<td>30.1</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>15.1</td>
<td>48.6</td>
</tr>
</tbody>
</table>

communities of learning (DePascale, 1997; Felner, et. al., 1997; Flowers, et.al., 1999, 2000). The increased coordination or collaboration between teachers on the content
of instruction is assumed to be the key to the effective provision of developmentally responsive, yet academically specialized instruction at the middle school level (Anfara and Waks, Jr., 2000; Flowers, et. al., 1999, 2000; Clark and Clark, 1993).

First, frequency distributions for the national sample were computed. Second, responses were sorted into ordinal categories that describe respondents' relative reported effort in curricular coordination. The responses of teachers who responded they disagreed or disagreed strongly with the item statement were placed in the "low/no" practice category; responses of teachers who reported they "agreed" were placed into the "moderate" category, and the response of those who report they "strongly agreed" with the item were placed in the "high" category. These results were then crosstabulated with each of the four subsamples based on instructional organization in order to examine national practices of curricular collaboration among teachers under each instructional organization pattern. These data are shown below on Table 9:
Table 9
Relative Effort Made by U.S. Middle School Teachers to Coordinate Curriculum With Other Middle School Teachers According to Instructional Organization Pattern

<table>
<thead>
<tr>
<th>Instructional Organization Level</th>
<th>Relative Effort to Coordinate Curriculum</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low/No</td>
</tr>
<tr>
<td>Self-contained</td>
<td></td>
</tr>
<tr>
<td>% within level</td>
<td>22.9</td>
</tr>
<tr>
<td>% within total</td>
<td>3.7</td>
</tr>
<tr>
<td>Team teaching</td>
<td></td>
</tr>
<tr>
<td>% within level</td>
<td>2.3</td>
</tr>
<tr>
<td>% within total</td>
<td>.3</td>
</tr>
<tr>
<td>Semi-departmentalized (3-4 sections)</td>
<td></td>
</tr>
<tr>
<td>% within level</td>
<td>17.6</td>
</tr>
<tr>
<td>% within total</td>
<td>1.8</td>
</tr>
<tr>
<td>Fully-departmentalized (5+ sections)</td>
<td></td>
</tr>
<tr>
<td>% within level</td>
<td>21.0</td>
</tr>
<tr>
<td>% within total</td>
<td>12.8</td>
</tr>
<tr>
<td>Total sample</td>
<td>18.7</td>
</tr>
</tbody>
</table>

Team teachers were notably the most likely to report high effort at curriculum coordination with other teachers; self-contained teachers reported
the least amount. Semi-departmentalized teachers reported the next highest level of curriculum coordination effort.

In order to explore additional relationships that might be associated with the amount of effort to coordinate curriculum by teachers and other organizational practices, the findings of this variable were also crosstabulated with the relative categories of total student load and average class size. These findings are shown respectively on Tables 10 and 11.

**Table 10**

Relative Effort Made by U.S. Middle School Teachers to Coordinate Curriculum With Other Middle School Teachers According to Relative Student Load

<table>
<thead>
<tr>
<th>Relative Student Load Level</th>
<th>Low/No % within level</th>
<th>Moderate % within level</th>
<th>High % within level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low (x &lt; 90 students)</td>
<td>38.3</td>
<td>34.4</td>
<td>21.1</td>
</tr>
<tr>
<td></td>
<td>12.8</td>
<td>16.4</td>
<td>4.3</td>
</tr>
<tr>
<td>Moderate (90 – 120 students)</td>
<td>23.9</td>
<td>21.9</td>
<td>43.6</td>
</tr>
<tr>
<td></td>
<td>16.4</td>
<td>10.5</td>
<td>20.8</td>
</tr>
<tr>
<td>High (x ≥ 120 students)</td>
<td>17.6</td>
<td>43.1</td>
<td>39.3</td>
</tr>
<tr>
<td></td>
<td>1.8</td>
<td>4.5</td>
<td>4.1</td>
</tr>
</tbody>
</table>
Table 10 indicates that teachers with a relatively low total student load are notably less likely to report high levels of effort to coordinate curriculum with other teachers. However, these findings jibe with the findings from this study that self-contained teachers, though assigned the smallest total student loads, tend to have some of the highest average class sizes, both factors (self-contained class organization and higher average class sizes, as described below) that appear associated with lower levels of curricular coordination effort.

Table 11

Relative Effort Made by U.S. Middle School Teachers to Coordinate Curriculum According to Relative Average Class Size

<table>
<thead>
<tr>
<th>Relative Ave. Size</th>
<th>Low/No</th>
<th>Moderate</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low (x &lt; 20 students)</td>
<td>% within level</td>
<td>14.5</td>
<td>37.7</td>
</tr>
<tr>
<td></td>
<td>% within total</td>
<td>2.2</td>
<td>5.7</td>
</tr>
<tr>
<td>Moderate (20 – 25 students)</td>
<td>% within level</td>
<td>21.4</td>
<td>48.3</td>
</tr>
<tr>
<td></td>
<td>% within total</td>
<td>10.4</td>
<td>23.5</td>
</tr>
<tr>
<td>High (x ≥ 25)</td>
<td>% within level</td>
<td>16.7</td>
<td>50.5</td>
</tr>
<tr>
<td></td>
<td>% within total</td>
<td>6.1</td>
<td>18.3</td>
</tr>
</tbody>
</table>
The reported relative amount of effort expended to coordinate curriculum was highest for teachers with the lowest relative class size.

**Ability Grouping**

As reported earlier, a number of researchers have found that tracking and course taking are among the most powerful predictors of student achievement, greater than even family background (Oakes, 1985; Slavin, 1988; Carnegie Council, 1989). Among the features of middle school models based on the *Turning Points* recommendations is the provision of a common, high quality curriculum to all students, primarily through heterogeneous student grouping as a school organizational policy and practice. Alternative practices, such as smaller student groupings, lower total student load, and more active and responsive curricula and instructional practices have been recommended to promote student learning in heterogeneously-grouped classes (Carnegie Council, 1989; NMSA, 1995).

SASS respondents were asked to designate one “typical” class to describe their teaching practices, and were asked to report which of many types of ability grouping characterized their class. Respondents were allowed to report more than one description. It was determined that every choice, apart from “heterogeneous” in fact described a form of ability grouping. Therefore, for the purposes of this study, responses were divided into two categories: All those who reported “heterogeneous” grouping (labeled “heterogeneous”), and those who did not select “heterogeneous” and selected one or more of the other responses. Frequency distributions for the
national sample, and each of the four subsamples based on instructional organization were computed to examine national practices of ability grouping, as well as those under each instructional organization pattern, as shown on Table 12 below:

**Table 12**

Student Grouping Practice Among U.S. Middle School Classes According to Instructional Organization Pattern

<table>
<thead>
<tr>
<th>Instructional Organization Level</th>
<th>Student Grouping Practice</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Heterogeneously Grouped</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-contained</td>
<td>% within level</td>
<td>68.3</td>
<td>31.7</td>
</tr>
<tr>
<td></td>
<td>% within total</td>
<td>11.2</td>
<td>5.2</td>
</tr>
<tr>
<td>Team teaching</td>
<td>% within level</td>
<td>83.4</td>
<td>16.6</td>
</tr>
<tr>
<td></td>
<td>% within total</td>
<td>10.2</td>
<td>2.0</td>
</tr>
<tr>
<td>Semi-departmentalized (3-4 sections)</td>
<td>% within level</td>
<td>90.4</td>
<td>9.6</td>
</tr>
<tr>
<td></td>
<td>% within total</td>
<td>9.5</td>
<td>1.0</td>
</tr>
<tr>
<td>Fully-departmentalized (5+ sections)</td>
<td>% within level</td>
<td>80.2</td>
<td>19.8</td>
</tr>
<tr>
<td></td>
<td>% within total</td>
<td>48.8</td>
<td>12.1</td>
</tr>
<tr>
<td>Total sample</td>
<td></td>
<td>79.7</td>
<td>20.3</td>
</tr>
</tbody>
</table>
Research Question 1.1

1.1. Do the data indicate a predominant pattern of organizational practice, e.g., “developmentally responsive” and/or “traditional/bureaucratic”?

Based on the pattern of responses recorded for each of the organizational practice variables above, cases were sorted into three categories of organizational practice: “Developmentally responsive”, “mixed”, and “traditional/bureaucratic”. Table 3, in the previous chapter, described the criteria by which responses were characterized into each of the patterns. In order to be classified as “developmentally responsive”, cases had to have reported the identified levels of practice in each of the five identified practices that facilitate the development of “small learning communities”. A similar process of identification, based on levels of practice in each of the five component practices was used to identify cases as “traditional/bureaucratic”: Cases that reported the lowest levels of developmentally responsive instructional organization practices for a majority of the five identified practices were categorized as having a traditional and/or bureaucratic pattern of organizational practice. Last, any school that did not meet the criteria for either pattern of practice was identified as “mixed”.

Based on the criteria identified earlier in Table 3, cases were assigned a rating of “2” for each practice if they met the developmentally responsive criteria, and a “1” if they did not. The sum of the scores of the five new recoded variables were used to categorize overall patterns of instructional organization practice. The organizational practices of cases that received a rating of “10” were categorized as “developmentally
responsive". Cases that received a rating of "5" through "7" were categorized as traditional/bureaucratic, as they did not report developmentally responsive practice in a majority of the five organizational practice variables. Cases that received a rating of "8" and "9" were designated as mixed organizational practice patterns. Though it may appear that this categorization scheme is overly restrictive in the identification of developmentally responsive patterns, examination of the identification criteria reveals that, in most variables, respondents may report 2-3 different levels of practice in order to receive an evaluation of "developmentally responsive" in a particular practice.

Table 13, below, shows the final categorization of overall patterns of instructional organization practice:

<table>
<thead>
<tr>
<th>Organizational Practice Pattern</th>
<th>Rating Score</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional/Bureaucratic</td>
<td>5</td>
<td>3.4</td>
<td>3.4</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>11.6</td>
<td>15.2</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>30.5</td>
<td>45.7</td>
</tr>
<tr>
<td>Mixed</td>
<td>8</td>
<td>30.5</td>
<td>76.2</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>19.4</td>
<td>95.7</td>
</tr>
<tr>
<td>Developmentally Responsive</td>
<td>10</td>
<td>4.3</td>
<td>100</td>
</tr>
</tbody>
</table>
Based on the analysis above, it is clear that only a small minority of the U.S. middle schools described in this study employ an overall pattern of the developmentally responsive instructional organization practices that support the development of "small learning communities", and that have been associated with the improved academic and socio-emotional achievement of middle school students.

Research Question 2

2. What are the levels/patterns of use of instructional practices that have been found by researchers to impact the engagement and learning of early adolescents?

On the Teacher Followup Survey, respondents were requested to report the quality of their use of a wide variety of instructional practices, student assessment strategies, and organizational techniques. A number of the teaching behaviors evaluated on the survey have been identified by researchers and/or middle school advocates as those that impact the engagement and learning of early adolescents either positively or negatively. A number of instructional and student evaluation practices have been specifically identified in this study as more developmentally responsive to the learning needs of young adolescents, while others were identified as those used in more traditional and/or bureaucratically organized middle-level schools, and not associated with successful middle school teaching and learning practices.
Table 14
The Reported Use of Selected Instructional Practices Employed by U.S. Middle Grades Teachers

1 = Almost Daily  
2 = 1-2 a week  
3 = 1-2 a month  
4 = 1-2 a semester  
5 = Never

<table>
<thead>
<tr>
<th>Practice</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Developmentally Responsive Instructional Practices:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Use of hands-on materials</td>
<td>2.26</td>
<td>1.05</td>
</tr>
<tr>
<td>b. Use of supplementary reading materials</td>
<td>1.99</td>
<td>.86</td>
</tr>
<tr>
<td>c. Student-led discussion</td>
<td>2.14</td>
<td>.97</td>
</tr>
<tr>
<td>d. Open-ended oral questions</td>
<td>1.77</td>
<td>.85</td>
</tr>
<tr>
<td>e. Individual project/presentation</td>
<td>2.85</td>
<td>.96</td>
</tr>
<tr>
<td>f. Cooperative group work for individual grade</td>
<td>3.12</td>
<td>1.12</td>
</tr>
<tr>
<td>g. Cooperative group work for group grade</td>
<td>3.48</td>
<td>1.04</td>
</tr>
<tr>
<td>h. Student self-assess through conferring with other students</td>
<td>2.32</td>
<td>1.16</td>
</tr>
<tr>
<td>i. Journaling</td>
<td>3.49</td>
<td>1.57</td>
</tr>
<tr>
<td>j. Project-based learning: Data collection, experiments</td>
<td>3.24</td>
<td>1.15</td>
</tr>
<tr>
<td><strong>Traditional/Bureaucratic Practices</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Whole group instruction</td>
<td>1.10</td>
<td>.42</td>
</tr>
<tr>
<td>b. Lecture</td>
<td>2.12</td>
<td>1.19</td>
</tr>
</tbody>
</table>
Table 14 -- Continued

<table>
<thead>
<tr>
<th>Practice</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>c. Oral response/recall</td>
<td>1.48</td>
<td>.81</td>
</tr>
<tr>
<td>d. Students listen/observe teacher presentation</td>
<td>1.94</td>
<td>1.15</td>
</tr>
<tr>
<td>e. Routine practice in workbook/worksheet</td>
<td>2.19</td>
<td>.94</td>
</tr>
<tr>
<td>f. Use of textbook</td>
<td>1.69</td>
<td>1.03</td>
</tr>
<tr>
<td>g. Teacher-led discussion</td>
<td>1.68</td>
<td>.84</td>
</tr>
<tr>
<td>h. Homework with routine exercises on worksheet or textbook</td>
<td>2.08</td>
<td>1.01</td>
</tr>
</tbody>
</table>

The TFS items and/or behaviors selected for this study and their designation as “developmentally responsive” or “traditional/bureaucratic” are shown on Tables 14 (above) and 15 (below), which also report the results of the descriptive analyses. The use of these practices among U.S. middle school teachers was determined by the computation mean scores to determine the level of use of each practice.
Table 15

The Reported Importance of Selected Evaluation Practices Used by U.S. Middle Grades Teachers

1 = Extremely Important
2 = Very Important
3 = Somewhat Important
4 = Not important

<table>
<thead>
<tr>
<th>Evaluation Practice</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Developmentally Responsive Evaluation Practices</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Evaluation/assessment based on student effort</td>
<td>1.80</td>
<td>.79</td>
</tr>
<tr>
<td>b. Evaluation/assessment based on individual student improvement</td>
<td>1.86</td>
<td>.68</td>
</tr>
<tr>
<td>c. Evaluation/assessment based on open-ended responses on tests</td>
<td>2.62</td>
<td>.82</td>
</tr>
<tr>
<td><strong>Traditional/Bureaucratic Evaluation Practices</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Evaluation/assessment based on absolute level of achievement</td>
<td>2.20</td>
<td>.74</td>
</tr>
<tr>
<td>b. Evaluation/assessment based on achievement relative to class</td>
<td>2.90</td>
<td>.73</td>
</tr>
<tr>
<td>c. Evaluation/assessment based on multiple choice, T/F tests</td>
<td>2.68</td>
<td>.77</td>
</tr>
</tbody>
</table>
Research Question 2.1

2.1 Do the data indicate a predominant pattern of instructional practices, e.g., “developmentally responsive” and/or “traditional/bureaucratic”?

As seen on Table 15, U.S. middle school teachers report they place greater importance on evaluation practices that have been identified as developmentally responsive to the learning needs of young adolescents than on more traditional evaluation practices. However, the interpretation of reported instructional practices is somewhat harder to assess, as no previous research has established an optimal level of use for any, or any combination of, specific instructional practices and teaching methodologies. What is recommended, though, is that the instruction provided to young adolescents be as actively engaging and student-centered as possible. By determining a rank order of instructional practice use, it is possible to establish a “snap shot” of the primary nature of the instruction encountered by U.S. middle school students. On Table 16, the surveyed instructional practices are rank ordered according to mean level of use and are identified as either “developmentally responsive” (more active learning/student-centered) or “traditional/bureaucratic” (more passive learning/teacher-centered).

As was the case earlier in the findings on instructional practice, even though optimal (or even recommended) levels of the instructional practices listed here have not been established through research, it is apparent that a majority of the instruction experienced by U.S. middle school students within a typical week involves a pattern of passive learning and traditional teacher-centered teaching methodologies.
Table 16

The Reported Use of Selected Instructional Practices Employed by U.S. Middle Grades Teachers in Rank Order

1 = Almost Daily
2 = 1-2 a week
3 = 1-2 a month
4 = 1-2 a semester
5 = Never

DR = Developmentally Responsive
TB = Traditional/Bureacratic

<table>
<thead>
<tr>
<th>Practice</th>
<th>Mean</th>
<th>S.D.</th>
<th>Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whole group instruction</td>
<td>1.10</td>
<td>.42</td>
<td>TB</td>
</tr>
<tr>
<td>Oral response/recall</td>
<td>1.48</td>
<td>.81</td>
<td>TB</td>
</tr>
<tr>
<td>Teacher-led discussion</td>
<td>1.68</td>
<td>.84</td>
<td>TB</td>
</tr>
<tr>
<td>Use of textbook</td>
<td>1.69</td>
<td>1.03</td>
<td>TB</td>
</tr>
<tr>
<td>Open-ended oral questions</td>
<td>1.77</td>
<td>.85</td>
<td>DR</td>
</tr>
<tr>
<td>Students listen/observe teacher presentation</td>
<td>1.94</td>
<td>1.15</td>
<td>TB</td>
</tr>
<tr>
<td>Use of supplementary reading materials</td>
<td>1.99</td>
<td>.86</td>
<td>DR</td>
</tr>
<tr>
<td>Homework with routine exercises on worksheet or textbook</td>
<td>2.08</td>
<td>1.01</td>
<td>TB</td>
</tr>
<tr>
<td>Lecture</td>
<td>2.12</td>
<td>1.19</td>
<td>TB</td>
</tr>
<tr>
<td>Student-led discussion</td>
<td>2.14</td>
<td>.97</td>
<td>DR</td>
</tr>
<tr>
<td>Routine practice in workbook/worksheet</td>
<td>2.19</td>
<td>.94</td>
<td>TB</td>
</tr>
<tr>
<td>Use of hands-on materials</td>
<td>2.26</td>
<td>1.05</td>
<td>DR</td>
</tr>
<tr>
<td>Student self-assess by conferring with other students</td>
<td>2.32</td>
<td>1.16</td>
<td>DR</td>
</tr>
</tbody>
</table>
Table 16 -- Continued

<table>
<thead>
<tr>
<th>Practice</th>
<th>Mean</th>
<th>S.D.</th>
<th>Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual project/presentation-in class</td>
<td>2.85</td>
<td>.96</td>
<td>DR</td>
</tr>
<tr>
<td>Cooperative group work for individual grade</td>
<td>3.12</td>
<td>1.12</td>
<td>DR</td>
</tr>
<tr>
<td>Project-based learning: Data collection, experiments</td>
<td>3.24</td>
<td>1.15</td>
<td>DR</td>
</tr>
<tr>
<td>Cooperative group work for group grade</td>
<td>3.48</td>
<td>1.04</td>
<td>DR</td>
</tr>
<tr>
<td>Journaling</td>
<td>3.49</td>
<td>1.57</td>
<td>DR</td>
</tr>
</tbody>
</table>

Research Question 3

3. Is there any evidence of a relationship between organizational and instructional practices?

3.1 What does instructional practice look like in schools that use developmentally responsive organizational practices?

3.2 What does instructional practice look like in schools that have low-no levels of developmentally responsive organizational practices?

Mean levels of use of instructional practices, sorted by organizational practice pattern, were run to compare the nature of the use of teaching practices among teachers between those who teach in schools characterized by the two primary organizational practice patterns identified by this study. Specifically the instructional practices of teachers in schools characterized by a developmentally responsive pattern
of organizational practice were compared to the practices of those who teach in
schools organized in a traditional/bureaucratic pattern. The responses of cases
categorized as “mixed” organizational practice patterns were excluded from this
analysis, as there was no theoretical model on which base analyses of the variety of
differences in practice found in that group. Table 17 summarizes the comparisons of
instructional practice between schools with developmentally responsive
organizational practice patterns and those with more traditional/bureaucratic
organizational patterns.

An examination of Table 17 indicates that teachers in schools with
developmentally responsive organizational practices report noticeably higher mean
levels of use of all but one of the identified developmentally responsive instructional
practices than did teachers in schools categorized as traditional/bureaucratic
organizational patterns. Interestingly, the differences between groups in mean levels
of use of traditional/bureaucratic instructional practices are smaller, with teachers
from developmentally responsive organizational patterns often reporting slightly
higher usage of traditional practices as well. Teachers from schools with
developmentally responsive organizational practices reported slightly higher levels of
importance for two out of the three developmentally responsive evaluation practices
(as seen on Table 18), as well as two out of the three evaluation practices identified as
traditional/bureaucratic.
Table 17
Comparison of the Reported Levels of Use of Selected Instructional Practices in Middle Schools with Developmentally Responsive Organizational Practices and Middle Schools with Traditional/Bureaucratic Organizational Practices

<table>
<thead>
<tr>
<th>Practice</th>
<th>DR Mean</th>
<th>S.D.</th>
<th>TB Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Developmentally Responsive Instructional Practices</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use of hands-on materials</td>
<td>2.22 (1.14)</td>
<td></td>
<td>2.38 (1.15)</td>
<td></td>
</tr>
<tr>
<td>Use of supplementary reading materials</td>
<td>1.65 (.72)</td>
<td></td>
<td>2.14 (.89)</td>
<td></td>
</tr>
<tr>
<td>Student-led discussion</td>
<td>1.67 (.96)</td>
<td></td>
<td>2.25 (.95)</td>
<td></td>
</tr>
<tr>
<td>Open-ended oral questions</td>
<td>1.13 (.34)</td>
<td></td>
<td>1.91 (.87)</td>
<td></td>
</tr>
<tr>
<td>Individual project/presentation</td>
<td>2.63 (.70)</td>
<td></td>
<td>3.03 (.99)</td>
<td></td>
</tr>
<tr>
<td>Cooperative group work for individual grade</td>
<td>2.69 (1.07)</td>
<td></td>
<td>3.23 (1.16)</td>
<td></td>
</tr>
<tr>
<td>Cooperative group work for group grade</td>
<td>3.27 (1.14)</td>
<td></td>
<td>3.61 (.97)</td>
<td></td>
</tr>
<tr>
<td>Student self-assess by conferring w other students</td>
<td>1.99 (1.01)</td>
<td></td>
<td>2.37 (1.10)</td>
<td></td>
</tr>
<tr>
<td>Journaling</td>
<td>3.16 (1.55)</td>
<td></td>
<td>3.67 (1.57)</td>
<td></td>
</tr>
</tbody>
</table>

1 = Almost Daily  
2 = 1-2 a week  
3 = 1-2 a month  
4 = 1-2 a semester  
5 = Never  

DR = Developmentally Responsive  
TB = Traditional/Bureacratic
Table 17 -- Continued

<table>
<thead>
<tr>
<th>Practice</th>
<th>Group Mean</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DR</td>
<td>S.D.</td>
<td>TB</td>
</tr>
<tr>
<td>Project-based learning: Data collection, experiments</td>
<td>3.31</td>
<td>(1.15)</td>
<td>3.26</td>
</tr>
<tr>
<td><strong>Traditional/Bureaucratic Practices</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whole group instruction</td>
<td>1.11</td>
<td>(.37)</td>
<td>1.06</td>
</tr>
<tr>
<td>Lecture</td>
<td>2.02</td>
<td>(1.21)</td>
<td>2.07</td>
</tr>
<tr>
<td>Oral response/recall</td>
<td>1.11</td>
<td>(.32)</td>
<td>1.57</td>
</tr>
<tr>
<td>Students listen/observe teacher presentation</td>
<td>2.03</td>
<td>(1.07)</td>
<td>2.01</td>
</tr>
<tr>
<td>Routine practice in workbook/worksheet</td>
<td>2.34</td>
<td>(.97)</td>
<td>2.30</td>
</tr>
<tr>
<td>Use of textbook</td>
<td>1.60</td>
<td>(1.25)</td>
<td>1.76</td>
</tr>
<tr>
<td>Teacher-led discussion</td>
<td>1.28</td>
<td>(.49)</td>
<td>1.72</td>
</tr>
<tr>
<td>Homework with routine exercises on worksheet or textbook</td>
<td>1.97</td>
<td>(.98)</td>
<td>2.19</td>
</tr>
</tbody>
</table>
Table 18

A Comparison of the Reported Levels of Use of Selected Evaluation Practices of U.S. Middle School Teachers in Schools with Developmentally Responsive Organizational Practices and Middle Schools with Traditional/Bureaucratic Organizational Practices

1 = Extremely Important
2 = Very Important
3 = Somewhat Important
4 = Not Important

DR = Developmentally Responsive
TB = Traditional/Bureaucratic

<table>
<thead>
<tr>
<th>Practice</th>
<th>DR Mean</th>
<th>S.D.</th>
<th>TB Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Developmentally Responsive Evaluation Practices</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaluation/assessment based on student effort</td>
<td>1.80</td>
<td>.67</td>
<td>1.77</td>
<td>.81</td>
</tr>
<tr>
<td>Evaluation/assessment based on individual student improvement</td>
<td>1.68</td>
<td>.51</td>
<td>1.87</td>
<td>.64</td>
</tr>
<tr>
<td>Evaluation/assessment based on open-ended responses on tests</td>
<td>2.36</td>
<td>.72</td>
<td>2.73</td>
<td>.88</td>
</tr>
<tr>
<td><strong>Traditional/Bureaucratic Evaluation Practices</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaluation/assessment based on absolute level of achievement</td>
<td>2.21</td>
<td>.78</td>
<td>2.23</td>
<td>.75</td>
</tr>
<tr>
<td>Evaluation/assessment based on achievement relative to class</td>
<td>2.77</td>
<td>.67</td>
<td>2.92</td>
<td>.74</td>
</tr>
<tr>
<td>Evaluation/assessment based on multiple choice, T/F tests</td>
<td>2.80</td>
<td>.77</td>
<td>2.76</td>
<td>.83</td>
</tr>
</tbody>
</table>
Finally, one-way ANOVAs were computed for each instructional practice by organizational practice pattern to see whether differences in teacher instructional practice in the two different organizational practice patterns, if any, were significant. When this procedure was computed using the weighted samples used in all previous analyses in this study, each comparison indicated a significant difference in instructional practice between developmentally responsive organizational pattern schools and traditional/bureaucratic. When computed with the unweighted sample, organizational pattern sample sizes were sufficiently unequal that Type I error levels could not be guaranteed, and only one instructional comparison practice, “Group work/individual grade” ($F = 4.81, p < .05$) indicated a significant difference in practice between groups. Table 19, below, reports the weighted and unweighted sample sizes for the total group, as well as the subsamples based on organizational practice patterns.

Table 19

Unweighted and Weighted Sample Sizes for The Study

<table>
<thead>
<tr>
<th>Sample Group</th>
<th>Unweighted Sample Size</th>
<th>Weighted Sample Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total sample</td>
<td>423</td>
<td>323,690</td>
</tr>
<tr>
<td>Traditional/Bureaucratic</td>
<td>167</td>
<td>141,502</td>
</tr>
<tr>
<td>Mixed</td>
<td>222</td>
<td>159,222</td>
</tr>
<tr>
<td>Developmentally Responsive</td>
<td>31</td>
<td>22,964</td>
</tr>
</tbody>
</table>
Summary of Findings

This chapter has described the analysis procedures and findings of this study. One of the recommendations to enhance interpersonal connections between students and students to teachers is to reduce the number of teachers and class “regroupings” a student experiences during one day and/or week (McEwin, et. al., 1996; Lee and Smith, 1993). A notable majority (60.9 percent) of U.S. middle school teachers report their classes and students are organized in a highly bureaucratic (five or more sections of assigned students), departmentalized instructional structure. However, a majority of teachers overall (56.8 percent) reported low to moderate total student loads, low to moderate average class sizes (64.7 percent), and the use of heterogeneous grouping of students (79.7 percent), all practices that have been found to promote the development of “small communities for learning”. A substantial minority (33.8 percent) of the respondents reported a high amount of effort to coordinate curriculum with other teachers. The increased coordination of collaboration between teachers on the content of instruction is assumed to be the key to the effective provision of developmentally responsive, yet academically specialized instruction at the middle school level (Anfara and Waks, Jr., 2000; Flowers, et. al., 1999, 2000; Clark and Clark, 1993).

Each one of these practices must be in evidence at the levels recommended by research in order to support the development of “small communities of learning”. When the responses of the study participants were analyzed to uncover how many practices were effectively implemented for each school, it was found that 43.7 percent
of participating schools did not engage in effective levels of organizational practice for a majority of the identified practices. These schools were categorized as having a traditional and/or bureaucratic pattern of organizational practice. Fifty percent of the schools engaged in effective levels of practice for three or four (a majority) of the five identified practices. However, only a small number (4.3 percent) of the participants reported the effective implementation of all of the identified recommended levels of practice. These schools were categorized as having a developmentally responsive pattern of organizational practice.

The day-to-day instructional practice of U.S. middle school teachers still appears to be dominated by passive student learning and teacher-centered direct instruction methods. Seven of the top ten ranked teaching strategies identified by respondents were the more traditional and/or bureaucratic practices. There is some indication that instructional practices vary slightly and somewhat idiosyncratically between schools categorized as having a developmentally responsive organizational practice pattern and those categorized as traditional/bureaucratic: Teachers in schools with developmentally responsive organizational practices report slightly higher use of all but one of the identified developmentally responsive instructional practices, though they also report use of traditional/bureaucratic instructional practices at levels much more similar to those of teachers from traditional/bureaucratically organized schools. This concludes the description of the analyses of findings for this study. In the next chapter these findings and their implications for educational policymakers will be discussed, and recommendations for future research offered.
CHAPTER V

SUMMARY, FINDINGS, AND RECOMMENDATIONS
FOR FUTURE RESEARCH

Summary

Middle schools were proposed in the early 1960s to reform the institution of junior high schools. Some of the criticisms leveled at junior high schools were fragmented, departmentalized curricula, over-reliance on passive learning and teacher-centered instruction based on lecture and a heavy reliance on textbooks (Alt and Choy, 2000; Cuban, 1992). Other problems identified by critics were the lack of equitable student access to high quality education through the practice of tracking, and a lack of teacher expertise in the emergent social, emotion, and learning needs of young adolescents (Oakes, et. al., 1993; George, et. al., 1992). Junior highs were perceived as having evolved into watered-down senior high schools, whose highly bureaucratic organizational and instructional practices were particularly inappropriate for young students undergoing perhaps the largest physical, intellectual, social, and emotional period of development of their lives (Lee and Smith, 1993).

As concern grew among middle-level educators and researchers over the course of the 1980s, a number of in-depth studies and proposals were undertaken, most notably This We Believe (NMSA, 1982) and Turning Points (Carnegie Council on Adolescent Development, 1989). These studies called for school programs to have
a stronger focus on meeting adolescents’ physical, emotional, and social needs, in addition to their intellectual needs. Specific organizational and instructional practices were recommended to strongly engage young adolescents in learning by responding to their unique developmental needs (Jackson and Davis, 2000; NMSA, 1995, 1982; Carnegie Council, 1989).

Since the early 1980s the national interest in education has increasingly become focused on improving student academic achievement. U. S. schools became expected to be internationally competitive, and educational equity for students was redefined from the provision of a baseline of equal resources to a responsibility for the equal achievement of standards-based disciplinary outcomes (Manzo, 2000; Viadro, 1999; Bradley, 1998). Middle schools came under growing scrutiny, as international comparisons revealed the middle school as the point at which U.S. student achievement scores drop substantially (Alt and Choy, 2000). By 1997, the basic premises of the middle school concept were under attack, as U.S. middle schools began to be accused of neglecting academic outcomes due to an overemphasis on students’ developmental social and emotional needs (Manzo, 2000; Viadro, 1999; Bradley, 1998).

However, it is not at all clear that a majority of U.S. middle schools ever adopted the middle school concept or changed very substantially from traditional junior high-style organizational and instructional practices. The little research available on U.S. middle schools indicates that the developmentally responsive middle school model has not been widely nor comprehensively adopted nationwide.
(McEwen, Dickinson, and Jenkins, 1996). Therefore, the issue at stake here is, that before the nation demands an overhaul of practice, we ought to be clear about what programs and practices are actually in use, and which programs and practices have been shown by research to be most effective. Without such empirical and objective information there can be no template for successful reform, and change will continue to occur based primarily on ideological and/or political values (Anfara and Waks, Jr., 2000).

The purpose of this study was to provide some objective and empirical information about the organizational and instructional practices employed in U.S. middle schools. Specifically, the study looked at the use of developmentally responsive organizational and instructional practices recommended by Turning Points and the National Middle School Association that have been found by researchers to be effective in improving student socio-emotional outcomes as well as achievement of standards-based outcomes. Data on these practices were extracted from the 1993-94 Schools and Staffing Survey, and the 1994-95 Teacher Followup Survey, a national cross-sectional survey administered by the National Center for Educational Statistics. It is hoped that the findings of this study will increase the small base of empirical and objective information available to educational practitioners and policy makers on which to make decisions on middle level education.
Findings

Literature Review

An Increasingly Narrowed Focus

As stated earlier, since the early 1980s the national interest in education has increasingly become focused on increasing student academic achievement. Over the course of the past two decades, the center of the dialogue over middle level education has shifted from an emphasis on developmental responsiveness to an almost exclusive emphasis on the academic achievement of standards-based outcomes. The sea-change of educational purpose is perhaps best illustrated by two publications that have book-ended this shift: *Turning Points* (1989) and *Turning Points 2000* (Jackson and Davis, 2000). In the original *Turning Points* the authors centered their message on a call for a change to developmentally responsive practices in eight broad areas. Returning in *Turning Points 2000*, the original authors devote the first three chapters to practices correlated to academic student achievement. Instead of eight wide-ranging areas of practice, the priorities promoted for middle schools are: 1) Academic achievement, 2) Social equity, and, 3) Developmental responsiveness. Original middle school advocates now fear that the tidal wave of emphasis on academic achievement and disciplinary standards-based reform might “sound the death-knell” for the unique integrated curriculum and developmental goals of the “true” middle school model (Dickinson and Butler, 2001; Norton, 2000a). These fears are not without ground: Research on the state assessment program in Indiana
found that emphasis on testing had narrowed the middle school curriculum, and focus on academic subject areas and basic skills had increased at the expense of affective objectives (Cooley, 1982).

**Developmentally Responsive Practices Increase Student Achievement, as Well as Socio-emotional Adjustment**

Placing the blame of low achievement scores of middle grades students on schools that place too much emphasis on affective outcomes over academic causes many middle school advocates to fear they will face demands to return to the teacher-and subject-centered directive instruction and bureaucratic organization practices, practices found to alienate, disengage and disenfranchise many middle level students. That is why the findings of research from initiatives to implement the *Turning Points* recommendations are so important: They offer the promise to meet both the more restrictive academic outcomes of today, as well as the important socio-emotional student outcomes identified by the original middle school advocates (Dickinson and Butler, 2001; Flowers, et. al., 2000, 1999; Felner, et. al., 1997).

**Effective Developmentally Responsive Organizational Practices**

Not all recommendations by *Turning Points* or from the NMSA are of equal importance to the improvement of student academic achievement. “Small communities for learning” is one reform that has found to have significant influence on student academic achievement, as well as on student adjustment (Jackson and Davis, 2000, Carnegie Council, 1989). Small learning communities are created by
deepening the personal relationships and quality of interactions between students and teachers through reduction of the number of relationships and learning “structures” (classes) for which they must be responsible, by lowering the number of students overall, average class size, and the number of “regroupings” (Lee and Smith, 1993). The use of “schools within schools” or student-teacher teams are also recommended to create a smaller and more personalized environment for teaching and learning (Jackson and Davis, 2000; NMSA, 1995; Carnegie Council, 1989). The elimination of tracking, or ability grouping, is key for the improvement of student educational equity by ensuring equal student access to the same high quality of instruction (Jackson and Davis, 2000; Lee and Smith, 1993; Oakes, 1993). Highly integral for making heterogeneous classes successful and establishing vital “learning communities” is teacher collaboration around instruction (Flowers, et. al., 1999, 2000; Felner, et. al, 1997). Integrated disciplinary teams (a group of 2 or more subject specialists who share the responsibility of providing education to the same group of students) are promoted by both Turning Points and the National Middle School Association. The Turning Points researchers have found that in middle schools that have implemented Turning Points reforms, improvements in student academic achievement are directly correlated with the amount of time spent by their teachers in collaboration on instruction.

Therefore, teacher teaming and planning around instruction, the organization of instruction (such as, class organization, student load and class size) and student grouping (how students are assigned to classes) are organizational practices that have
substantial impact on the possible types of relationships and learning interactions within a school that affect the academic achievement as well as socio-emotional outcomes of middle school students.

Evidence That MS Practice Remains Bureaucratically Organized and Teacher-centered (Passive Student Learning is Emphasized)

In terms of how instruction is actually organized, U.S. middle school teachers still meet with students in a highly bureaucratic, departmentalized structure: Alt and Choy found that nearly 80 percent of middle school teachers in 1993 reported departmentalized teaching (or, teaching the same subject to several different groups of students in the same day). Instruction was also found to be quite traditional: In a 1993 NMSA study, 90 percent of the middle schools reported they “regularly” employed direct instruction (teacher presentation, lecture, drill and practice, etc.) at high levels. Cooperative learning (structured group work) was used regularly by about one-half of the schools; inquiry teaching (project based, information gathering, deriving conclusions) was used “only occasionally” by less than one-half of the schools. In Turning Points 2000 Jackson and Davis reported that many structural changes (such as advisory programs, exploratory classes, team groupings) were widespread, but their observations suggest that little has changed at the core of most middle school students’ educational experience in curriculum, instruction, and assessment. They also report that changes in middle school practice have occurred least in the areas of most need – high-poverty urban and rural communities with poor student achievement and low rates of successful transition into high school.
Survey Analysis

Five organizational practices were identified from the literature to impact the development of "small learning communities": (1) The organization of instruction, or how classes are organized and instruction allocated ("class organization"), (2) The total number of students for which a teacher is responsible to instruct and evaluate ("total student load"), (3) The size of the classes taught ("average class size"), (4) The amount of collaboration and coordination between teachers on the content of instruction ("curricular coordination"), and, (5) The nature of student assignment to class/instruction ("ability grouping"). The findings for each of these practices is described below.

Instructional (Class) Organization

This study examined the proportion of middle grades teachers who teach in the following instructional organizational patterns: Self-contained, team teaching, semi-departmentalized (less than 5 student class sections daily), or fully departmentalized (5 or more class sections daily). Semi-departmentalized and team teaching arrangements have been found to be most developmentally responsive to middle school students, while still maintaining much of the subject specialization advantages of departmentalized instruction (Flowers, et. al., 1999, 2000; Felner, et. al., 1997; Lee and Smith, 1993; Clark and Clark, 1993; Mac Iver and Epstein, 1993). The study found that over 60
percent of U.S. middle school teachers surveyed meet with students in a highly bureaucratic, departmentalized structure, teaching the same subject to five or more groups of students each day. A smaller proportion, 10.5 percent, indicated they taught in a "semi-" departmentalized structure, meeting with four or less sections of students.

Approximately 12 percent of the middle school teachers surveyed reported they "team taught". However, it appeared that respondents to this question taught in a variety of organizational patterns. Though the survey defined "team teaching" as sharing a single group of students and co-teaching multiple subjects with another teacher, it was evident that a number of respondents organized in larger interdisciplinary teacher teams such as defined by NMSA or the Turning Points recommendations also selected this option. Information on class sections was not requested by the SASS for team teachers; therefore it was impossible to infer how team teaching might differ from the different types of departmentalized teaching. Just over 16 percent of the respondents indicated they taught in "self-contained" classrooms (responsible for instruction of multiple subjects to a single group of students), a proportion higher than the 10 percent figure found in 1993 by McEwen, Dickinson and Jenkins (1996).
Total Student Load/Average Class Size

The study found a large proportion (43.2 percent) of U.S. middle school teachers are responsible for the learning and evaluation of over 120 students at a given time. Not surprisingly, the majority of these teachers were those who taught five or more sections of students ("fully departmentalized"). "Moderate" student loads of 90-120 were reported by 23.2 percent of the respondents. The 33.6 percent of teachers who were responsible for the lower total student loads (x < 90) taught primarily in team and self-contained class organizations. Turning Points researchers found that changes in practice had no effect on student achievement when teachers were responsible for more than 120 students, and had the most effect when teachers were responsible for less than 90 students overall.

Though responsible for the lowest total levels of students overall, nearly 45 percent of teachers in self-contained classrooms and 56 percent of semi-departmentalized (four or less sections of students) indicated class sizes higher than 25 students in this study. Having a high number of student sections apparently allowed average class size to be reduced: One half of "fully departmentalized" teachers reported moderate average class sizes of 20-25 students. Across the combined class organizations, 15 percent of all teachers reported average class sizes of less than 20 students, 43 percent reported moderate class sizes of 20-25 students, and 31 percent reported high average class sizes of 25-30, while 11 percent reported the highest average class sizes of 30-35 students. Again, the Turning Points research studies saw no effect on student achievement from reforms in practice when class
sizes averaged over 24-25 students, a level at which the class sizes of approximately 58 percent of the surveyed teachers did not exceed.

Curricular Coordination

One of the organizational features identified as key to the creation of small learning communities is interdisciplinary teacher teaming. Among the factors that impact the effectiveness of teacher teaming is the amount of teacher collaboration and coordination of instruction, as well as the total number of students and overall teacher-student ratio as stated above. Flowers, et. al., (2000) found that middle schools that emphasize teacher collaboration and coordination of instruction tend to be more successful at implementing responsive instructional practices such as small-group instruction, heterogeneous grouping, integrated and interdisciplinary teaching, mastery-based assessment, critical thinking enhancement practices, and authentic instruction and assessment practices.

Over eighty percent of the teachers surveyed indicated they put “moderate” to “high” effort toward the coordination of curriculum with other teachers. With such high numbers, it was decided to use only the responses of those participants who reported “high” effort to coordinate curriculum (33.8 percent overall) in the identification of overall organizational practice patterns, in order to discriminate between relative levels of commitment toward curriculum coordination to a greater degree. Possible support for a proof of commitment to the underlying rationale that differentiates between “team teachers” and otherwise “departmentalized” teachers can
be drawn from the finding that the proportion of team teachers who reported high effort to coordinate curriculum was by far the largest (46.6 percent) of the four class organization groups, followed by semi-departmentalized teachers (39.3 percent). Team teachers also recorded the lowest proportion of teachers that reported “low/no” effort at coordination (2.3 percent). A post-hoc analysis was conducted on these variables. A one-way ANOVA indicated that team teachers reported significantly higher effort at coordination with other teachers than did self-contained, semi-, or fully-departmentalized teachers ($F = 3.269, p < .05$)

**Ability Grouping**

Ability grouping, or tracking, is not recommended by the NMSA, as it limits access to high quality learning opportunities for many students. *Turning Points* (1989) called tracking “one of the most divisive and damaging school practices in existence” (p. 49). NMSA’s 1993 national study reported that 68 percent of their respondents reported use of ability grouping for some or all of the classes in their schools (McEwen, et. al., 1996). However, there is evidence that the practice of “random assignment” to basic academic classes increased from 25 percent to over 50 percent between 1988 and 1993, indicating that the practice of ability grouping may be markedly decreasing across U.S. middle schools (McEwen, et. al., 1996).

The data analyzed in this study was extracted from the responses of U.S. middle school teachers of “core” academic subjects (mathematics, reading, language arts, social studies, and sciences). Nearly 80 percent of these teachers reported their
classes were heterogeneously grouped, and students were not grouped according to ability. (Of course, special education teachers and teachers of “pull-out” classes were excluded from the study, since these teachers, by definition, teach atypical populations and are assigned atypical class sizes and structures). Teachers of self-contained classes reported the highest proportion of ability-grouped classes (31.7 percent), while semi-departmentalized teachers reported the least amount of ability-grouping (9.6 percent).

Evidence of Organizational Practice Patterns in U.S. Middle Schools

This study posed the question about the nature of the organizational practices around instruction in U.S. middle schools; specifically those practices that have been shown to promote the formation of developmentally responsive “small learning communities”. The organizational model juxtaposed against the developmentally responsive organizational practices was the bureaucratic “assembly-line” model of instructional organization identified with the traditional junior high school.

The findings of this study indicated that the traditional, more bureaucratic forms of organizational practice around instruction are strongly present in 45.7 percent of the respondent’s schools. Schools that have actively implemented all the identified developmentally responsive organizational practices at the recommended levels of effect comprise only 4.3 percent of the schools surveyed in this study. Of the 50 percent of schools that were categorized as “mixed”, it would be interesting to follow up this analysis in the future with the 2000 SASS, to uncover whether or not
most schools are evolving toward one pattern of practice or another, or whether their adoption of developmentally responsive organizational practices are random, or related with other factors such as urbanicity, poverty or other institutional practices.

Instructional Practice in U.S. Middle Schools

This study asked the question of how instruction looks in U.S. middle schools. To what degree does middle school instruction continue to be marked by the teacher-and subject-centered direct instruction methods and student passivity that characterized the traditional junior high model of instruction, as opposed to those developmentally responsive, student-centered active learning strategies recommended by researchers and middle school advocates?

However, the interpretation of reported instructional practices is somewhat harder to assess, as no previous research has established an optimal level of use for any, or any combination of, specific instructional practices and teaching methodologies. Even though optimal (or even recommended) levels of the instructional practices listed above have not been established through research, it is apparent that a majority of the instruction experienced by U.S. middle school students within a typical week involves a pattern of passive learning and traditional teacher-centered teaching methodologies. Seven of the top ten ranked instructional practices were identified as ones associated with the criticized, traditional junior high model of teaching. Developmentally responsive instructional practices were used regularly, but not as frequently as traditional practices. With little previous descriptive research
on national use of teaching strategies to place such findings into context, it would be useful to track these findings over time to reveal changes or establish baselines in the levels and patterns of use of the identified instructional practices.

**Relationship Between Organizational and Instructional Practice**

Paraphrasing an earlier quote by Mergendollar (1993, p. 530), researchers and reformers should be cautioned that structural changes are typically too distal to directly affect student outcomes. What is important is how teachers and administrators take advantage of the opportunities to reorient the ways in which they understand and carry out their jobs, which produces the positive effect on student’s learning and attitudes. The *Turning Points* researchers have been able to find correlations between changes in organizational practices and changes in instructional practices, which led to the question in this study whether instructional practice looked different in middle schools that had successfully implemented some key developmentally responsive organizational practices compared to schools that organized instruction in more traditional and bureaucratic ways.

A tentative answer is that it might be different. Certainly a simple eye-ball comparison of mean levels of instructional practice showed that, though teachers in middle schools with developmentally responsive organizational practices employ traditional teaching methods at very similar levels to teachers in more traditionally organized schools, they do report a higher incidence of use of developmentally responsive instructional practices. However, it was not possible to accurately
determine the size or significance of these differences due to unequal sample sizes.

Exploration of the relationship between instructional practice and the organizational practices examined in this study, as well as others recommended by middle school advocates (teacher teaming, common planning time, flexible schedules, etc.) is a fruitful field of inquiry that can provide important information to middle school practitioners and policymakers about the impact and effectiveness of structural reforms.

Recommendations for Future Research

A number of recommendations for future research have been embedded in the descriptions of the findings above. Identification of trends and patterns of organizational practices and development could prove to be useful for education policymakers. In this study, fifty percent of the schools were categorized as “mixed”, meaning they did not fit one of the identified patterns of organizational practice described in this study. It would be productive to follow up this study in the future with the 2000 SASS, to uncover whether or not most schools are evolving toward one pattern of practice or another, or whether their adoption of developmentally responsive organizational practices are random, or related with other factors such as urbanicity, poverty or other environmental and/or institutional factors.

As stated earlier, with little previous descriptive research on national use of teaching strategies to place such findings into context, it would be valuable to track
these findings over time to reveal changes or establish baselines in the levels and patterns of use of the identified instructional practices.

Exploration of the relationship between instructional practice and how instructional is organized (as described by the organizational practices defined in this study), as well as other reforms recommended by middle school advocates (teacher teaming, common planning time, flexible schedules, etc.) is a field of inquiry that can provide important information to middle school practitioners and policymakers about the impact and effectiveness of proposed structural reforms. For example, teacher collaboration and coordination of instruction would seem extremely important to address the range of student learning and development needs called for by heterogeneous student grouping. The SASS could be a useful tool by which to base future research on the relationship between teacher coordination and instructional practice. How does class organization and/or departmentalization, or total student load/average class size relate to the choice and level of use of instructional practices?

Conclusion

Relatively little empirical and objective research on the organizational and instructional practices of U.S. middle schools, and their impact on student outcomes exists. Yet such information is vitally needed to inform the decision making of middle school educators and policymakers. The middle school concept is now at a crossroads, and its fundamental philosophy of developmental responsiveness is under attack. Without a clear understanding of current practice or objective information on
the effectiveness of different strategies, decisions about the educational experiences and outcomes of U.S. middle school students will be left to the vagaries of ideological debate and shifts in public opinion. The deep impact of the outcomes of this debate on the youth of the country underscores the urgency for quality research on middle level education now.
Appendix A

Protocol Clearance from the Human Subjects
Institutional Review Board
Date: June 20, 2002

To: Van Cooley, Principal Investigator
    Nancy Mansberger, Student Investigator for dissertation

From: Mary Lagerwey, Chair

Re: HSIRB Project Number 02-06-12

This letter will serve as confirmation that your research project entitled "After Turning Points: Evidence of the Adoption of Middle School Reforms in the United States, 1987-1995" has been approved under the exempt category of review by the Human Subjects Institutional Review Board. The conditions and duration of this approval are specified in the Policies of Western Michigan University. You may now begin to implement the research as described in the application.

Please note that you may only conduct this research exactly in the form it was approved. You must seek specific board approval for any changes in this project. You must also seek reapproval if the project extends beyond the termination date noted below. In addition if there are any unanticipated adverse reactions or unanticipated events associated with the conduct of this research, you should immediately suspend the project and contact the Chair of the HSIRB for consultation.

The Board wishes you success in the pursuit of your research goals.

Approval Termination: June 20, 2003
BIBLIOGRAPHY


Bibliography—Continued


Bibliography—Continued


Bibliography—Continued


