

**THE EFFECTS OF THE MIDDLE SCHOOL CONCEPT ON STUDENT  
ACHIEVEMENT AS IDENTIFIED BY PRINCIPALS AND THE ACADEMIC  
EXCELLENCE INDICATOR SYSTEM (AEIS) REPORTS IN SELECTED  
MIDDLE SCHOOLS IN TEXAS**

A Dissertation

by

ROBERT CLINTON BRUNDRETT

Submitted to the Office of Graduate Studies of  
Texas A&M University  
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

December 2004

Major Subject: Educational Administration

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## ABSTRACT

The Effects of the Middle School Concept on Student Achievement as Identified by Principals and the Academic Excellence Indicator System (AEIS) Reports in Selected Middle Schools in Texas. (December 2004)

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The purpose of this study was to investigate the possible relationship between the level of implementation of the middle school concept and student achievement.

The level of implementation of the middle school concept was determined by the Texas Assessment of Middle Level Schools (TAMLS) which was completed by a random sample of middle school principals from across Texas. Student achievement and selected demographic data were obtained from the Academic Excellence Indicator System (AEIS) reports on the various campuses as published on the Texas Education Agency (TEA, 2003a) website.

Student achievement, school size, and demographic variables were investigated using frequency counts, mean scores, standard deviations, analysis of variance (ANOVA), and Pearson product-moment correlations across

independent variable categories. The independent variable categories were the five criteria and the total score as rated by principals on the TAMLS survey.

Major research findings of this study include:

1. Relationships were found between the TAMLS criteria of developmental responsiveness and teacher preparation and professional development with student achievement across all of the research questions examined.
2. Relationships were found between school size, the TAMLS criteria and student achievement.
3. Relationships were found between student ethnicity, the TAMLS criteria, and student achievement.

The study results with regard to the relationship between the level of implementation of the middle school concept, taken in its totality, are inconclusive. This finding is supported in a review of the literature.

Based on the findings of the study, researcher recommendations include:

1. Middle schools involved in reform efforts to improve student achievement should focus their efforts in the areas of developmental responsiveness and teacher professional development.

2. Principals of large middle schools ( $n \geq 801$  students) should consider the implementation of the middle school concept as a design strategy when reform efforts are undertaken.

## DEDICATION

This dissertation is dedicated to my loving wife and best friend, Lisa and my beautiful daughter, Avery. Without their love and support neither the coursework nor this dissertation would have been completed.

This dissertation is also dedicated to my late father, John C. Brundrett, who always dreamed that at least one of his children would reach this level of academia. His wish has now come true.

Finally, this dissertation is dedicated to the young adolescents of the state of Texas to whom I have dedicated my professional life. I have, and still do, find them and all of their quirks to be fascinating. It is my hope that these words will somehow positively impact their education.

## ACKNOWLEDGEMENTS

This dissertation would not have come to fruition were it not for the support of many people. I truly hope that in the acknowledgements that follow that I do not forget someone.

I owe a great deal to my long time friends and colleagues, Dr. Cecil Floyd, Executive Director of the Texas Middle School Association, and Mr. Tom Leyden, Director of Middle Level Services for the Texas Association of Secondary School Principals. They helped conceive the study and have always been there to listen to me when I needed to talk.

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I also owe a great deal to my committee chair, Dr. Stephen L. Stark. He has provided unending support and guidance from before my first class in the program through the defense of this dissertation.

Further, I would like to thank Dr. Julian Trevino for his support throughout the course of my studies. His quiet questioning taught me how to think differently and continually challenged me to deepen my level of understanding. Dr. G. Patrick Slattery, Jr. has become a friend and colleague during our time spent together in this process. Additionally, I truly appreciate Dr. Walter Stenning. His patience helped a sometimes nervous student through the research design and development phase of this dissertation. He always took the time to listen and kept me focused on the prize. These men have helped me achieve this personal and professional educational milestone.

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through the IRB process and was a tremendous force in making sure the process went smoothly.

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## CHAPTER I

### INTRODUCTION

At the beginning of the twentieth century the public schools were organized into elementary schools and high schools. The first junior high schools were opened in the United States during the 1909-1910 school year (Clark & Clark, 1994). Many believe that the junior high school emerged as an option for serving young adolescents in a developmentally appropriate manner. In actuality, the creation of the junior high school occurred as more of a social solution rather than an educational reform with advocates pushing agendas such as abolishing child labor, college preparation, vocational guidance, and relieving overcrowding at elementary schools (Beane, 1999a).

The middle school movement as it is known today began in the 1960's (Brockett, 1998; Dickinson, 2001; Mizell, 2002) as a response to the apparent disconnect between the educational programs found in the junior high schools and the developmental needs of 10 to 14 year-old students (Clark & Clark, 1994; Mizell, 2002). Those that advocated for the shift to middle schools argued for a

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The style and format of this dissertation will follow that of the *Journal of Educational Research*.

school that would primarily encompass grades six to eight. Such schools would include practices designed to deal with students entering and passing through pubescence and that were in transition from elementary school to high school (Clark & Clark, 1994; Lounsbury, 1997; Slattery, 1999). This movement from the junior high school to the middle school is a grassroots effort led by teachers and principals that is unique in the history of school reform (Lounsbury 1997; Russell, 1997). Of the 12,000+ schools serving middle school students across the country, the great majority of these schools are now configured to serve grades six through eight (Brockett, 1998; Clark & Clark, 1994; Jackson & Davis, 2000; McEwin, Dickinson, & Jenkins, 2003; Russell, 1997).

In response to the educational reform movement begun in the early 1980s, the Carnegie Corporation of New York created the Council on Adolescent Development in 1986. The council established a Task Force on Education of Young Adolescents which in 1989 issued the groundbreaking report, *Turning Points: Preparing American Youth for the 21<sup>st</sup> Century* (Jackson, 1991, Jackson & Davis, 2000, Powell & Van Zandt-Allen, 2001). *Turning Points* (Carnegie Council on Adolescent Development, 1989) suggests that the following are the necessary components of a developmentally appropriate middle school: creating communities for learning, teaching a core of common knowledge, ensuring



success for all students, empowering teachers and administrators, preparing teachers for the middle grades, improving academic performance through better health and fitness, reengaging families in the education of young adolescents, and connecting schools and communities (Carnegie Council on Adolescent Development, 1989; Hamburg, 2000; Jackson & Davis, 2000). These recommendations became the guiding principles of the middle grades reform movement in the 1990's (Jackson & Davis, 2000).

In an effort to examine the effectiveness of the *Turning Points* (Carnegie Council on Adolescent Development, 1989) recommendations, a new comprehensive research study began in 1996. Again supported by the Carnegie Corporation of New York, this study entitled *Turning Points 2000: Educating Adolescents in the 21<sup>st</sup> Century* was completed. *Turning Points 2000* (Jackson & Davis, 2000) generally supports the original recommendations. It does; however, refine and make more specific the language found in the initial report.

Additionally, *Turning Points 2000* issues a call for sustained effort in pursuit of an equitable education for every student (Elmore, 2000b; Jackson & Davis, 2000).

The middle school concept is an integrated approach that seeks to be supportive of the affective needs of young adolescents while providing for a rigorous academic program (Clark & Clark, 1994; Lipsitz, Mizell, Jackson, &

Austin, 1997; Dickinson, 2001; Elmore, 2000a; Lounsbury, 1997). There is a large amount of qualitative research that supports middle school practice (Lounsbury, 1997). Unfortunately, there is little quantitative research available on the performance of middle schools and where it is available many of the data are less than flattering (Cooney, 1998; Dickinson, 2001; Felner, Jackson, Kasak, Mulhall, Brand, & Flowers, 1997; Mizell, 2002). In fact, schools that are developmentally responsive in their design may not be inherently strong academically. Such schools must develop collaborative work structures and consistent approaches to teaching and learning (Morocco, Clark-Chiarelli, Aguilar, & Brigham, 2002).

This lack of performance combined with the emergence of state assessment and accountability systems, has caused a growing sense of dissatisfaction with the concept of middle school education (Cooney, 1998; Norton, 2000). As if middle schools did not have enough to deal with in working through the issues that surround their students, they are also being asked to implement change processes that are often times imposed by outside forces on their internal systems. These changes and their resultant accountability often affect everyone in the school system from students to the superintendent (Davis, 2001a; Rycik, 2001). In light of these pressures, there exists a need to know if the

middle school concept works to produce healthy adolescents that are prepared academically and socially to meet the challenges of the future (NMSA Research Committee, 2003).

### **Statement of the Problem**

There seems to be a misunderstanding regarding the middle school concept: that implementing some is better than none. In fact, the development of the concept of middle school education is like none ever seen before (Dickinson, 2001). The concept encompasses organizational, curricular, instructional, and relational environments that must co-exist in order to be effective (Felner, et al., 1997). The majority of the research on middle level education has been conducted on particular portions of the process with little attention paid to the impact on student achievement. Very few studies have been done on the middle school concept in totality and its impact on students and learning (Dickinson, 2001; Russell, 1997) and even fewer have produced results which can be generalized (Hough, 2003).

## **Purpose of the Study**

This study examined the relationship between the level of implementation of the middle school concept as reported by principals and as measured by campus performance data reported in the Academic Excellence Indicator System (AEIS) in selected middle schools in the state of Texas. In addition, this study examined the impact of school size and the degree to which selected demographic variables impacted the relationship between the middle school concept and campus performance data reported in the Academic Excellence Indicator System (AEIS) in selected middle schools in the state of Texas.

More specifically, the study addressed the following research questions:

1. What is the effect of the level of implementation of the middle school concept on campus performance data as identified by principals and reported in the Academic Excellence Indicator System (AEIS) in selected middle schools in the state of Texas?
2. To what extent does school size impact the relationship of the level of implementation of the middle school concept as identified by principals have on campus performance data reported in the

Academic Excellence Indicator System (AEIS) in selected middle schools in the state of Texas?

3. To what extent do selected demographic variables have on the level of implementation of the middle school concept as identified by principals have on campus performance data reported in the Academic Excellence Indicator System (AEIS) in selected middle schools in the state of Texas?

### **Assumptions**

1. The respondents surveyed will understand the scope of the study, the language of the instrument, will be competent in self-reporting, and will respond objectively and honestly.
2. Interpretation of the data collected accurately reflects the intent of the respondent.
3. The methodology proposed and described here offers a logical and appropriate design for this particular research project.
4. There is no specific training or certification program for middle school principals in the state of Texas and the middle level teacher certification program was instituted in 2001. As a result, persons

serving as principals of middle schools are largely self-taught with regard to the middle school concept through activities such as professional development, reading appropriate literature, and interacting with more experienced colleagues. Thus, the knowledge of survey respondents with regard to the middle school concept will vary and may cause their responses to be biased due to this lack of formalized training or preparation.

### **Limitations**

1. This study is limited to the selected number of middle schools within the state of Texas.
2. This study is limited to the information acquired from the literature review and survey instruments.
3. Findings may be generalized only to middle school campuses within the state of Texas.

### **Operational Definitions**

Academic Excellence Indicator System (AEIS): The state-level database of information regarding all independent school districts and public school

campuses in Texas. This information is available on an annual basis on the Texas Education Agency (TEA) website.

Campus Performance data: Student performance data on the Texas Assessment of Knowledge and Skills (TAKS) summed across grade levels.

Demographic Variables: For the purposes of this study, the following campus variables will be analyzed: school size, ethnic distribution, attendance rate, percentage of economically disadvantaged students, percentage of limited English proficient students, teachers by years of experience, and expenditures per pupil. The data source for these variables will be the 2002-03 Academic Excellence Indicator System (AEIS) reports for the respective campuses.

Effects: Something brought about by a cause or agent; a result (www.dictionary.com, 2003).

Level of Implementation: The degree to which the middle school concept has been put into practice on the selected campus as reported by the principal.

Middle School Concept: The collection of recommendations found in *Turning Points: Preparing American Youth for the 21<sup>st</sup> Century* (Carnegie Council on Adolescent Development, 1989) that include: creating communities for learning, teaching a core of common knowledge, ensuring success for all students, empowering teachers and administrators, preparing teachers for the middle

grades, improving academic performance through better health and fitness, reengaging families in the education of young adolescents, and connecting schools and communities (Carnegie Council on Adolescent Development, 1989). These eight recommendations have been collapsed into four broader categories by the National Forum to Accelerate Middle-Grades Reform (2003): academic excellence, developmental responsiveness, social equity, and organizational structures and processes. With the addition of a fifth category of teacher preparation and professional development by the researcher, these categories will serve as the criteria of the study instrument.

Principal: The chief instructional officer of a public school campus.

Regional Education Service Center: Twenty geographic areas divided by counties established by the Texas Legislature in 1967 to provide school districts with professional development, training, and technical assistance that supports statewide goals for school improvement (Region IV Education Service Center, 2003).

School Size: The number of students on the respective middle school campus as reported in the AEIS report.

Selected Middle Schools: Middle schools from across Texas will be asked to participate in the study through their principals. These schools will be selected



as part of a random stratified sample based on the proportion of middle schools within each of the twenty Regional Education Service Center boundaries as related to the population of middle schools in the state of Texas.

Student Performance: Campus and grade level performance on the Texas Assessment of Knowledge and Skills (TAKS) which is administered annually to all Texas students in grades 3-11.

### **Significance Statement**

Middle level education has existed in one format or another for nearly one-hundred years, yet it continues to struggle for its own identity (Clark & Clark, 1994). Its detractors argue that the middle school concept places too much emphasis on the affective and therefore lacks the rigor necessary to prepare students for high school and beyond (Beane, 1999a). Its proponents emphasize the benefits for students that have the opportunity to learn in a developmentally appropriate environment that allows the students to have a voice in their education (Powell, 2001).

Although the body of research on the middle school concept is growing, the majority of the studies are, as of late, qualitative in nature. If quantitative work is done, it tends to be done on components of the concept rather than on

the concept as a whole (NMSA Research Committee, 2003). This study seeks to determine the effects of the implementation of the middle school concept as identified by principals on student achievement as reported by the Academic Excellence Indicator System in selected Texas middle schools.

This completion of this study will contribute to the limited literature and body of knowledge concerning the middle school concept, taken in its totality, and its effect on student performance in Texas middle schools. As a quantitative examination of this relationship, the study will further assist in increasing the literature base by filling an identified void. Finally, the results of this study may assist educators in their efforts to determine the appropriateness of implementing the middle school concept in their school districts.

### **Organization of the Dissertation**

The dissertation is divided into five chapters and organized in the following manner: Chapter I contains an introduction to the study, statement of the problem, statement of the purpose, research questions to be investigated, assumptions, limitations, definition of terms, and a significance statement.

Chapter II consists of a review of the literature germane to the middle school concept. Chapter III contains a description of the general procedures,

instrument, research methodology, and design of the study. Chapter IV is a presentation and an analysis of the data obtained in the study. Chapter V contains a summary of the results, conclusions, recommendations based on the study, the application of the findings of the study, recommendations for further research, and recommendations for improving the current methodology.

## **CHAPTER II**

### **REVIEW OF LITERATURE**

In this study, the impact of the middle school concept on student achievement at selected Texas middle schools was examined. This chapter was provided to summarize information gathered through a review of literature related to the constructs contained in this study. The chapter begins with an historical perspective regarding the evolution of the middle school concept in the 21<sup>st</sup> century. The literature regarding the components of the middle school concept and their impact on student performance was then examined.

#### **Historical Perspective**

At the beginning of the 20<sup>th</sup> century, the public schools were divided into two levels: elementary and secondary. The elementary schools served grades one through eight and the secondary schools served grades nine through twelve (George & Alexander, 2003).

Studies of education during this time period established the need for a level of education that would assist in the transition from elementary school to high school (Eichhorn, 1966/1987). The initial redesign of the educational model

included a shift from the traditional grouping of grades to one that placed grades one through six together and added grades seven and eight to the secondary school. This change was intended to increase academic rigor, reduce drop-out rates and prepare students for work (Powell & Van Zandt-Allen, 2001; Toepfer, 1997).

The second iteration of grade configurations began shortly after the conclusion of World War I and continued into the 1950s. This version of school organization placed grades one through six in elementary school, grades seven through nine in junior high school, and grades ten through twelve in high school (George & Alexander, 2003). The isolation of grades seven, eight, and nine in the junior high school was centered on job readiness. By including more high school subjects in grades seven and eight and by making grade nine the culmination of the grade configuration, educators felt that students leaving school to go to work or those continuing on to high school would be better prepared (Erb, 1997).

In addition to job preparedness, the proponents of the junior high model sought to create a learning environment that included:

- recognizing and accommodating the special nature of early adolescence, including physical, social, intellectual, and emotional needs;

- responding to individual differences in aptitude, interest and ability;
- providing opportunities for exploration of occupations and avocations;
- providing adult guidance to young adolescents on academic, social, and moral issues;
- enriching and strengthening the curriculum and instruction offered in the junior high schools, in ways suitable to the age group; and
- staffing the schools with teachers, and even administrators, specially trained to work with young adolescents. (Davis, 1996, pp. 25-26)

In the long run, however, the junior high school created by this model tended to utilize a content-centered approach to instruction with departmentalized teachers and academically tracked students that generally resembled the high school (Powell & Van Zandt-Allen, 2001). In fact, the standardization, conformity, and uniformity traditionally demanded by American secondary schools led to the downfall of the junior high school model as criticism of this educational institution began to mount as early as the 1940s (Lounsbury, 1983; Powell & Van Zandt-Allen, 2001).

The 1960s served as the host for the next round of reform for grade configurations of America's schools. It appears that William Alexander gave the "middle school" its first public exposure during a speech at Cornell University in 1963 (McEwin, 1992). Donald Eichhorn followed shortly thereafter with a

formal proposal to the Pennsylvania State Department of Education for a new grade configuration of school that would include grades six through eight, thus making the elementary school grades one through five and the high school grades nine through twelve (George & Alexander, 2003). Interestingly, Eichhorn's proposal sounds remarkably similar to the supporters of the junior high school some forty years prior. He states:

We are proposing that the school be comprised of grades 6-7-8. The reasons why we believe that this program is desirable and educationally sound are as follows:

1. From the physical and psychological point of view it is a more natural grouping. There appears to be less of a differential in maturity between the sixth and eighth grade than between the seventh and ninth grade.
2. The social patterns are more nearly the same in grades 6, 7, and 8 than in the conventional pattern of grades 7, 8, and 9. The social maturity of the ninth grade student more nearly parallels that of the older students. A better social program could be carried on without the ninth grade student.
3. The transition from the self-contained classroom to a departmentalized program may be more gradual (George & Alexander, 2003, p. 42)

The new "middle school" model began rapidly replacing the junior high organizational structure with a recent study revealing that 13,512 schools nationwide are now categorized in this manner (McEwin, et al., 2003).

Interestingly, the call for change to the new middle school model rests on a belief structure that seeks to create a developmentally responsive,

psychologically relevant learning environment for students (Slattery, 1999; Van Zandt & Totten, 1995). Post-modern America requires a school that can meet the needs of a rapidly-changing and ever-growing population of students. The new middle school is organized around teams of teachers that serve the same group of students for the core subjects, a flexible academic day that can vary based on student needs, the ability to group and re-group students as needed, and proximity-based room assignments for increased collaboration in curriculum, assessment, and instruction (Erb, 1997).

While there appeared to be general consensus as to the components of the middle school concept and the needs of the adolescent (Anfara & Brown, 2000; Van Zandt & Totten, 1995), the middle school movement really began in the 1980s on a nationwide basis. Spurred on by the release of *A Nation at Risk* in 1983, the eighties became a decade of educational reform culminating, from a middle school perspective, with the release of the Carnegie Corporation's document entitled *Turning Points: Preparing American Youth for the 21<sup>st</sup> Century* in 1989 (Powell & Van Zandt-Allen, 2001).

*Turning Points* (1989), based on two years of work by the Carnegie Task Force on the Education of Young Adolescents, made eight recommendations regarding the schools serving students ages ten to fifteen (Davis, 2001a).



Specifically, the task force calls for middle schools that create small communities for learning, teach a core academic program, ensure success for all students, empower teachers and administrators to make decisions about the experiences of middle grade students, staff middle grade schools with teachers who are expert at teaching young adolescents, improve academic performance by fostering health and fitness, reengage families in the education of young adolescents and connect schools with communities (Carnegie Council on Adolescent Development, 1989).

To assist with the implementation of the *Turning Points* (Carnegie Council on Adolescent Development, 1989) recommendations, the Carnegie Corporation funded the state departments of education of 27 states with two-year planning grants. Following this initial cycle, fifteen of the states received continuation grants in two-year cycles from 1991 through 1999. The results of this work varied greatly from state to state with the final outcome being the publication *Turning Points 2000: Educating Adolescents in the 21<sup>st</sup> Century*, again funded by the Carnegie Corporation of New York (Jackson & Davis, 2000).

In *Turning Points 2000*, Jackson and Davis summate the information generated by the various state initiatives, compare the results to the original *Turning Points* (Carnegie Council on Adolescent Development, 1989)

recommendations and refine those recommendations based on an exhaustive review of the middle grades literature generated during the 1990s. In a significant finding, the authors recognize and emphasize that the original recommendation of “ensuring success for all students” (Carnegie Council on Adolescent Development, 1989, p. 9) is “not a spoke on the wheel of improving middle grades schools: it is the hub” (Davis, 2001b, p. 220). This acknowledgement leads the authors to convert the series of recommendations from the earlier report into an interdependent system whose component parts are inextricably linked to the central hub of ensuring success for every student (Davis, 2001b; Jackson & Davis, 2000).

Seconding the systemic notion of the middle school concept, Thomas Dickinson (2001) writes:

The majority of middle schools are in some stage of arrested development—where the middle school concept has not been completely implemented, or where it was once implemented and now has grown static and unresponsive...What misleads many middle level educators, seduces may be a better word, is the feeling that some is better than none. What they are not acknowledging, what the movement has not made a forceful argument over, is that the original concept is a totally integrated ecology of schooling, the likes of which we have never seen before. (p. 4)

In discussing their thirty years of advocacy of middle level schools, the National Middle School Association (2003) concurs with the idea that the middle

school concept is best implemented with the component parts working in concert with one another as part of an interdependent whole. Additionally, McEwin, et al., (2003) call for deliberate efforts toward the implementation of the concept in its totality when they say “half-measures lead only to partial implementation and result in limited success.” (p. 66)

The recognition and support of the systemic nature of the middle school concept in the literature validates the primary hypothesis of this dissertation: that the level of implementation of the middle school concept on a particular campus should have a direct influence on the performance of students on that campus.

Specifically, the *Turning Points 2000* recommendations—now referred to as design elements—of the middle school concept are as follows: teach a curriculum grounded in rigorous, public academic standards; use instructional methods designed to prepare all students to achieve higher standards and become lifelong learners; staff middle grades schools with teachers who are expert at teaching young adolescents; engage teachers in ongoing, targeted professional development opportunities; organize relationships for learning to create a climate of intellectual development and a caring community of shared educational purpose; govern democratically, through direct or representative

participation of all school staff members; provide a safe and healthy school environment as part of improving academic performance and developing caring and ethical citizens; and involve parents and communities in supporting student learning and healthy development (Jackson & Davis, 2000).

The 20<sup>th</sup> century saw significant changes in the grade configurations of America's public school systems. All of these changes have been well-intentioned and, at some level, have been for the betterment of the students. Since the beginning of the middle school reform movement, educators have worked diligently to truly change the face of education for young adolescents. In fact, the change that has occurred in school climate, organization, and collaboration among teachers has been no less than dramatic (Beane, 1991).

However, the parallels between the junior high school movement and the middle school movement cause one to wonder if the "new" middle school will thrive or face the same fate as its predecessor (Davis, 1996; George & Alexander, 2003). Perhaps, as Dickinson (1991) mentioned above, a more systemic approach to implementation will change the level of success for schools serving young adolescents.

## **Components of the Middle School Concept**

The discussion in this portion of the review of literature is organized by the five criteria of the study instrument entitled the Texas Assessment of Middle Level Schools (TAMLS) [see Appendix A]. These criteria are: academic excellence, developmental responsiveness, social equity, organizational structures and processes, and teacher preparation and professional development. As previously discussed, this study is focused on the middle school concept as a whole. Due to the interdependent nature of the concept, various segments of the same systemic design element will be discussed in multiple sections of the review.

### **Criterion One: Academic Excellence**

Beginning in the 1990s, middle schools were challenged to re-invent themselves. Key components of this work were efforts to change organizational structures, improve their culture, and improve student performance (Miller & Hoy, 2000). Academic excellence in 21<sup>st</sup> century middle schools is non-negotiable and complex as it requires a balance between curriculum standards and their implementation in the classroom (Manzo, 2001). In fact, high-performing middle

schools that exhibit academic excellence are focused on student mastery of a rigorous course of study. The adults in the building must pay close attention to the curriculum, instruction, and assessment programs presented to the students (Lipsitz, et al., 1997).

### *Curriculum*

Fundamental to the construct of academic excellence is that of curriculum design. Most serious discussions of middle school curriculum center on whether the curriculum should be interdisciplinary or subject-centered in its approach (Ames, 1999; Beane, 1997; Vars, 1997).

Advocates of interdisciplinary instruction propose a curriculum that reaches across subject-matter lines and increases the level of interest and relevance for young adolescents that need and desire to connect the information being learned (Jackson & Davis, 2000; Simpson, 1999). Well-designed integrative curricula are most typically designed around a generative theme that serves to make deep connections in multiple academic disciplines. These curricula provide students with opportunities for active engagement in their own learning causing them to spend time at the analysis and synthesis levels of cognition (Ames, 1999).

Units designed in an interdisciplinary fashion also provide opportunities for students to be involved in long-term, group-based projects that require the mastery of essential knowledge and skills to be demonstrated in a manner other than the utilization of a paper-and-pencil test (Wiggins, 1998). Those choosing to move toward an interdisciplinary curriculum model would be well-served to remember that the subject-centered approach to curriculum, a remnant of traditional secondary school education, has been entrenched as the model for middle schools so deeply and for so long that it will be difficult to change (Beane, 1991).

Teachers involved in the development of team-based interdisciplinary units often benefit from the experience as they increase their own knowledge of their academic discipline and those taught by their colleagues. Implementing the units often causes teachers to deepen their understanding of young adolescents as they monitor and adjust the instructional plans based on the level of student success. These activities intensify the levels of communication and understanding and foster the development of trust between professional colleagues (Jackson & Davis, 2000). In the end, teacher efficacy increases as their knowledge of students, content, and pedagogy increases as a result of utilizing interdisciplinary curriculum (Ames, 1999).

Advocates of single–subject curriculum design often cite the requirements of local, state, and national standards as a reason for using this approach. They argue for the need to reach to new depths of understanding in each content area in order to demonstrate mastery on externally mandated assessments (George & Alexander, 2003; Jackson & Davis, 2000).

The subject–centered curriculum is most closely associated with the junior high school. This model is departmentalized for instruction and favors content over student needs (George & Alexander, 2003). Subject–centered curriculum asks students in the middle school to take on blind faith that the myriad of facts, figures, and skills they are required to learn have some connection and meaning (Beane, 1991). Proponents of this model must remind themselves that there is no subject, in and of itself, that is necessarily good for all students at a given time. The appropriateness of a subject is based upon the needs and capacities of the student at a given moment (Dewey, 1938/1997).

An historical look at curriculum integration reveals that these efforts date back to the 19<sup>th</sup> century with the most important efforts occurring during the progressive movement of the 1930s and 1940s (Vars, 1991; Wraga, 1996). Middle schools in this era worked to develop a program of common learnings that focused on themes significant to society and individuals in that society (Bohan,



2003). Learning activities were planned collaboratively by students and teachers in learning communities without regard for individual subjects (Beane, 1991, 1998). This type of curriculum will move from one that is mechanically pieced together to one connected by the mutual affinities of the various subjects in a much more natural way of organization (Dewey, 1908/2002).

An integrative curriculum model such as this was necessarily based on the level of collective experience of the faculty and students. Experience, in this context, serves as the source of problems to be solved by the students. Problems solved then in turn serve to create the next set of problems. In essence, education based on experience is a never-ending spiral (Dewey, 1938/1997). In addition to increasing the relevance for students, a curriculum unified in this manner was the key to dealing with the rapid growth in numbers of students entering and staying in the public schools during the progressive era (Powell & Van Zandt-Allen, 2001).

Jackson and Davis (2000) speak to the topic of curriculum design at length. They place great emphasis on the role of standards in assuring equity and excellence for every student engaged in learning in a high-performing middle school. Specifically, they state: "Curriculum defines the specifics of what students should learn: the concepts and generalizations, the related topics and

facts, and the skills and habits of mind that will enable learning. Curriculum based on standards defines in exact terms what students should know and be able to do” (p. 40). Schools that truly understand curriculum know the power of depth over breadth of content and use that deep understanding of key concepts by students to integrate the curriculum across content areas to insure complete understanding.

In 2003, C. Kenneth McEwin, et al., reported on the fourth iteration of a comprehensive national study of middle grades education. Dating back to 1968, this study has been replicated over time to show implementation trends for the various components of the middle school concept. Table 1 presents the study data on interdisciplinary instruction.

**TABLE 1. Percentage of Time Spent in Interdisciplinary Instruction in Middle Schools: 1993 and 2001.**

Percent of Time Spent in Interdisciplinary Instruction in Middle Schools	Percentage of Middle Schools Reporting the Amount of Time Spent in Interdisciplinary Instruction in 1993 and 2001	
	1993	2001
1-20	60	44
21-40	24	35
41-60	8	12
61-80	5	6
81-100	3	3
Total	100	100

Data Source: America’s Middle Schools in the New Century: Status and Progress (2003)

These data indicate that the time spent by the 746 middle schools returning their surveys has increased since 1993. Additionally, the percentage of schools spending a greater part of their day engaged in interdisciplinary instruction has increased in all but the 81-100% category of time (McEwin, et al., 2003).

### *Instruction*

Academic excellence in the middle level school is also inextricably linked to the instructional practices in place on the school campus and the frequency and regularity of time these practices are employed. *Turning Points 2000* advocates that schools “use instructional methods designed to prepare all students to achieve higher standards and become lifelong learners” (Jackson & Davis, 2000, p. 9). Captivating instruction will focus on meeting students at their level of readiness to master the required concepts. Quality instruction is student-centered, provides a variety of pathways for students to meet the learning objectives, is organized around logical concepts, is challenging for all levels of students in the classroom, and is relevant to student interests (Jackson & Davis 2000). Additionally, instruction in high-performing middle schools is

planned to enhance and support the distinctive developmental and learning characteristics of young adolescents (NMSA, 2003).

Adolescents are capable of cognition of a very high degree. Through the development of concrete learning strategies, students understand both direct and inverse relationships and possess the ability to classify based on characteristics other than basic appearance (Eichhorn, 1966/1987). With regard to instruction, William James (1899/1992) states "...in teaching, you must simply work your pupil into such a state of interest in what you are going to teach him that every object of attention is banished from his mind; then reveal it to him so impressively that he will remember the occasion to his dying day; and finally, fill him with the devouring curiosity to know what the next steps in connection with the subject are" (p. 718). He goes on to say "*No reception without reaction, no impression without correlative expression*" (p. 733) [emphasis in original]. In other words, teaching occurs when students react to the construct being taught. There should be some type of noticeable motor response (e.g., speaking or acting) that indicates that the student has received and internalized the information. Given the nature of the adolescent, such reactions will be easily detected when a concept is grasped.

McEwin, et al., (2003) studied the use of four types of instructional strategies in middle schools. These strategy types were:

- Direct instruction (teacher presentation, drill, practice, etc.)
- Cooperative learning (structured group work and rewards for achievement)
- Inquiry teaching (gathering information, deriving conclusions)
- Independent study (working individually on selected or assigned tasks (p. 31))

The study data are delineated in Table 2 below:

**TABLE 2. Percent of Middle Schools Utilizing Selected Types of Instructional Strategies by Grade Level: 1993 and 2001.**

Type of Instructional Strategy	Grade Level											
	Fifth Grade						Sixth Grade					
	1993			2001			1993			2001		
	RA	OC	RG	RA	OC	RG	RA	OC	RG	RA	OC	RG
Direct Instruction	2	12	86	2	13	85	1	10	88	1	12	87
Cooperative Learning	3	46	51	3	34	63	3	43	54	1	38	61
Inquiry Teaching	13	59	28	6	58	36	9	56	34	8	50	42
Independent Study	39	48	13	19	43	38	31	51	18	18	51	31

RA: Rarely or Never      OC: Occasionally      RG: Regularly

**TABLE 2. Continued.**

Type of Instructional Strategy	Grade Level											
	Seventh Grade						Eighth Grade					
	1993			2001			1993			2001		
	RA	OC	RG	RA	OC	RG	RA	OC	RG	RA	OC	RG
Direct Instruction	1	9	90	1	11	88	1	8	91	1	11	88
Cooperative Learning	3	47	50	<1	40	60	4	48	48	1	40	59
Inquiry Teaching	10	56	35	0	48	45	10	56	34	8	47	45
Independent Study	29	51	20	17	51	32	19	51	20	17	51	32

RA: Rarely or Never    OC: Occasionally    RG: Regularly

Data Source: America's Middle Schools in the New Century: Status and Progress (2003)

These results show that the most frequently used instructional strategy in the responding middle schools was direct instruction. Cooperative learning, independent study, and inquiry teaching also show increases in use from 1993 to 2001 (McEwin, et al, 2003).

### *Assessment*

Completing the learning process is the construct of assessment. What is planned and delivered must be monitored to assure mastery of the standards by every student. Learning occurs by attempting to answer part of a question, finding an answer and then seeking answers to the other emerging parts of the question (James, 1899/1992).

Grant Wiggins (1998) states “the aim of assessment is primarily to *educate* and *improve* student performance, not merely to *audit* it” (p. 7) [emphasis in original]. To this end, Wiggins envisions an assessment process that provides students with the assessment criteria and options for demonstrating mastery prior to the delivery of instruction. The assessment design should be based on the desired outcomes as determined by the standards being taught and should be crafted prior to the instructional strategies being determined. Jackson and Davis (2000) refer to this model as “backward design” (p. 32). When utilized correctly, the academic achievement of the students can show a marked increase as intentionally planned assessments that incorporate authentic modalities such as portfolios, presentations, and projects increase the depth and complexity of student work and their level of understanding (Jackson & Davis, 2000; NMSA, 2003; Wiggins, 1998).

Middle schools choosing to use authentic assessment methods to monitor student progress are cautioned to remember that the construct is easier to propose than to implement. Parents must be educated to understand the process and its components so they can be of assistance to their children. Teachers and administrators must understand that the design and implementation process is time consuming and difficult. Finally, students must understand the various

assessment options available for their selection, the points in the process designed to allow formative evaluation, and the expectations for the final product (Clark & Clark, 1994).

Choosing to use alternative authentic assessment devices does not preclude the use of paper-and-pencil tests. However, high levels of student performance requires deep understanding of the learning standards. If this assessment modality is determined to be appropriate for use, teachers must be willing to take the time required to write test items that assess more than factual knowledge (Wiggins, 1998).

The National Middle School Association (NMSA) in its position paper *This We Believe: Successful Schools for Adolescents* (2003) states:

Continuous, authentic, and appropriate assessment and evaluation measures provide evidence about every student's learning progress...Grades alone are inadequate expressions for assessing and reporting student progress on the many goals of middle level education. In fact, grades may actually work to inhibit many students' learning and development, forcing them to compete in an unequal race they know they cannot win. (p. 27)

Proponents of developmentally appropriate middle schools sing the praises of interdisciplinary instruction as mentioned above. Critics of these same schools often cite a lack of rigor in the curriculum. They point to results of tests such as the National Assessment of Educational Progress (NAEP) and the Third



International Mathematics and Science Study (TIMSS) as hard evidence that the focus in the middle grades is on the affective side of education rather than on the mastery of knowledge and skills essential for success in later life (Ames, 1999; Cooney, 1998).

What is needed, in actuality, is balance. A balance must occur between the interdisciplinary instruction and subject-centered instruction; between maintaining student interest in the school curriculum and the focus on the mastery of standards (Ames, 1997; Anfara & Waks, 2002; George & Alexander, 2003).

Middle schools across the country try to force ordinary topics into an interdisciplinary unit. This results in the creation of instructional units that are contrived and artificial (Powell & Faircloth, 1997; Toepfer, 1997). On the other hand, teachers responsible solely for a single academic area often spend great amounts of time on areas they find particularly interesting to the detriment of the remainder of the content (Van Zandt & Totten, 1995).

Teachers desiring to provide rigorous instruction for their students must have a deep personal understanding of their own academic discipline, the standards that students are expected to master, and the relationship between these two. They must be highly trained in techniques such as cooperative

learning and inquiry-based learning and be well-grounded in constructivist principles (Ames, 1999; Jackson & Davis, 2000). Finally, teachers must be committed to the creation of units that emphasize depth of understanding rather than breadth of coverage. Such efforts will result in a rigorous curriculum and high levels of student success (Beane, 1999b).

### *Instructional Time*

The remaining concept to be discussed with regard to academic excellence is that of the use of instructional time. Both *Turning Points* (Carnegie Council on Adolescent Development, 1989) and *Turning Points 2000* (Jackson & Davis, 2000) make clear calls for the use of flexible schedules in high-performing middle schools. The use of flexible schedules do not necessarily equate to the “block” schedule so prevalently used in middle schools across the country. In this context, a flexible schedule permits students varying amounts of time to master the lesson content. Flexibility in the use of time facilitates opportunities for the enrichment or acceleration of instruction (Brown, 2001; DeRouen, 1998).

The culture of the middle grades school should be one of flexibility and relevance. Students must feel free to interact with their teachers and vice-versa. Additionally, the concept of flexibility can be enhanced by setting realistic

short-term curricular goals of interest to the student instead of long-term teacher-centered expectations for learning. Such flexibility should allow for student freedoms without chaos and should foster curiosity, creativity, and independence (Eichhorn, 1966/1987).

Flexible scheduling facilitates the delivery of integrated curricula, individualized instruction, and time for students to reflect and collaborate. Changes can be made daily or weekly based on the instructional needs of students (Brown, 2001). Additionally, teachers should have the ability to alter the length of class periods and to re-group students as necessary to allow students to optimize the curricular experience (Eichhorn, 1966/1987).

Students and teachers in transformed middle schools are organized into academic teams that feature a set of teachers that represent the core academic subjects that will in turn serve a consistent set of students for those subjects (Carnegie Council on Adolescent Development, 1989). This same report advocates that time in the core subjects should be determined by the teacher teams and should increase or decrease depending on the needs of the students and the time needed for instruction. Jackson and Davis (2000) expand on this belief by further granting to the teams the ability to reorder the core classes as needed to allow for maximum student success. Such an approach allows

students on the respective academic teams to spend large amounts of time together thus also serving to assist in the personalization of the learning environment.

While curriculum, instruction, assessment, and flexibility are all key components that contribute directly to the level of student success, all of them are impacted directly by the educational environment of the 21<sup>st</sup> century. Davis (2001) states:

The standards-based reform movement—with its emphasis on knowledge and skills, assessment, and high-stakes accountability for both schools and students—threatens to drown out the voices of missionaries focused on developmental responsiveness. The middle school ideology has centered essentially on children and curriculum. It potentially puts us at a disadvantage as the tide of standards and testing gains ground among the public and the politicians. (p. 255)

Integrative curricula are becoming a more widely accepted as an option to the traditional middle school curricula. Although difficult to implement in states possessing high-stakes accountability systems, integrative approaches appear to have the potential to improve student learning and performance (Powell & Skoog, 2000). In many places curriculum design has been reduced to the managerial task of standards alignment and test preparation (Beane, 1998). In others the implementation of state and national testing and the standardized

curriculum that supports it is being followed by the elimination of many middle level practices in schools in the name of increasing student performance and academic rigor (Beane, 1999a). Only in due time will this issue be resolved.

### **Criterion Two: Developmental Responsiveness**

The literature on middle schools is replete with references to the developmental responsiveness as it applies to the climate, culture, and organizational characteristics of schools for young adolescents. In this context, developmentally responsive middle schools are best defined as schools that are deliberately designed to serve students between ten and fifteen years of age that are experiencing rapid changes in the areas of physical, emotional, social, and cognitive growth (Ames, 1999; Brown, 2001; Carnegie Council on Adolescent Development, 1989; Jackson & Davis 2000; NMSA, 2003; Urdan & Klein, 1999).

Such schools must be intentionally structured to be safe, caring, and nurturing environments that anticipate students' needs. The buildings should be clean, well-lit, and in decent repair regardless of their age. The academic climate should foster high expectations for every student and be prepared to assist those students struggling to meet the challenges set forth. All adults in the building must model desired behaviors, be service-oriented, possess a sense of humor,

and be dedicated to meeting the needs of their students (Carnegie Council on Adolescent Development, 1989; Clark & Clark, 1994; Eccles & Wigfield, 1997; Johnston, 1985; Lipka, 1997).

Additionally, the developmentally appropriate middle school bases its organizational structure on the tenets as proposed in *Turning Points* (Carnegie Council on Adolescent Development, 1989) and modified through continued research: creating small communities for learning, teaching a core academic program, ensuring success for all students, empowering teachers and administrators, staffing middle grades schools with teachers expert at teaching adolescents, improving academic performance through better health and fitness, reengaging families in the educational process and working to connect schools and communities (Felner, et al., 1997; George & Alexander, 2003; Jackson & Davis, 2000; Lipsitz, et al., 1997). These developmentally appropriate middle schools have programs such as advisor–advisee, interdisciplinary teaming, flexible scheduling, and an exploratory curriculum for these are the programs that help distinguish these schools from the “old” junior high school and the high school (Anfara & Waks, 2002).

Patrick Slattery (1999) describes the developmentally appropriate middle school well when he states “those who live and work with middle school

children understand that the middle is a place of becoming and not a rigid point of arrival” (p. 32). Schools that commit to organize themselves to truly serve this population of students should base their educational programs on meeting the needs of a population that is at multiple places at the same time (Eichhorn, 1966/1987). These schools should understand that they may face some resistance as this organizational structure works diligently on the affective side of education; a side that some feel should be reserved only for the home (Beane, 1999a).

As educators focus on implementing a developmentally responsive climate and culture, they must realize that they are involved in a transformation process that will change the school into a community. Communities in middle schools have many benefits for students and for everyone involved. The basic human need to belong helps to personalize the larger school. Efforts expended toward common goals serve to develop interdependent systems of operation and communication, shared values, conceptions, and ideas. These are the links which assist middle school educators and students in their transformation from individuals to communities. Fostering interdependence aids in the creation of comfortable learning environments. Though all of this sounds simple in concept, the process of transformation is difficult (Manning, 1999).

Manning (1999) goes on to describe the relationship between middle schools and communities in this manner:

In many aspects the middle school philosophy and a sense of community are synonymous—both are student-centered orientations, both attempt to ‘bring out’ the best in all people and both strive for mutual benefit and the pursuit of common goals and mutual obligations. (p. 105)

Probably the most difficult part of becoming a school community is the development of caring and supportive relationships between teachers and students (Eichhorn, 1966/1987). A focus of building relationships with students will be new ground for many adults and the attitudes of the adults in the building will either accelerate or impede the development of the community in the school (Shortt & Thayer, 1999). Howard Johnston (1985) states: “the creation of a school culture is more dependent upon the behavior of the adults in the school than on characteristics of students, economic climates of the community in which the school is located, per pupil expenditure, physical facilities, or a host of other demographic–environmental variables” (p. 8). True restructuring is not organizational but attitudinal. Such change will require a new definition of teaching (Lounsbury, 1996).



### *Teaming*

Developmentally appropriate high-performing middle grades schools are organized into small learning communities that are warm, caring places (Lipsitz, et al., 1997; Vars, 1996). At this level of schooling, smaller learning communities are defined by the use of houses and academic teams (Carnegie Council on Adolescent Development, 1989; Jackson & Davis 2000). In fact, teaming is now considered to be one of the defining characteristics of a true middle school (Van Zandt & Totten, 1995).

In a teamed middle school, the unit of organization is based on the concept of houses that theoretically should be no larger than 250 students (Jackson & Davis, 2000). Each house contains at least one interdisciplinary team and becomes a flexible learning environment for the children assigned (Erb, 1997).

Middle school interdisciplinary teams usually are made up of teachers that represent the core academic subjects of English language arts, mathematics, science, and social studies. These teachers are then assigned a team of students with whom they will work throughout the school day and school year. The team of teachers bears the primary responsibility for the academic achievement of the

assigned set of students (Erb, 1997; George & Alexander, 2003; Jackson & Davis, 2000).

A review of the *Turning Points* (Carnegie Council on Adolescent Development, 1989) reforms reveals that the most fashionable and recognizable of the recommendations is the establishment of interdisciplinary teams (Powell & Van Zandt–Allen, 2001; Rottier, 2002). Teaming aids in the transition from elementary to high school and helps meet the cognitive and affective needs of students (McEwin, 1997; Van Zandt & Totten, 1995).

Organizing middle schools around the concept of teams as opposed to the traditional departmentalized structure is considered by some to be more profound than the shift from the one–room schoolhouse to multi–classroom schools which occurred earlier in the century (Erb, 1997; George, 2001). When carefully implemented, teaming can serve as a vehicle to overcome problems experienced in the departmentalized environment. Through the increased level of communication possible, teaming helps facilitate a reduction in subject isolation and can facilitate the dialogue necessary to begin the integration of the curriculum (Toepfer, 1997).

Teaming supports the concept of developmental responsiveness by assisting in the creation of a family atmosphere that groups students in an

environment that is designed to meet their social and academic needs. When dividing a large population into smaller units, care must be given to create these units to be as equal as possible with regard to demographics and ability levels. Managed effectively, teaming breeds interdependence among students and teachers and helps prepare them for their future (DeRouen, 1998; Eichhorn, 1966/1987).

The following lessons have been learned by those that have implemented academic or interdisciplinary teaming on the middle school campus:

- Middle school teams should exist for the benefit of students and their best learning; not for the benefit of adults. While the adults will derive some benefit from working on a team, the focus must rest on the students (Dickinson, 1997).
- Middle school teams should be mission-driven and that mission should focus on students. To be mission-driven, teachers must put aside their petty disagreements and learn to listen, compromise, and discover solutions to the critical problems facing adolescents (Dickinson, 1997).
- When structured and managed correctly, teams give teachers time to analyze and solve complex educational problems. It must be

understood; however, that this is a substantive change in the way teachers work. Such a change requires continual nurturing, support, and time for the concept to evolve and become institutionalized (Erb, 1997).

- Teaming becomes the organizational system of the school. As such, it becomes difficult if not impossible to make significant improvements in a teamed middle school without improving the teams themselves (Rottier, 2002).
- Teaming is a complex process. As such, team size, common planning time, and length of time together as a team affect the level of practice of the team and classroom instruction (Flowers, Mertens, & Mulhall, 2000; Strahan, Bowles, Richardson, & Hanawald, 1997).
- Teaming is a structure that aids in the transition of students from elementary school by reducing the chances of student anonymity. It helps build a supportive climate by promoting communication, collaboration, and a sense of community for all stakeholders. Teaming also fosters professional growth, curriculum relevancy, and shared commitment among adults (Anfara & Brown, 2000).

- Teams cannot and will not succeed without constant, supportive leadership from the building principal (Rottier, 2002; Strahan, et al., 1997; Wraga, 1997).

However, the research base on the effectiveness of teaming does not match the level of advocacy found for the concept in the middle grades (Wraga, 1997). In fact, too often in the past thirty years, interdisciplinary teaming has been introduced in isolation. More often than not, the success of teaming is due to being a part of a comprehensive reform plan (McEwin, 1997).

Implementing interdisciplinary teaming does not, in and of itself, guarantee the improvement of education. Successful changes in classroom practice and the overall success of middle school programs appears to be linked to changes in the work of the team; however, the impact on student achievement is unclear (Felner, et al., 1997; Flowers, et al., 2000; Russell, 1997). Students seem to appreciate the concept as their motivation and attendance improves. Teachers also seem to benefit from increased collegiality, collaboration, and professionalism (Lounsbury, 1996; Murata, 2002; Strahan, et al., 1997; Vars, 1996; Wraga, 1997).

Interdisciplinary teaming serves as the vehicle through which all of the core subject instruction occurs (Van Zandt & Totten, 1995). Additionally, the

teams function as the primary organizational structure of the school. As previously discussed, one of the critical decisions that must be made by the team of teachers is whether some or all of the instruction will be delivered to students in a subject-centered approach or an interdisciplinary approach.

A key factor in this decision is that the implementation of interdisciplinary curriculum requires the implementation of teaming. Both models require teachers to move through some developmental continua and require significant changes in the system and the people. Without highly functioning interdisciplinary teams, truly integrated instruction cannot occur. It does appear; however, that the implementation of interdisciplinary teaming is occurring faster than that of interdisciplinary curriculum (Erb, 1997).

Over time, teaming has been suggested as a strategy to help cure many ills at the elementary, secondary, and college/university levels of education. From improving cost-effectiveness to rejuvenating staff, the model is ever-popular in educational reform trends. The problem; however, is that the flexibility of the model has lead some to consider it a "fad" that will come and go rather than an organizational structure that can help solve some important educational problems (Wraga, 1997).

### *Health and Physical Education Programs*

The developmental characteristics of the middle school child require schools to place an emphasis on the well-being of their students. Physical and mental health issues must be appropriately addressed through the school program (George & Alexander, 2003). Additionally, NMSA (2003) states: “Developmentally responsive middle schools promote abundant opportunities for students to develop and maintain healthy minds and bodies and to understand their personal growth” (p. 31).

Middle schools should provide comprehensive support services that not only focus on the health issues mentioned above, but also help educate students on the issues of safety, character education, tobacco, alcohol, drugs, diets, early and unprotected sexual activity, poor nutrition, aggressive or reckless behavior, and insufficient exercise (Carnegie Council on Adolescent Development, 1989; Jackson & Davis, 2000).

The health curriculum should stand on its own, although it may be supported through other courses such as physical education and homemaking. The program should be taught by a certified instructor who is an expert in the

field and adequate materials should be provided for teacher and student use (George & Alexander, 2003).

The health curriculum should provide students with the information they needed to make informed decisions about risky behaviors. The instruction should equip them with the skills needed to resist peer pressure and provide opportunities for role play and the development of the communications skills needed to survive in an adolescent world (Jackson & Davis, 2000).

To produce an environment that meets the health needs of adolescents requires an emphasis on proactive relations with persons from other cultures, peer mediation and conflict resolution training, access to appropriate health services on the school site, and instruction in health issues and physical education. The health education component should deal with all areas from hygiene to nutrition to human reproduction (George & Alexander, 2003).

The school should also provide ample opportunities for physical activity to provide relief from the stressful academic environment (Eichhorn, 1966/1987). Physical education is a key component of a healthy adolescent. Their developmental issues require daily opportunities for rigorous physical activity. Such activity is critical to solving the issues around the increasing levels of obesity and Type II Diabetes in the youth of today (George & Alexander, 2003).



The physical education program of the developmentally appropriate middle school should stress lifelong physical activities such as dance, aerobics, and leisure sports (NMSA, 2003). Each of these activities should provide the students with opportunities to improve cardiovascular fitness, strength, and agility. The physical education program should focus on life-long activity, intramural sports, and perhaps competitive athletics (George & Alexander, 2003).

#### *Guidance and Counseling Programs*

At the core of the reconceived middle school is the guidance program; however, the role of the counselor in the middle grades school appears to be little different than the role of the counselor in the “old” junior high school (Eichhorn, 1966/1987). These persons find themselves inundated with quasi-administrative duties that range from lunch duty to covering classes when no substitutes are available to doing the paperwork needed to develop student schedules. On top of these duties, the counselor is also expected to function effectively in crisis counseling situations, coordinate the advisor-advisee program, and provide guidance to new students (George & Alexander, 2003).

The guidance counselor is usually responsible for the coordination of the local and state testing programs and is responsible for distributing and interpreting the test results when they are returned to school. In many cases the counselor administers, collects the paperwork, and interprets the results of the career and technology testing designed to determine student interests, aptitudes, and abilities and assists with the development of graduation plans for those bound for high school (Clark & Clark, 1994).

When possible, the middle school guidance program should serve to enhance the educational experience base of the students by providing opportunities for student-planned and student-conducted events. Such events might include socials, interest-based activity programs, organizations and clubs, and student government. Through the inclusion of these activities, schools provide opportunities for a greater majority of the students to find a niche in which to excel and grow (Eichhorn, 1966/1987).

Finally, the middle school counselor facilitates programs such as peer mediation, peer tutoring, designs and implements programs designed to promote positive interethnic and interracial relations, and conducts conflict resolution sessions. He/she facilitates the relationships with and makes referrals to outside service providers to insure that students and parents have access to

the services required to make the middle school years as successful as possible (Jackson & Davis, 2000; NMSA, 2003).

### *Advisory Programs*

A key component of a developmentally appropriate middle school is the advisor–advisee program. With the great needs of adolescents for social and academic support, the guidance program should involve the counseling staff and the teachers. This model allows teachers to work through the day–to–day issues with students and afford the counselors increased time to spend with the most needy students (Eichhorn, 1966/1987).

The underlying premise of the advisory program is that every student should be known well by at least one adult in the school. When this relationship is established, the adult advisor can provide direction and support for the student advisee in times of personal or academic difficulty (Carnegie Council on Adolescent Development, 1989; Clark & Clark, 1994).

As critical as the advisor–advisee program is to the notion of the developmentally appropriate middle school, time has shown that the concept is by far the most difficult to implement of all of the *Turning Points 2000* (Jackson & Davis, 2000) design elements. The difficulty in implementation occurs for two

central reasons. First, teachers and other staff members feel ill-prepared to carry out this guidance and counseling function and are concerned about potential liability issues associated with the role. This appears to be especially true in schools with large numbers of secondary teachers that have no background or training in working with the affective needs of students (Anfara & Brown, 2000). Second, many parents and community members are uncomfortable with what they perceive are unwanted and inappropriate intrusions into the lives of young people (Jackson & Davis, 2000).

There is more need for the advisor-advisee program today than ever before. As larger middle schools serve as a melting pot for students exiting smaller elementary schools, the chances of student anonymity increase dramatically. When properly implemented by highly-trained staff members, the advisory program serves as a major force in the personalization of the larger school.

The advisory program is not designed to replace the school's counseling program, but to supplement it. Given the wide array of job responsibilities of the modern school guidance counselor, the adult advisor has a much better chance of getting to know the student and to have a direct positive impact on the education received while in middle school (George & Alexander, 2003).

**TABLE 3. Percent of Middle Schools Reporting the Use of Advisory Periods: 1988, 1993, and 2001.**

	School Year		
	1988	1993	2001
Percent of Schools Using Advisory Periods	39	47	48

Data Source: America's Middle Schools in the New Century: Status and Progress (2003)

The data in Table 3 indicate an increase in the percentage of schools utilizing an advisory period of nine percent over the thirteen-year period. They also indicate that the majority of middle schools do not implement this concept on their campuses (McEwin, et al. 2003).

### *Exploratory Subjects*

Another of the defining characteristics of the developmentally appropriate middle school is that of exploratory subjects. Yet across the country, teachers of exploratory or elective courses find themselves relegated to a position of being on the outside looking in at most middle school reforms (Doda & George, 1999).

John Lounsbury (1991) posits that: "If the intermediate school in America's educational system were not labeled middle school it could well be called the exploratory school. The concept of exploration is that central to and universal in the mission of the middle level school" (p. 61). In fact, the concept of

the middle school goes back to the design features of the original junior high school. Unfortunately, the exploratory program is often times relegated to second-class status as the core subjects remain in the spotlight in America's educational system.

The exploratory program is of critical importance to young adolescents as it may well be their last chance to examine a variety of topics and interests prior to entering the high school where their interests and abilities will cause the great majority of students to define and focus on a particular pathway (George & Alexander, 2003). In many cases, the exploratory program in the middle school places students in a rotation of mini-courses that requires students to sample several subject areas such as music, art, drama, home economics and careers. The rotation is usually followed by semester and then year-long elective courses that permit students to become more proficient in an area of choice (Lounsbury, 1991).

The second-class status of these subjects, and subsequently their teachers, is reinforced through the organizational structure of the middle school. This is especially true in the case of teaming. Elective and exploratory classes facilitate teacher planning times for the core subject teachers. In order to schedule all of the teachers on a team to be off at the same time, students must go to non-core

classes. This arrangement prevents exploratory and elective teachers from being members of the interdisciplinary teams (Doda & George, 1999).

Waks (2002) proposes that for the exploratory curriculum to have a major effect on students in the 21<sup>st</sup> century middle school, it must carve a “*specific curriculum niche*” (p. 37) [emphasis in original] in the middle school program and should be as identifiable as industrial arts or home economics. Rotations and short courses should be eliminated from the curriculum. Additionally, exploratory courses should have standard well-defined content organized around problems to be solved in the particular course. Information about exemplary exploratory programs should be widely disseminated as they are discovered and these courses should complement the instruction occurring in the traditional subjects (Waks, 2002).

Finally, Lounsbury (1991) and Waks (2002) express a belief that the notion of exploratory should be expanded beyond the actual course offerings into the instructional program of all courses in the school. By cultivating an exploratory culture in the core subjects, students are given permission to follow areas of interest in each academic area thus increasing the relevance of the subject matter and increasing the depth of understanding.

*Co-Curricular and Extra-Curricular Activities*

Closely coupled to the exploratory program is that of co-curricular and extra-curricular activities. In many cases these programs feature a wide range of student-centered activities that may occur during and/or outside of the school day such as student clubs and organizations, drama productions, and competitive athletics (George & Alexander, 2003). Middle schools should carefully monitor these programs, as it does all of the others, and ensure that programs are provided that will allow all students choosing to participate to attain some level of success. Schools should also make every effort to insure that the effects of participation on students are not in contradiction with the constructs of developmental appropriateness (Eichhorn, 1966/1987).

One program that receives attention in the literature is the practice of providing competitive athletics programs for middle grades student. This is an area of great concern for many advocates of middle school education.

These advocates argue that competitive athletics programs are in contradiction with the notion of developmental appropriateness as the physical and psychological stress levels placed on those choosing to participate evaporate in a win-at-all costs environment (Swaim & McEwin, 1997). Additionally, many



feel that the middle school struggles with the need to have its own program that is separate from the elementary school and the high school (George & Alexander, 2003). On the other hand, proponents of competitive athletic programs cite enhanced fitness levels, increased self-esteem, an increased sense of belonging and social development, and community identity as potential benefits of participation (Seefeldt, Ewing, & Walk, 1993). Striking a healthy balance in this area would seem to be in order for the school striving to be developmentally appropriate.

### **Criterion Three: Social Equity**

The first of the design elements of the *Turning Points 2000* model speaks to the issue of equity and its “twin,” excellence, when it states that middle schools must “*teach a curriculum grounded in rigorous public standards for what students should know and be able to do, relevant to the concerns of adolescents and based on how students learn best*” (Jackson & Davis, 2000, p. 23) [emphasis in original]. In this context, equity refers to making sure that every student has the support and the time necessary to meet the high expectations set forth in the content standards. Also in this context, excellence includes developing the critical thinking and problem-solving skills along with the necessary habits of mind

needed to meet the high expectations expressed in the educational standards set forth for middle grades students (Jackson & Davis, 2000).

In their efforts to achieve equity, schools cannot be afraid to risk failure. To allow the status quo to remain does nothing for those students in need of assistance and support. Achieving equity will take time; quick fixes will not suffice.

The achievement of the goals of excellence and equity in middle schools is further complicated as it requires the commitment of teachers. This commitment is necessary as the teachers are the persons that build relationships, implement programs, and determine the social structure of the classroom and, therefore, have a direct impact on the mastery of the knowledge and skills required in the standards (McDaniel, Necochea, Rios, Stowell, & Kritzer, 2001).

#### *Meeting the Needs of Diverse Learners*

The demographic make-up of America's classrooms is rapidly changing yet the great majority of teachers are European-American. In addition to an expanding population of children from different ethnic and racial backgrounds, the numbers of economically disadvantaged youth are also increasing (Brown, 2002).

The patterns of school failure of poor and non-white youth are well documented. The educational system as a whole tends to view these students as unprepared or lacking in ability to successful in schools (McDaniel, et al., 2001).

If the system is to be changed to provide excellent and equitable schools for all students, teachers must learn, understand, and deliver learning strategies designed to meet the needs of these students. Jackson & Davis (2000) speak to this need when they state: "Teachers must use equitable and excellent instructional methods that meet students where they are and get the students where the standards say they should go, preparing them to succeed on assessments that reveal the students' knowledge and skills" (p. 65).

Teachers serving diverse populations must learn the tenets of culturally responsive teaching that build upon the cultural and linguistic strengths of their students. They must also develop cultural competency that allows them to understand and appreciate the uniqueness and the needs of their students (Brown, 2002).

Schools serving large numbers of educationally disadvantaged youth must make the commitment to change school structures to insure they are developmentally appropriate for their particular population—not the population of the school next door. They must also be willing to commit the

time, energy, and resources necessary to insure that every student has access to an equitable and excellent education (Brown, 2002; Jackson & Davis, 2000; McDaniel, et al., 2001).

### *Democracy in the School*

Providing students with the opportunity for direct, regular input into the programs and practices in place in their schools has the potential to affect great change (Jackson & Davis, 2000). Middle schools would be wise to accept the concept of democratic schools as such schools are about excellence and equity. Movement in this direction would separate them from the institution they were designed to replace (Beane, 1999b). In fact, democratic schools provide for the most humane form of education. Students working in such an environment are more likely to build a positive base of experiences than are those attending more autocratic institutions (Dewey (1938/1997).

The argument can be made that democratic schools are truly middle schools in policy and practice as students have the opportunity to negotiate, at least in part, the constructs of their schooling (Powell, 2001). The most effective schools are those in which the control of students is guided by the level of relevancy (Dewey, 1938/1997). There is a definite correlation between student

attitudes about school and their level of success. Students report a lessening of interactions between themselves and their teachers as they move through the grades. This feeling of isolation from their teachers causes deterioration in attitudes and a decline in performance (Lounsbury, 1991).

A democratic environment can be further enhanced by providing opportunities for student input and through the inclusion of some degree of accountability for the results of that input (Dewey, 1938/1997). Rather than fearing the impact of student voices in the decision-making process, schools should view change as an opportunity to study cause and effect relationships in real time (Eichhorn, 1966/1987).

Perhaps the most logical place to begin accepting student input is in the design of interdisciplinary instruction as the planning process provides an opportunity to give students a voice in their learning experience (Dickinson, 1994). Providing voice helps students use their knowledge and skills to determine the focus of their learning. From a constructivist view, such opportunities allow students to follow their own in-depth path to knowledge (Beane, 1991).

The bottom line is that democratic schools, those that give students an opportunity for input into their education, both at the classroom and building

level, are about relationships. If schools are to insure equity and excellence, students must have a voice in the process. Unfortunately, the ideal of democratic learning environments, places where students truly have a voice in their education, remains a dream (Powell & Van Zandt–Allen, 2001).

#### **Criterion Four: Organizational Structures and Processes**

The organizational structures for the middle grades school are clearly defined by the voluminous literature base that has been developed during the past four decades. The specifics of implementation on a particular campus rests with the leadership of that campus. However, the organizational “frame” exists and has been tested over time. The framework awaits adornment by the school community charged with serving a set of young adolescents (Jackson & Davis, 2000).

This is not to say that middle level leaders do not have to make a myriad of decisions. In fact, their charge is extremely complex as the structures defined in the literature will have to be meshed with the politics and expectations of the local school community. Middle level leaders must have a vision of what each of the programs and practices implemented on the campus will look like and must

be prepared to lead the process required to reach the desired end (George & Alexander, 2003).

### *The Role of the Principal*

The principal, as the chief educational officer of the middle grades school, will be held accountable for ensuring the success of every student that attends the school. In most cases, the principal will be forced to reinvent an existing school to meet their conception of the organization (Gerrick, 1999). In fact, the principal will be the most significant influence in any reform or restructuring effort that occurs on the campus (Valentine, Trimble, & Whitaker, 1997).

Gerrick (1999) posits that middle school principals might best function as transformational leaders as proposed by James McGregor Burns in 1978. This theory of leadership helps those in the organization focus on the greater good of the organization rather than the individual needs of the adults working in that enterprise.

A follower of Burns, Bernard Bass, did extensive work in the area of transformational leadership. Through large numbers of empirical studies, Bass (2000) verified that there are four components of transformational leadership that will have bearing on the structure of an organization. These characteristics

are idealized influence, inspiration, intellectual stimulation, and individualized consideration. Idealized influence and inspiration emphasize visioning, standard setting, and tenacity. Intellectual stimulation focuses on creativity and innovation. Individualized consideration centers on coaching and supporting the growth of followers.

Additionally, the theory of transformational leadership was found to be supportive of the concepts of interdependent systems and learning organizations as set forth by Peter Senge (Bass, 2000; Bass & Avolio, 1993). Through his work, Senge (1990) postulates the need for organizations to be about continual learning. He also proposes that the contemporary organization must focus on continuous improvement with the improvement being enhanced by the use of models of interdependence. According to Senge (1996), increased efficiency and effectiveness requires that interdependence must permeate all aspects of the culture of the organization from operations to leadership. When interdependence is achieved, decisions made in isolation will be detrimental to the overall success of the organization.

Earlier in this document discussions regarding the need for the view of the middle school concept as an interdependent system and that the organizational structure of the middle school was made up of smaller learning



communities are found. It is for these reasons that these educational theories are suggested as important for the middle level principal to know and understand.

The middle school principal's job is extremely complex. In addition to being the keeper of the vision and working with teachers and staff members in continuous improvement efforts, they must also serve as the instructional leader, a teacher evaluator, a budget manager, facilities manager, and most of all, a cheerleader and chief advocate for the children on the campus that insures that the campus is meeting the needs of every student (Gerrick, 1999; Lounsbury, 1983; Valentine, et al., 1997).

### *Scheduling*

Earlier in this review, considerable space was dedicated to the topic of flexibility. While a portion of that space was used to discuss the flexibility required of adults in dealing with adolescents, the majority was used in a discussion of time. Any discussion regarding the use of time in the middle school should lead to a dialogue on the daily or master schedule used by the school.

The building master schedule is the chief determinant of how the time allocated for the school day will be utilized for teaching and learning. As such,

middle school leaders should be judicious in the selection of the model and design of the master schedule (Adams & Salvaterra, 1998; Hackman & Valentine, 1998).

At least four master schedule types have emerged for use in the middle school and each of these models has an infinite number of variations and nuances that can be applied to customize the schedule to meet the need of the students on a particular campus. There is not sufficient space to discuss each model in detail here.

There is an abundant amount of literature available on this topic and schools desiring to make changes to their schedule would be wise to engage in careful study. Additionally, school staff are encouraged to visit schools using the schedule being considered and have an in-depth dialogue with those implementing the model prior to making the decision to do something different (Salvaterra & Adams, 1995). Administrators are advised to allow teachers to have a significant level of input into the final decision regarding the school schedule as they are the ones that will implement the schedule in the classroom with students (Hannaford, Fouraker, & Dickerson, 2000; Queen, 2000).

Hackmann and Valentine (1998) propose that the following criteria be used in the decision-making process when evaluating school schedules:

- The schedule should support interdisciplinary teaming. As teaming has been determined to be one of the building-blocks of the developmentally appropriate middle school, the choice of the school schedule must facilitate the effective implementation of the structure.
- The schedule should support an appropriate curriculum. The purpose of the master schedule is to permit teachers the time needed to insure student mastery of the required standards for instruction. Teachers need direct input into decisions regarding the allocation of time for core subjects, the time devoted to exploratory classes, and if part of the instructional process, the time needed for interdisciplinary instruction.
- The schedule should support quality instruction in the disciplines through the expanded and flexible uses of time. The most effective schedules are instructionally responsive in that time can be flexibly allocated to meet the needs of the teachers and students in the instructional process. Allowing teachers the flexibility to arrange and rearrange the allotted time for the core subjects provides opportunities for enhanced and enriched instruction.

- The schedule should promote student development and supportive relationships. The master schedule should support the concept of smaller learning communities and the personalization of instruction. As stated earlier, teaming is fundamental to the developmentally responsive middle school. Additionally, the schedule should be designed to allow each teacher to maintain as low a teacher to student ratio as possible in the given school setting. Assigning fewer students per teacher provides increased opportunities for relationship-building and increased mastery of the content.
- The schedule should promote quality teacher collaboration. Effective teaming requires the allocation of regular planning time, flexibility in the allocation and arrangement of time, and deliberate collaboration among teachers. Schedule designers will have to use a high degree of ingenuity and creativity to accomplish these aims.
- The schedule should promote teacher empowerment. Teacher control over instructional time leads to increased innovation, a variety of instructional strategies used in the classroom, and an increase in relationship-building with students (Hackmann & Valentine, 1998).

Schools contemplating a change in the school master schedule must hold as their highest priority the performance of students and the results of studies done in this area are mixed. An extensive study on scheduling in Texas high schools showed no advantage to using an alternative model (Texas Education Agency, 1999) and a recent study of Texas middle schools revealed a significant decrease in student performance in schools utilizing models other than a traditionally-structured schedule (Garza, 2001).

**TABLE 4. Percent of Scheduling Plans Utilized in Middle Schools by Schedule Type and Grade Level: 1993 and 2001.**

Scheduling Type	Grade Level by School Year							
	Fifth		Sixth		Seventh		Eighth	
	1993	2001	1993	2001	1993	2001	1993	2001
Self Contained	30	18	13	10	9	9	7	9
Uniform Periods	49	55	82	56	86	75	89	76
Flexible Block	32	17	39	21	34	23	25	23
Daily-Varying	8	17	7	11	5	11	4	11

Data Source: America's Middle Schools in the New Century: Status and Progress (2003)

The data in Table 4 indicate that the use of uniform periods, or the traditional schedule, is used the most widely in middle schools. With the exception of the fifth grade, however, the model was used less frequently in 2001 than in 1993 (McEwin, et al., 2003). This may lend more credence to Garza's

(2001) findings that alternative scheduling models tend to have lower rates of student performance on standardized tests.

### *School Governance*

*Turning Points* (1989) recommended and *Turning Points 2000* concurred that an effective middle school should be governed by a systematically inclusive process. These recommendations stated that all members of the school community: teachers, paraprofessionals, parents, students, and community members must be included either directly or through a representative process. This process, usually a school based committee, has as its primary focus the improvement of student learning (Carnegie Council on Adolescent Development, 1989; Jackson & Davis, 2000).

Leaders in contemporary schools must work to create trust and a culture based on relationships and collegiality. Individuals in these schools must function interdependently and be willing to accept increased levels of power, authority, and accountability. Additionally, traditional bureaucratic school structures are being replaced by more open and engaging environments that actively solicit and implement ideas and programs proposed from within the organization (Miller & Hoy, 2000).

A culture of trust undergirds relationships, shared decision making, and collaboration. Such a school can become one that is capable of efficiently accomplishing its goals and can adapt to meet the needs of its students and of society. It appears that a culture of trust is a positive influence in schools regardless of the socioeconomic level of the district (Lounsbury, 1983; Miller & Hoy, 2000).

The school must make efforts to inform the community with regard to the middle school concept (Jackson & Davis, 2000). Parents, community members, and business leaders should be encouraged to support the school and its efforts through any means possible (Brockett, 1998; Eichhorn, 1966/1987). A great deal of this communication can occur through the work of the building governance committee. Through the diverse membership on the committee, it is possible to keep the lines of communication open with the entire school community.

The school governance committee should hold regular meetings with published agendas. The committee must understand the vision of the principal and make efforts to implement that vision. Additionally, the committee designs and implements the campus improvement plan and the campus staff development plan and assesses the progress toward attaining these goals on a regular basis (Jackson & Davis, 2000).

The campus governance committee plays a major role in determining and maintaining the culture and climate of the campus. Over time, the committee and the campus will assume the personality and attitudes of its principal (Lounsbury, 1983). Schools desirous of a developmentally appropriate environment based on sound research and tested models will require a culture of openness and will be well-served to assist the principal in their efforts to create a school that is focused on helping students meet the needs of their future (Lounsbury, 1983).

#### **Criterion Five: Teacher Preparation and Professional Development**

The current educational environment places more pressure on today's teachers than at any time in history. The standards movement and state accountability systems now in place are causing a renewed interest in teacher training and pre-service preparation. In order to meet these expectations, teachers must engage in sustained learning experiences at substantial levels of depth (Mizell, 1999).

The call for middle schools to hire staff members that are specifically trained and prepared to work with young adolescents abounds in the literature (Carnegie Council on Adolescent Development, 1989, Clark & Clark, 1994,



George & Alexander, 2003; Jackson & Davis, 2000; Killion, 1999; McEwin, et al., 2003; Mizell, 2002; NMSA, 2003) yet literally thousands of middle school students are served by teachers who come to them unprepared for this challenge (Mizell, 1999; McEwin et al., 2003). These documents stress the need for strong pre-service preparation programs and on-going staff development programs for all professional staff members.

### *Professional Preparation*

Teachers in the middle grades must be prepared to teach the increasingly diverse population of students that are entering the middle grades. Their training must focus on diversity and equity. They must be taught how to work on a team and the basic principles of guidance. This preparation should start in undergraduate degree programs and must continue throughout the career of the educator (Carnegie Council on Adolescent Development, 1989; Jackson & Davis, 2000).

Additionally, pre-service teachers need training in techniques to involve parents in the educational process, dealing with disruptive students, liability and legal issues, the use of school forms, and administrative technology such as grade book programs (Daugherty, 2003).

A survey conducted in the year 2000 revealed some startling yet not altogether unexpected information about middle grades teachers. This study, conducted by the Southern Regional Education Board, surveyed 1,100 teachers in 28 schools in eleven states. The study results revealed that only thirty percent of the responding teachers had degrees with undergraduate content majors and that 43 percent were elementary education majors. Of those with a content-based degree, the percentage with mathematics, English, science, or social studies as their content area was even lower.

Each of the teachers responding to the survey was fully certified to teach in the middle grades in their state. However, the study also revealed that a relatively large number of these teachers had not planned to teach in the middle grades; they were in their current positions because that is where the teaching positions existed during their search for employment. Many of the teachers that participated in the survey reported that they planned to leave for a different grade assignment at the first possible opportunity. Others reported that they would leave the profession altogether based on their experiences teaching in middle school. Those planning to leave middle grades schools reported a lack of administrative support, a lack of student motivation, and/or classroom management as their reasons for leaving (Cooney, n.d.).

Table 5 reports the following data as found in *America's Middle Schools in the New Century: Status and Progress* (McEwin, et al., 2003):

**TABLE 5. Percent of Teachers with Specialized Middle Level Teacher Preparation: 1988, 1993, and 2001.**

Percent of Teachers With Specialized Preparation	Percent of Teachers With Specialized Preparation as Reported by Responding Schools		
	School Year		
	1988	1993	2001
Less than 25	58	62	45
25-50	17	18	17
51-75	12	11	15
76-100	13	9	24

Data Source: *America's Middle Schools in the New Century: Status and Progress* (2003)

Over time, these data show some progress in increasing the number of teachers with specific preparation for the middle grades. Particularly encouraging are the increasing number of schools (+15 percent) that report that 76 percent to 100 percent of their teachers have specific middle grades preparation. Of concern are the data that show that 45 percent of the schools report that less than 25 percent of their teachers are prepared and that an additional seventeen percent report that 25 percent to 50 percent of their teachers have middle level preparation. If these data from these two categories of schools are aggregated, 52 percent of the schools report that 50 percent or less of their teaching staff have specific middle level preparation (McEwin et al., 2003). The concern over teacher training grows

when increasing student achievement appears to be directly linked to teacher knowledge and skills (Cooney, n.d.).

Mertens, Flowers, & Mulhall (1998) report that teachers with elementary or middle grades licensure have higher levels of team skills and classroom practices that are known to be effective with middle school students than did teachers with other types of certifications. Middle grades certified teachers that were provided with high levels of common planning time showed the greatest number of both team and classroom practices. Teachers with secondary certification performed at the lowest levels in all criterion of the study. The authors state: "While it is not possible to directly link the effects of teacher certification to student achievement outcomes, the study provides evidence to support an indirect link through heightened levels of practice and school-level teaming implementation" (p. 120).

Table 6 reports data on the respondent's perceptions of the number of teachers desiring to leave their middle school teaching positions. When considering the data over time, it appears that an increasing number of teachers are becoming comfortable in their jobs in the middle grades schools and are choosing to stay in those teaching positions.

**TABLE 6. Percent of Teachers Wishing to Leave the Middle Level: 1993 and 2001.**

Percent Wishing to Leave Middle Level Schools	School Year	
	1993	2001
None	40	51
1-20	54	46
21-40	4	2
41-60	1	1
61-80	1	0
81-100	1	0
Total	101	100

Data Source: America's Middle Schools in the New Century: Status and Progress (2003)

There are a variety of options proposed as possible solutions for solving the middle grades teacher preparation problem. These options include, but are not limited to requirements for specific middle grades teacher licensure (Jackson & Davis, 2000), a middle grades teacher endorsement (Carnegie Council on Adolescent Development, 1989), a systems approach to teacher education (Necochea, Stowell, McDaniel, Lorimer, & Kritzer, 2001), and cohorts of teacher education students (Arhar & Crowe, 2002). Regardless of the route chosen to obtain licensure, it appears that middle schools would be wise to actively seek job candidates that have received specific middle grades training to fill staff vacancies (Jackson & Davis, 2000).

Additionally, following pre-service training, middle grades teachers should be involved in a quality induction program upon entering the teaching

profession. The induction program should closely associate the new teacher with a master teacher that, preferably, teaches the same content field. Having such a mentor allows the novice to begin to see how the lessons of the university are translated into the public school classroom. The mentor should assist the new teacher in all facets of the educational program from classroom management to curriculum, assessment and instruction (Jackson & Davis, 2000; Wong, 2002).

The program should be structured to last beyond the first year of teaching. To fully acculturate novice teachers into the profession will take two to three years of intensive support peer and administrative (Daugherty, 2003; Justice, Greiner, & Anderson, 2003; Wong, 2002). These programs should be flexibly rather than overly structured in order to allow teachers to develop their own styles and personalities (Daugherty, 2003). It is through such programs that improved teacher retention rates and eventually, increased student performance, can result (Carver, 2004; Jackson & Davis, 2000).

On a similar note, an on-line survey of 1,400 middle level principals from across the country revealed the following results in the year 2000:

- No survey respondent indicated an undergraduate major in middle level education.

- 37 percent responded that they had no undergraduate coursework that specifically addressed middle school concepts; 34 percent had taken one or two middle level specific courses; and, 20 percent reported taking three to four courses.
- Eleven percent of principals indicate that they hold an advanced degree in middle level education and four percent hold middle level licensure.

In fact, the study data reveal that the entry-level middle school principal may not have experience in the middle grades in any capacity prior to their becoming the principal of the school (Petzko, Clark, Valentine, Hackmann, Nori, & Lucas, 2002). An additional issue may also surround the fact that few, if any, preparation programs for the middle school principalship exist (Dickinson, 2001). As the literature indicates that experience in the middle grades is critical to the creation and implementation of a vision for a developmentally designed middle level school, this may help explain the lack of progress exhibited by middle school students on various achievement measures and the lack of commitment on the part of the chief instructional leader on the campus to the full implementation of the middle school concept (Dickinson, 2001; Petzko, et al., 2002).

### *Staff Development*

Staff development programs for teachers should be job-embedded, based on standards, data-driven, and focused on the improvement of student learning (Killion, 1999). The program should be seamless and on-going and should enable teachers to gain the knowledge and skills needed focus on the continuous improvement of the school (Carnegie Council on Adolescent Development, 1989; Jackson & Davis, 2000).

A comprehensive staff development program will involve educators in the content, process, and context standards of the particular area of teacher expertise (Killion, 1999). Content standards delineate what students are to know and be able to do. Process standards focus on the learning processes necessary for the mastery of the content standards and cause high level of student learning. These process standards also place an emphasis on individual and organizational change. Context standards focus on organizational structures and the development of a school culture that supports professional learning. Context standards also work toward the effective use of time, resources, and continuous improvement (Jackson & Davis, 2000; Killion, 1999; Shann, 1998).



All of this being said, a Southern Regional Education Board study found that 65 percent of the responding teachers reported that they had received no staff development designed to help them expand the level of content knowledge in their teaching fields. Eighty percent of these same teachers revealed that the staff development that had been received had little or no focus on how to improve the performance of struggling learners (Cooney, n.d.).

As the middle grades knowledge base continues to expand, the theory and practice involved in the education of young adolescents is constantly changing. For this reason alone, middle school teachers must be committed to the concept of continuous personal and professional development (George & Alexander, 2003). If middle school reform is to truly take place, teachers must engage in staff development that challenges their personal belief systems, provides coaching and support, increases their personal knowledge and skills with regard to the adolescent, and makes them a partner in the change process (Mizell, 1999). In addition, to insure effectiveness, staff development must include a provision for follow-up and reflection (Jackson & Davis, 2000).

Teachers cannot make the needed changes alone. Principals must create a campus-wide vision that includes high expectations for the performance of students and staff members on the campus (Sparks, 1999). Norton (2000) states

that when “principals improve their performance, the effects on a school’s culture, structure, and instructional programs are multiplied many times over...” (p.3). A key component of the improvement of performance is participation in staff development programs (Norton, 2000; Sparks, 1999).

Staff development programs for middle school educators must include activities that improve teacher pedagogy. These programs must utilize the current research on teaching and learning. They must include the expertise of those on the school staff combined with quality off-campus experiences that cause new information and practice to become infused with one another. To be judged effective, the staff development program must provide demonstrable improvement in student achievement on a variety of assessment measures (Killion, 1999).

On a positive note, Valentine, Clark, Hackmann, and Petzko (2002) report that more principals are participating in staff development activities than were their counterparts a decade earlier. Survey respondents reported that topics such as staff supervision/evaluation, interpersonal skills/relationships, instructional leadership, oral/written communication skills, and collaborative decision making ranked among the most practical and useful while sessions on standards-based reform, community/parent issues, school board

relations/politics, research methods, and foundations/theory were only somewhat useful in the execution of their daily responsibilities. Obviously, professional preparation programs for middle school teachers and administrators supported by a comprehensive staff development program are necessary for full and complete implementation of the middle school concept.

### **Conclusion**

Hough (2003) surveyed the vast pool of middle grades literature to identify the research studies that have been conducted on middle grades schools from 1991 to 2002. After compiling this “study of studies,” he reports that “you can count on one hand the number of research studies that identify middle level programs, policies, and practices related to student outcomes that can be generalized” (p. 11). Hough (2003) also found that while the programs and practices that are advocated for middle grades schools are rational in their conception, there is a tremendous need for the replication of existing studies and for more studies that produce results that can be generalized to validate the middle school concept as a whole. Further, utilizing a definition of research that states: “research is an original work that reports the methods, data, and findings from the systematic collection and analysis of data” (p. 14), Hough (2003)

identifies 3,717 separate studies on middle grades education that were conducted during the period from 1991 through 2002.

The NMSA Research Committee (2003) refined Hough's (2003) work and discovered that about two-thirds of the studies were qualitative in nature and that quantitative studies constituted only fifteen percent of the identified studies. Interestingly, the committee also found that over ninety percent of the 3,717 has been conducted by persons not identified as "prominent middle school advocates" (p. 3) and that virtually none of the studies were replications of prior research efforts. They also reported that the majority of the studies have found that the impact of specific middle school practices on student achievement is inconclusive as it is difficult to isolate the effect of one practice on student achievement from the cumulative effect of an instructional arrangement (Van Zandt & Totten, 1995).

The NMSA Research Committee (2003) identified four studies of the 3,717 that seem to indicate a positive correlation between the middle school concept as a whole and its effects on student achievement. Lee & Smith (1993) evaluated the impact of middle school policies and practices on achievement, equity, and student engagement. In their analysis, they report that the elements of middle school restructuring were positively associated with academic achievement of

eighth grade students. They do acknowledge, however, that they have no way to determine the level of implementation of the practices or if in fact the practices were implemented as reported by the study campuses.

Felner, et al., (1997) reported in their 1991-92 study of 31 middle schools involved in the Association of Illinois Middle Schools (AIMS) project that there appeared to be a positive relationship between the level of implementation of the *Turning Points* (Carnegie Council on Adolescent Development, 1989) recommendations and student achievement but that significant results did not begin to appear until implementation efforts were “quite mature, comprehensive, and conducted with a high degree of fidelity” (p. 67).

Mertens, et al., (1998) conducted a study of schools involved in the Michigan Middle–Start Initiative. This study focused on the relationships between student behaviors, attitudes, and achievement and teaching practices and learning environments. The 21 schools in this project showed significant improvement in student achievement over a two-year period when compared to non–project schools and appear to have developed increased capacity for continuous improvement over time.

In the final study cited by the NMSA Committee (2003), Backes, Ralston, & Ingwalson (1999) studied the six schools involved in the North Dakota project

to institute the *Turning Points* (Carnegie Council on Adolescent Development, 1989) reforms funded by the Carnegie Corporation. Known as the BRIDGES project, student achievement scores from the project campuses were compared with non-project campuses with mixed results. As part of this study the researchers admit that they have assumed that the practices associated with middle grades reform have all been implemented and offer no information as to the level of implementation of the concept as a whole.

While these studies offer hope for the advocates of middle grades reform that seek to prove that the systematic implementation of the middle school concept has a direct positive influence on student achievement, the individuals and groups reviewing the research on middle grades schools have continued to issue the call for additional research in this area (Dickinson, 2001; Hough, 2003; NMSA Research Committee, 2003; Russell, 1997; Van Zandt & Totten, 1995).

## CHAPTER III

### METHODOLOGY

#### Population and Sample

The population for this study included the 1,459 schools listed as middle schools or junior high schools in the Texas School Directory published by the Texas Education Agency (2003b). The population was reduced to 1,407 campuses to include only campuses that served students in the 2002-03 school year. The population was further reduced to a random sample of 400 schools stratified by school size and the Education Service Center (ESC) region in which the schools were located. The number of schools selected from each region was determined by using a proportional relationship between the number of schools in each ESC area and the total of schools in the state taken as a whole. Miller and Salkind (2002) support the use of stratified random samples as they ensure representation of all groups in each strata and “yield less variability than simple random or multistage random sampling.” (p. 54)

The sample size of 400 was determined appropriate to meet the requirements for the study results to be generalized as trend data for all public

middle schools and junior high schools in Texas (Krejcie & Morgan, 1970; Miller & Salkind, 2002) and also compensate for the number of variables being analyzed in the study. It must be noted that charter and private middle schools located in the state of Texas were not be considered for the purposes of this study. AEIS data from all campuses sampled for the survey were also collected from the TEA website.

It was determined that the principal of the middle level school was the most qualified to rate the level of implementation of the middle school concept on their respective campus. Therefore, the principals of the 400 schools selected for the stratified random sample were invited to participate in the research study by either regular or electronic mail.

The return rate for this study was 92 surveys or 23 percent of the original sample. While the return rate is not as high as might be desired, it is important to note that the efforts made to secure the survey responses were exhaustive. Initially, the researcher followed the protocol as established in the approved research proposal for this study of making two contacts per school in the sample. Those initial efforts resulted in the return of 67 surveys or 16.75 percent.

As described in the procedures section of this chapter, the researcher then made a third attempt to contact all of the schools without responses. This effort



yielded an additional five responses for a total of 72 or eighteen percent. A fourth effort to contact non-respondents yielded two additional surveys for a total of 74 or 18.5 percent. Near the end of the approved data collection period, the researcher made one final effort to increase the response rate by selecting two schools without responses from each ESC region and making telephone calls to the principals of those schools soliciting the completion and submittal of the survey. This final effort yielded eighteen responses for the final total of 92.

The efforts made to secure a larger sample also yielded 43 responses from the principals of schools in the random stratified sample (10.75 percent) formally declining the offer to participate in the study. If the original sample size of 400 is adjusted by removing these 43 schools the new sample size becomes 357 schools. Utilizing the adjusted sample size, the response rate improves to 92 responses out of 357 possible schools or 25.77 percent.

The sample size of 400 campuses represents 278 school districts with twenty-three campuses and seventeen school districts from Region I, fifteen campuses and eight districts from Region II, seven campuses and districts from Region III, sixty-four campuses and twenty-two districts from Region IV, eleven campuses and eight districts from Region V, seventeen campuses and eleven districts in Region VI, twenty-four campuses and twenty districts in Region VII,

nine campuses and districts in Region VII, five campuses and districts in Region IX, and fifty-one campuses and thirty-six districts in Region X. Region XI was represented by forty-five campuses and thirty-one districts, Region XII was represented by nineteen campuses and eighteen school districts. Representing Region XIII were twenty-seven campuses and nineteen districts, seven campuses and six districts represented Region XIV, six campuses and districts were from Region XV, eleven campuses and ten districts from Region XVI, twelve campuses and eleven districts from Region XVII, eight campuses and districts from Region XVIII, eleven campuses and six districts from Region XIX, and twenty-eight campuses and eighteen school districts represented Region XX. Table 7 delineates the population of middle schools in Texas by ESC, the percentage of the population of schools in the ESC, the calculated number of schools to be included in the study sample of 400 schools, the resultant percentage of schools in the sample by ESC, the number of survey responses received, and the percentage received by ESC region.

**TABLE 7. Actual number of middle schools by ESC, the percentage of the population by ESC, the number of schools calculated for inclusion in the study sample by ESC, the percentage of the schools included in the sample by ESC, the number of survey respondents by ESC, and the percentage of respondents by ESC.**

ESC	No. of Middle Schools in Region		No. of Middle Schools in Sample			Respondents	
	Actual	Pct. of Population	Calculated	Rounded	Pct. of Sample	Number	Pct.
I	81	5.76	23.04	23	5.75	2	2.17
II	52	3.70	14.76	15	3.75	2	2.17
III	26	1.85	7.36	7	1.75	1	1.09
IV	226	16.06	64.24	64	16.00	17	18.48
V	38	2.70	10.8	11	2.75	3	3.26
VI	61	4.34	17.36	17	4.25	5	5.43
VII	82	5.83	23.32	24	5.75	8	8.70
VIII	32	2.27	9.08	9	2.25	5	5.43
IX	18	1.28	5.12	5	1.25	1	1.09
X	181	12.86	51.44	51	12.75	9	9.78
XI	157	11.16	44.60	45	11.25	7	7.62
XII	67	4.76	19.04	19	4.75	5	5.43
XIII	94	6.68	26.72	27	6.75	4	4.35
XIV	25	1.78	7.12	7	1.75	2	2.17
XV	23	1.63	6.53	6	1.50	1	1.09
XVI	38	2.70	10.80	11	2.75	2	2.17
XVII	41	2.92	11.64	12	3.00	4	4.35
XVIII	29	2.06	8.24	8	2.00	3	3.26
XIX	39	2.77	11.08	11	2.75	3	3.26
XX	97	6.89	27.56	28	7.00	8	8.70
Total	1,407	100.00	399.89	400	100.00	92	100.00

### Design of the Study

This exploratory correlational study investigated the relationship between the level of implementation of the middle school concept as reported by principals and measured by campus performance data reported in the

Academic Excellence Indicator System (AEIS) in selected middle schools in the state of Texas. This study also examined the impact of school size on the implementation of the middle school concept as reported by principals and measured by campus performance data reported in the AEIS system in selected middle schools in Texas. Finally, the study endeavored to determine the degree to which selected demographic variables impacted the relationship between the middle school concept and campus performance data reported in the Academic Excellence Indicator System (AEIS) in selected middle schools in the state of Texas. Gall, et al., (2003) state that “educational research develops new knowledge about teaching, learning, and educational administration” (p. 3) and that such research allows for the description of the impact of one phenomena on another. Such was the purpose of this study.

Data concerning the level of implementation of the middle school campuses were acquired from the selected middle school campuses in Texas in the late spring and early summer of 2004 using a research instrument designed by the investigator. The study followed the eight basic steps described by Gall, et al., (2003) which require the following to occur: (1) defining the research objectives, (2) selecting a sample, (3) designing the questionnaire, (4) pilot-testing the questionnaire, (5) pre-contacting the sample, (6) writing a cover

letter, (7) following up with non-respondents, and (8) analyzing the questionnaire data.

Data on student achievement, campus enrollment, the student attendance rate, the percentage of students of each ethnicity, the percentage of economically disadvantaged students, the percent of students on the campus classified as Limited English Proficient (LEP), the years of experience in education for teachers on the campus, and the per-pupil expenditures for students on the campus were collected from the Academic Excellence Indicator System (AEIS) report as posted on the Texas Education Agency (2003a) website.

Student achievement data were examined by subject area summed across all grades served on each respective campus. The subject areas examined were reading, mathematics, writing, social studies, and all tests taken. Data on science performance were also collected but were not considered in the study as the number of campuses in the stratified random sample that serve grade five ( $n = 11$ ) was not of sufficient size to permit accurate analysis.

The study design permitted a comparison of the level of implementation of the middle school concept on student achievement, school size, and selected demographic variables. A 0.05 level of significance was selected for use in this

study. As this descriptive study is exploratory in nature, Gall, et al, (2003) support the use of this level of significance when they state:

When interpreting research results, remember that a *higher* level of significance corresponds to a *lower*  $p$  value. For example,  $p < .05$  is a lower  $p$  value than  $p < .10$ , but a difference that is significant at the  $.05$   $p$  level is a more highly significant difference than a difference that is significant at the  $.10$   $p$  level. (p. 137) [emphasis in original]

### **Instrumentation**

The development of the survey instrument began with a search for relevant literature. The Carnegie Council on Adolescent Development's *Turning Points: Preparing American Youth for the 21<sup>st</sup> Century* (Carnegie Council on Adolescent Development, 1989) and Jackson and Davis' *Turning Points 2000: Educating Adolescents in the 21<sup>st</sup> Century* (2000) served as the foundational premises for the survey. Each of the components of the middle school concept identified in these works was then specifically researched and documented in the review of the literature.

The National Forum to Accelerate Middle Grades Reform's *Schools to Watch* (2003) criteria and indicators were then used as the basic frame for the survey. As the forum's criteria did not include a section on teacher preparation and staff development, a key area of the middle school

concept in the literature, the investigator created a section of the survey in order to gather data on this area. Table 8 presents information regarding the origin of the survey items used to construct the Texas Assessment of Middle Level Schools (TAMLS).

The TAMLS is comprised of five criterion and thirty-six indicators. Each of the indicators has four choices from which the principal was to select the response that best indicated the level of implementation of that particular indicator on the participating campus. In addition, principals were asked to complete a brief demographic questionnaire that described characteristics such as age range, years of experience as an educator and a principal, and level of formal education including coursework dealing specifically with middle grades education.

**TABLE 8. Survey item origins for the Texas Assessment of Middle Level Schools (TAMLS).**

Criterion	Survey Item	Description	Origin	Based Upon
Academic Excellence	1	Alignment of curriculum instruction and assessment	National Forum (see Note 1 at bottom of table)	National Forum Item 1.2
	2	Interdisciplinary curricula	National Forum	National Forum Item 1.3
	3	Instructional engagement	National Forum	National Forum Item 1.4
	4	Variety of assessment techniques	National Forum	National Forum Item 1.5

**TABLE 8. Continued.**

Criterion	Survey Item	Description	Origin	Based Upon
Developmental Responsiveness	5	Flexible scheduling	National Forum	National Forum Item 1.6
	6	Time for teaching and learning	National Forum	National Forum Item 1.6
	7	Developmentally responsive school culture	National Forum	National Forum Item 2.1
	8	Access to support services	National Forum	National Forum Item 2.2
	9	Variety of instructional strategies	National Forum	National Forum Item 2.3
	10	Relevance of curricula	National Forum	National Forum Item 2.4
	11	Cross-curricular connections	National Forum	National Forum Item 2.5
	12	Student exploration	National Forum	National Forum Item 2.6
	13	Service learning	National Forum	National Forum Item 2.9
	14	Extracurricular/Co-curricular activities	National Forum	National Forum Item 2.10
Social Equity	15	Expectations for high-quality work	National Forum	National Forum Item 3.1
	16	Student demonstration of mastery	National Forum	National Forum Item 3.2
	17	Adaptability to student needs	National Forum	National Forum Item 3.3
	18	Access to state curriculum	National Forum	National Forum Item 3.4
	19	Appreciation of diversity/cultures	National Forum	National Forum Item 3.5
	20	Student input into decisions	National Forum	National Forum Item 2.7, 3.6
Organizational Structures and Processes	21	Faculty recruitment	National Forum	National Forum Item 3.9
	22	Consistent discipline across populations	National Forum	National Forum Item 3.10
	23	Shared vision/leadership	National Forum	National Forum Item 4.1
	24	Principal's responsibility	National Forum	National Forum Item 4.2



**TABLE 8. Continued.**

Criterion	Survey Item	Description	Origin	Based Upon
Teacher Preparation and Professional Development	25	Learning community	National Forum	National Forum Item 4.3
	26	Community partnerships	National Forum	National Forum Item 4.5
	27	Staff accountability	National Forum	National Forum Item 4.6
	28	Expectations of school staff	National Forum	National Forum Item 4.7
	29	Parent and community involvement	National Forum	National Forum Item 4.3
	30	Staff training in middle school concept	Researcher Developed	Arhar & Crowe, 2002; Carnegie, 1989; Jackson & Davis, 2000; Necochea, et al, 2001; McEwin, et al, 2003
	31	Staff involved in a continuum of learning	Researcher Developed	Carnegie, 1989; George & Alexander, 2003; Jackson & Davis, 2000
	32	Support for new teachers	Researcher Developed	Arhar & Crowe, 2002; Carnegie, 1989; Carver, 2004; Daugherty, 2003; Justice, et al., 2003; Necochea, et al, 2001; Wong, 2002
	33	Employment priorities	Researcher Developed	Carnegie, 1989; Clark & Clark, 1994; George & Alexander, 2003; Jackson & Davis, 2000; McEwin, et al, 2003; Mizell, 2002; NMSA, 2003
34	Job-embedded staff development	Researcher Developed	Carnegie, 1989; Cooney, n.d.; Jackson & Davis, 2000;	

**TABLE 8. Continued.**

Criterion	Survey Item	Description	Origin	Based Upon
	35	Focused and sustained staff development	Researcher Developed	Carnegie, 1989; Jackson & Davis, 2000; Killion, 1999; Mizell, 1999; Sparks, 1999
	36	Monitoring and follow-up of staff development	Researcher Developed	Carnegie, 1989; Jackson & Davis, 2000; Killion, 1999; Mizell, 1999; Sparks, 1999

Note 1: National Forum to Accelerate Middle Grades Reform *Schools to Watch* criteria.

### Validity of the Instrument

Content validity was established through a review of the literature regarding the middle school concept and by the use of a panel of experts. The panel of experts were five middle school principals selected from across Texas that have demonstrated excellence in middle grades education on their respective campuses through student performance results, regional, state, and national recognitions of themselves and their schools, and by their direct involvement with organizations that support middle grades schools and students. These principals were asked to evaluate the TAMLS instrument to insure that the indicators would solicit the needed information from study

participants. Adjustments were made to improve the instrument after receiving their input.

Additionally, the panel of experts was asked to assess the TAMLS instrument for clarity, readability, and ease of use as a web-based survey. All five members of the panel submitted their responses to the survey on-line and reported no issues or difficulties with the survey itself or the web-based submission process.

### **Procedures**

Due to the size of the sample and the wide range of geographic locations of the selected schools, the survey was designed, distributed, and administered via the world-wide web. For principals of the selected schools without accurate electronic mail addresses, all information was mailed via the postal service in order to insure equal access to the survey for all participants.

Gall, et al, (2003) support this type of survey as it eliminates postal costs, eases the consent process through the use of a secure web server and confidential access codes, minimizes the possibility of data transfer errors, and increases the speed of survey completion for the respondents.

While postal costs are reduced or eliminated, however, the authors are clear that unless the investigator has access to the software necessary to design and post the survey to a server with access to the Internet, and has the hardware necessary to gather and protect the survey responses and guard against multiple submissions from the same respondent, this type of survey can still be costly. Additionally, the potential respondents in this type of survey must have access to an Internet browser and have the technical facility to access the survey in order to prevent bias.

This research study was conducted in the late spring and early summer of 2004 with the researcher identifying all middle school and junior high school campuses in the state of Texas. The demographic information was gathered from the Texas School Directory as published by the Texas Education Agency (2003b). This directory includes all regions, school districts, addresses, phone numbers, grade configurations, names of administrators and their titles, and, when provided, the electronic mail addresses of the principals and superintendents within the state of Texas.

After determining the schools for the random stratified sample, the researcher then sent an electronic mail message to the principal of each campus selected for the sample explaining the study procedures and soliciting his/her

participation. In cases where the electronic mail address was not available from TEA or the district or campus web pages, a letter was sent to the respective administrator requesting their participation in the study. Approximately one week following the initial electronic mail message, a second message was sent, again via electronic mail, to the principal of each campus selected for the sample. This second message contained the hyperlink to a secure server and a confidential password that allowed the principal access to an on-line survey.

In the case of non-respondents, a third and, when needed, a fourth electronic mail message was sent to the principals requesting their participation. Principals without electronic mail addresses were sent a follow-up letter approximately one month after the first request for participation was sent. About one week prior to the end of the data collection period, the researcher selected and made telephone calls to two principals that had not responded in each of the twenty service center regions in an additional effort to increase the level of survey return. The principal's survey results were recorded directly on the server and these survey results were then imported into a statistical analysis program by the researcher.

The Academic Excellence Indicator System (AEIS) database posted on the Texas Education Agency (2003a) website was utilized for data collection

purposes. The pre-existing data was entered into a spreadsheet created by the researcher so that they could be imported into the statistical analysis program.

The data included:

1. The campus identification number.
2. The campus reading TAKS results.
3. The campus writing TAKS results.
4. The campus mathematics TAKS results.
5. When appropriate, the campus social studies TAKS results.
6. When appropriate, the campus science TAKS results.
7. The campus TAKS passing all tests results.
8. The student attendance rate.
9. The percentage of students of each ethnicity.
10. The percentage of economically disadvantaged students.
11. The campus enrollment.
12. The percent enrollment in English as a Second Language.
13. The years of experience in education for teachers on the campus.
14. The per-pupil expenditures for students on the campus.

The data collected above and the data received from the on-line survey were then analyzed using the statistical program entitled *SPSS for Windows – Version 12.0* (2004) database for statistical analysis.

### **Data Analysis**

The results of the study were reported using numerical and graphical techniques. Analysis and interpretation of the data followed the principles prescribed in Gall, et al., (2003), *Educational Research: an Introduction* (7<sup>th</sup> ed.). The data collected from the on-line survey was directly imported into a microcomputer version of the Statistical Package for the Social Sciences, Version 12.0 (2004). The data needed from Texas Education Agency databases were manually entered into a Microsoft Excel spreadsheet and also imported into SPSS (2004) for analysis.

Several statistical procedures were performed to answer the research questions to test for significant differences between the level of implementation of the middle school concept as reported by the principals through the on-line survey and the selected study variables. The researcher utilized mean scores, standard deviations, frequencies, correlations, and analysis of variance (ANOVA) as part of the descriptive and inferential statistical analysis. It was

established a priori that if the ANOVA revealed significant differences between the variables, a Tukey's HSD would be used as a post hoc test ( $p < .05$ ) to determine those differences. Data analysis has included specific statistical procedures for use in answering each research question.

#### *Research Question #1*

The question of "What is the effect of the level of implementation of the middle school concept on campus performance data as identified by principals and reported in the Academic Excellence Indicator System (AEIS) in selected middle schools in the state of Texas?" was investigated using mean scores, standard deviations, and Pearson product-moment correlations. With regard to this question the independent variable was the level of implementation of the middle school concept as determined by the TAMLS survey results. The dependent variable was the performance of the students on the campus as determined by the results of the Texas Assessment of Knowledge and Skills (TAKS). Tables were used to illustrate these analyses and relationships.



*Research Question #2*

The question "To what extent does school size impact the relationship of the level of implementation of the middle school concept as identified by principals have on campus performance data reported in the Academic Excellence Indicator System (AEIS) in selected middle schools in the state of Texas?" was investigated using mean scores, standard deviations, frequencies, and Pearson product-moment correlations of dependent variables across independent variable categories. Additionally, an analysis of variance (ANOVA) was conducted to determine if schools with different enrollment sizes within the population had an effect of the level of implementation of the middle school concept. In these analyses, the dependent variable analyzed was school size with the independent variable being the level of implementation of the middle school concept as determined by the TAMLS results. Tables and matrices were used to illustrate these relationships.

*Research Question #3*

The question "To what extent do selected demographic variables of the campus have on the level of implementation of the middle school concept as

identified by principals have on campus performance data reported in the Academic Excellence Indicator System (AEIS) in selected middle schools in the state of Texas?" was investigated using mean scores, standard deviations, frequencies and Pearson product-moment correlations across the dependent and independent variables. In these analyses, the dependent variables were student attendance, ethnicity, percentage of economically disadvantaged students, percentage of limited English proficient students, years of experience for teachers, and per-pupil expenditures on the campus. The independent variable was the level of implementation of the middle school concept as determined by the responses to the TAMLS survey. Tables and matrices were used illustrate these data. The findings yielded from these descriptive, correlational, and inferential procedures are presented and discussed in Chapter IV.

## CHAPTER IV

### PRESENTATION AND ANALYSIS OF THE DATA

This chapter presents and analyzes the data collected for this study. The first goal of this research was to determine the relationship of the level of implementation of the middle school concept to student performance and selected middle school campuses in Texas. Second, the study sought to determine the relationship between school size and the level of implementation of the middle school concept on selected middle school campuses in Texas. Finally, the study examined the relationship between the level of implementation of the middle school concept and the selected demographic variables including the campus performance data, student attendance data, the percentage of students of ethnicity, the percentage of economically disadvantaged students, the percentage of English as a Second Language students, the years of experience of the teachers on the campus, and the per-pupil expenditures on the campus.

The initial section of this chapter presents data on the reliability of the Texas Assessment of Middle Level Schools (TAMLS) instrument. The subsequent sections of the chapter presents the data that result from the pursuit

of the answers to each of the research questions that drive the study.

Throughout both sections of this chapter, any and all ancillary findings will be discussed.

### Reliability of the Instrument

As the Texas Assessment of Middle Level Schools (TAMLS) survey instrument utilized to determine the level of implementation of the middle school concept was developed by the researcher, a reliability test was utilized to insure that thirty-six items in the survey were consistently related as were the items used to construct each criterion of the survey. Table 9 presents the reliability data determined for the Texas Assessment of Middle Level Schools survey.

**TABLE 9. Reliability data as determined by Cronbach's Alpha by TAMLS section.**

Cronbachs' alpha by TAMLS section.		
TAMLS section	Number of Items in Criterion	Cronbach's Alpha
1. Academic Excellence	6	.793
2. Developmental Responsiveness	8	.806
3. Social Equity	8	.788
4. Organizational Structures and Processes	7	.809
5. Teacher Preparation and Professional Development	7	.815
Total Score	36	.950

These data show that each of the criteria of the TAMLS instrument has strong internal reliability with Criterion 5: Teacher Preparation and Professional Development showing the highest reliability coefficient at .815 and Criterion Three: Social Equity have the lowest at a level of .788. The TAMLS instrument taken as a whole has a very high reliability coefficient across all five domains with a score of .950. These data reveal an instrument that contains items that are strongly related and should, therefore, produce desired responses from the survey participants.

### **Research Question #1**

What is the effect of the level of implementation of the middle school concept on campus performance data as identified by principals and reported in the Academic Excellence Indicator System (AEIS) in selected middle schools in the state of Texas?

Data were gathered on each campus selected for the study from the AEIS report as posted to the Texas Education Agency (2003a) website. The Texas Assessment of Academic Skills (TAKS) results provided the student achievement data necessary to answer this question. These student achievement data were then matched to the Texas Assessment of Middle Levels Schools

(TAMLS) data through the use of the secure password assigned to each campus to the survey data submitted by the responding principals. Table 10 represents the mean scores of the principal's responses to the TAMLS survey by criterion and of the survey taken as a whole. In this survey, principals were presented with a four-point rubric with a response of four representing the highest level of implementation of each of the constructs in that criterion and a rating of one representing the lowest level.

**TABLE 10. Mean scores and standard deviations of the Texas Assessment of Middle Levels Schools (TAMLS) survey by section.**

Mean scores and standard deviations of survey responses of the TAMLS survey by section.			
TAMLS section	Number of Items in Criterion	Mean Score	Standard Deviation
1. Academic Excellence	6	2.9486	.58490
2. Developmental Responsiveness	8	2.9446	.50549
3. Social Equity	8	3.2616	.41878
4. Organizational Structures and Processes	7	3.3368	.42146
5. Teacher Preparation and Professional Development	7	3.1656	.55026
Total Score	36	3.1212	.45196

Based on a possible total mean score of 4.0 for each criterion and for the total instrument, these data show that on average, the principals of the responding schools rated their schools to have a range of implementation levels from a minimum of 2.9446 on a scale of one to four or 73.62 percent for Criterion

2: Developmental Responsiveness to a maximum of 3.3368 or 83.42 percent for Criterion 4: Organizational Structures and Processes. The overall TAMLS instrument showed to have a mean level of implementation of 3.1212 or 78.03 percent.

The achievement of the students on the campuses participating in this study was determined by the results of the Texas Assessment of Academic Skills (TAKS) tests administered in the spring of 2003. The TAKS measures of student performance in reading, mathematics, writing, social studies, and the percentage of students passing all tests taken are summed across grade levels are reported in this study. Table 11 represents a comparison of the mean scores and standard deviations of student performance in the responding schools, the schools in the stratified random sample, and the state average for performance in these subject areas.

**TABLE 11. Mean scores and standard deviations for student achievement (TAKS) in responding schools and the stratified random sample, as well as the state average scores for all middle schools in the state of Texas summed across grade levels.**

Mean scores and standard deviations for the TAKS tested subject areas by school group										
Group Scores	Reading		Math		Writing		Social Studies		All Tests	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Responding Schools	88.20	7.41	76.89	11.67	87.52	7.89	94.13	4.65	71.59	12.60
Sample	87.87	7.11	76.68	12.36	86.97	8.09	93.73	5.72	71.32	12.88
State Scores	85.6	--	77.8	--	86.3	--	90.1	--	67.4	--

These data reveal that the schools agreeing to participate in this study had stronger performance than the schools in the stratified random sample and the state in reading, writing, social studies and all tests taken. These same schools also had a higher level of performance in mathematics than did the schools selected for the stratified random sample.

When compared to the student performance of the schools in the stratified random sample, the participating schools had a success rate that varied from a minimum difference of +0.21 percent in mathematics to a maximum of +0.55 percent in writing. These two data sets are relatively parallel in their levels of performance with the responding schools performing at slightly higher levels in all areas measured by this study.



When compared to the student performance in the schools across the state, the participating schools had a success rate that varied from the minimum difference of -0.91 percent in mathematics to +4.19 percent in all tests taken. An examination of these data show that the participating schools had higher levels of performance than did the state in four of the five categories with the average difference in these four categories being +3.01 percent.

In order to determine if a relationship existed between the Texas Assessment of Middle Level Schools (TAMLS) and student achievement, a Pearson product-moment correlation was calculated for each criterion of the survey instrument against the Texas Assessment of Academic Skills (2003) data as presented in Table 11. Table 12 reports the results of these calculations.

**TABLE 12. Pearson product-moment correlations of the TAMLS criterion, the total score, and the TAKS results summed across grade levels and reported in the 2003 AEIS Report.**

TAMLS section	Correlation coefficient of TAKS tested subjects and the TAMLS results by section				
	Reading	Math	Writing	Social Studies	All Tests Taken
1. Academic Excellence	.127	.209	.179	.109	.187
2. Developmental Responsiveness	.101	.254*	.206	.039	.194
3. Social Equity	.057	.176	.169	.045	.133
4. Organizational Structures and Processes	.124	.158	.183	-.004	.154
5. Teacher Preparation and Professional Development	.187	.267*	.246*	.060	.255*
Total Score	.096	.217*	.184	.028	.185

\* Correlation is significant at the 0.05 level (2-tailed)

The data presented in Table 12 reveals that a correlation exists in five of the twenty-five possible relationships examined. A correlation exists between the following variables: Domain 2: Developmental Responsiveness and TAKS Mathematics performance, Domain 5: Teacher Preparation and Professional Development and TAKS Mathematics, Writing, and All Tests taken, and finally, a correlation exists between the Total Score of the Texas Assessment of Middle Level Schools and TAKS Mathematics performance. No other relationships are found to exist between the TAMLS instrument measuring the level of implementation of the middle school concept and student achievement as determined by the Texas Assessment of Knowledge and Skills (TAKS).

### **Research Question #2**

To what extent does school size impact the relationship of the level of implementation of the middle school concept as identified by principals have on campus performance data reported in the Academic Excellence Indicator System (AEIS) in selected middle schools in the state of Texas?

As with the other variables in the study, the AEIS database served as the source for the data regarding school size. Table 13 presents the data on the mean enrollment of the middle school campuses responding to the study, those in the

stratified random sample, and the middle schools in Texas. These data show that the campuses responding to the survey are somewhat larger than the schools in the sample (+56.45 students) and those in Texas (+ 45.98 students).

**TABLE 13. Mean data and standard deviations for school size in the responding schools and the stratified random sample as well as the state average data for these variables as reported in the 2003 AEIS Report.**

Mean data and standard deviations of school size by enrollment data and school group		
School Group	School Enrollment	Standard Deviation
Responding Schools	696.88	357.229
Stratified Random Sample	640.43	353.445
State Data	650.90	--

The results of the TAMLS survey served as the data source for the level of implementation of the middle school concept in the selected middle schools. The first test utilized to determine if such a relationship existed was a Pearson product-moment correlation and the results of that test are found in Table 14.

**TABLE 14. Pearson product–moment correlation of school size and the TAMLS criterion and the total score.**

TAMLS section	Correlation coefficient of school size and the TAMLS results by section of the survey.
1. Academic Excellence	.168
2. Developmental Responsiveness	.193
3. Social Equity	.207
4. Organizational Structures and Processes	.215*
5. Teacher Preparation and Professional Development	.266*
Total Score	.242*

\* Correlation is significant at the 0.05 level (2-tailed)

A relationship exists between school size and two of the five TAMLS criterion and with the total score. Specifically, a correlation exists between school size and Criterion 4: Organizational Structures and Processes and Criterion 5: Teacher Preparation and Professional Development. Additionally a correlation exists between school size and the total score on the Texas Assessment of Middle Levels Schools.

In order to further examine the relationship between school size and the level of implementation of the middle school concept, the responding schools were divided in groups by school size and an analysis of variance (ANOVA) conducted. In terms of the schools responding to the survey, the group of schools comprised of student enrollments of 400 students or less translated into twenty-three schools or twenty-five percent of the respondents. The school

group with enrollments of 401 to 800 students represented thirty-four schools or 36.96 percent of the respondents. The group with 801 or more students included thirty-five schools or 38.04 percent of the schools responding to the TAMLS survey. Table 15 presents the results of this analysis.

**TABLE 15. Analysis of variance (ANOVA) for school size and the TAMLS criterion and the total score in selected middle schools in Texas.**

	TAMLS section	Sum of Squares	df	Mean Square	F	Sig
Criterion 1	Between Groups	1.555	2	.777	2.349	.102
	Within Groups	25.814	78	.331		
	Total	27.369	80			
Criterion 2	Between Groups	1.754	2	.877	3.650	.030*
	Within Groups	19.455	81	.240		
	Total	21.209	83			
Criterion 3	Between Groups	.858	2	.429	2.536	.085
	Within Groups	13.873	82	.169		
	Total	14.731	84			
Criterion 4	Between Groups	1.072	2	.536	3.165	.047*
	Within Groups	14.559	86	.169		
	Total	15.631	88			
Criterion 5	Between Groups	1.827	2	.914	3.161	.047*
	Within Groups	25.726	89	.289		
	Total	27.553	91			
Total Score	Between Groups	1.481	2	.740	3.851	.025*
	Within Groups	17.108	89	.192		
	Total	18.588	91			

\*  $p < .05$

The analysis of variance revealed a significant difference existed between the groups in Criterion 2: Developmental Responsiveness, Criterion 4: Organizational Structures and Processes, Criterion 5: Teacher Preparation and

Professional Development, and the total score on the TAMLS instrument. In an effort to further examine the significant difference existed between the size of the schools participating in the study and the level of implementation of the middle school concept as determined by the Texas Assessment of Middle Level Schools instrument, a post hoc test was utilized as established a priori. A Tukey's HSD ( $p < .05$ ) was performed on these data to reveal the areas of significant difference. These data are illustrated in Table 16.

**TABLE 16. Tukey's HSD analysis utilizing the comparison of the TAMLS results by criterion, total score and school size data.**

Dependent Variable	Enrollment	Groups	Mean Difference	Std Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Criterion 1	400 or less	401-800	-.15625	.17614	.650	-.5571	.2646
		801 or more	-.36143	.17525	.104	-.7802	.0573
	401-800	400 or less	.15625	.17614	.650	-.2646	.5771
		801 or more	-.20518	.14273	.327	-.5462	.1358
	800 or more	400 or less	.36143	.17525	.104	-.0573	.7802
		401-800	.20518	.14273	.327	-.1358	.5462
Criterion 2	400 or less	401-800	.02161	.14194	.987	-.3173	.3605
		801 or more	-.28181	.14114	.120	-.6188	.0552
	401-800	400 or less	-.02161	.14194	.987	-.3605	.3173
		801 or more	-.30342*	.12159	.038	-.5937	-.0131
	800 or more	400 or less	.28181	.14114	.120	-.0552	.6188
		401-800	.30342*	.12159	.038	.0131	.5937
Criterion 3	400 or less	401-800	-.03853	.11845	.943	-.3123	.2442
		801 or more	-.22847	.11845	.137	-.5112	.0543
	401-800	400 or less	.03853	.11845	.943	-.2442	.3213
		801 or more	-.18994	.10126	.152	-.4316	.0518
	800 or more	400 or less	.22847	.11845	.137	-.0543	.5112
		401-800	.18994	.10126	.152	-.0518	.4316
Criterion 4	400 or less	401-800	.03543	.11595	.950	-.2411	.3120
		801 or more	-.020086	.11533	.196	-.4757	.0744
	401-800	400 or less	-.03543	.11595	.950	-.3120	.2411
		801 or more	-.23611	.09908	.050	-.4724	.0002
	800 or more	400 or less	.20068	.11533	.954	-.0744	.4757
		401-800	.23611	.09908	.226	-.0002	.4724

**TABLE 16. Continued.**

Dependent Variable	Enrollment	Groups	Mean Difference	Std Error	Sig.	95% Confidence Interval	
Criterion 5	400 or less	401-800	-.12447	.14515	.668	-.4704	.2215
		801 or more	-.34712*	.14431	.047	-.6911	-.0031
	401-800	400 or less	.12447	.14515	.668	-.2215	.4704
		801 or more	-.22265	.12946	.203	-.5312	.0859
	800 or more	400 or less	.34712*	.14431	.047	.0031	.6911
		401-800	.22265	.12946	.203	-.0859	.5312
Total Score	400 or less	401-800	-.08536	.11837	.752	-.3675	.1968
		801 or more	-.30324*	.11768	.031	-.5837	-.0227
	401-800	400 or less	.08536	.11837	.752	-.1968	.3675
		801 or more	-.21789	.10557	.103	-.4695	.0337
	800 or more	400 or less	.30324*	.11768	.031	.0227	.5837
		401-800	.21789	.10557	.103	-.0337	.4695

\* The mean difference is significant at the .05 level

This post hoc examination revealed that a significant difference between the schools with 401-800 students and 801 students or more and Criterion 2: Developmental Responsiveness, between 400 students or less and 801 students or more and Criterion 5: Teacher Preparation and Professional Development, and between 400 students or less and 801 students or more and the total score on the TAMLS instrument.

### Research Question #3

To what extent do selected demographic variables of the campus have on the level of implementation of the middle school concept as identified by principals have on campus performance data reported in the Academic

Excellence Indicator System (AEIS) in selected middle schools in the state of Texas?

Demographic information was retrieved from the Academic Excellence Indicator System (2003) report to include student attendance, the ethnic composition of the student body, the percentage of economically disadvantaged students, the percentage of Limited English Proficient (LEP) students on the campus, and the fiscal expenditures per pupil enrolled at the selected campuses. Table 17 reports the ethnic composition of the schools in the study compared to the stratified random sample and the state percentages.

**TABLE 17. Mean percentages of the student body by ethnic group for the responding schools, the stratified random sample, and the state as reported in the 2003 AEIS Report.**

School group	Percentage of school enrollment by student ethnicity by school group.			
	African-American	Hispanic	White	Other
Responding Schools	12.67	32.62	52.04	2.73
Stratified Random Sample	11.28	35.37	51.08	2.32
State Data	14.30	42.70	39.80	2.90

These data show the participating schools to have a higher population of African-American (+1.39 percent), White (+0.96 percent), and Other (+0.41 percent) students and a lower percentage (-2.75 percent) of Hispanic students



than do the schools represented in the stratified random sample. When compared to the state, the responding schools have a substantially higher population of White students (+12.24 percent) than the schools in the state while this same group of schools has a lower population of African–American students (-1.83 percent), Hispanic students (-10.08 percent), and Other students (-0.17 percent). While the set of schools responding to the survey have a population that is similar to that of the schools selected for the stratified random sample, there is great disparity in all but one of the student groups when compared to the population percentages for schools across Texas. When taken in the aggregate, the three populations with large differences vary from the state by an average of 8.05 percent.

A Pearson product–moment correlation is used in Table 18 to determine if a relationship exists between student ethnicity and the TAMLS criterion.

**TABLE 18. Pearson product–moment correlation of student ethnicity and the TAMLS criterion and the total score.**

TAMLS section	Correlation coefficients of student ethnicity and the TAMLS results by section.			
	African American	Hispanic	White	Other
1. Academic Excellence	-.024	-.038	.050	.119
2. Developmental Responsiveness	-.081	.105	-.063	.150
3. Social Equity	.025	.003	-.044	.202
4. Organizational Structures and Processes	-.122	.030	.034	.163
5. Teacher Preparation and Professional Development	-.086	-.040	.060	.266*
Total Score	-.054	.030	-.013	.190

\* Correlation is significant at the 0.05 level (2-tailed)

The Pearson product–moment correlation performed on these data delineated one possible relationship between student ethnicity and the TAMLS criterion. Specifically, a possible relationship exists between Criterion 5: Teacher Preparation and Professional Development and the Other population of students.

In order to further evaluate the relationship between student achievement and the TAMLS results, the schools were grouped to include schools that were 50% minority or less and schools that were 51% minority or more. Table 19 represents the correlational data between the TAMLS criterion and the overall instrument and student ethnicity in these specific groups.

**TABLE 19. Pearson product–moment correlation of student performance and the TAMLS criterion and the total score in responding schools with summed minority percentage of 50% or less.**

Correlation coefficients of TAKS tested subjects and the TAMLS results by section in schools responding to the survey with minority student populations of 50% or less.					
TAMLS section	Reading	Math	Writing	Social Studies	All Tests Taken
1. Academic Excellence	.306*	.196	.219	.093	.232
2. Developmental Responsiveness	.334*	.306*	.330*	.166	.331*
3. Social Equity	.310*	.347*	.360*	.259	.363*
4. Organizational Structures and Processes	.318*	.274	.310*	.123	.308*
5. Teacher Preparation and Professional Development	.279	.337*	.360*	.252	.353*
Total Score	.325	.332*	.328*	.168	.351*

\* Correlation is significant at the 0.05 level (2-tailed)

Based on these calculations, eighteen possible relationships exist between the TAMLS instrument and the responding schools with a summed minority percentage of fifty-percent or less. A relationship exists between TAKS Reading performance in schools with fifty-percent minority students or less and Domain 1: Academic Excellence. Domain 2: Developmental Responsiveness and TAKS Reading, Mathematics, Writing, and All Tests Taken also demonstrate relationships in schools with this population. The same set of relationships between academic performance and these schools exists with Domain 3: Social Equity. Additionally, Domain 4: Organizational Structures and Processes and

student achievement relate in schools with a population of fifty-percent or less in the areas of TAKS Reading, Writing, and All Tests Taken. Finally, relationships exist between student achievement in TAKS Mathematics, Writing, and All Tests Taken in schools with this population and the total TAMLS score.

Table 20 illustrates the possible relationships between schools with fifty-one percent or more minority students and the TAMLS Criterion and the Total Score.

**TABLE 20. Pearson product–moment correlation of student performance and the TAMLS criterion and the total score in responding schools with summed minority percentage of 51% or more.**

Correlation coefficients of TAKS tested subjects and the TAMLS results by section in schools responding to the survey with minority student populations of 51% or more.					
TAMLS section	Reading	Math	Writing	Social Studies	All Tests Taken
1. Academic Excellence	-.052	.172	.097	.043	.081
2. Developmental Responsiveness	.011	.309	.177	-.051	.180
3. Social Equity	-.086	.081	.063	-.153	-.020
4. Organizational Structures and Processes	-.020	.033	.080	-.167	-.003
5. Teacher Preparation and Professional Development	.115	.205	.171	-.125	.169
Total Score	-.044	.140	.086	-.112	.053

\* Correlation is significant at the 0.05 level (2-tailed)

These calculations reveal no relationships between student achievement in schools with a summed minority percentage of fifty-one percent or more and

the Texas Assessment of Middle Level Schools criterion and/or the total score on the instrument.

Table 21 delineates the student data by student attendance, the percentage of economically disadvantaged students, the percentage of Limited English Proficient (LEP) students, years of teacher experience, and the expenditures per student for the study campuses as compared to the same groups in Texas middle schools.

**TABLE 21. Mean percentages and standard deviations of student attendance, economically disadvantaged students, Limited English Proficient students for the responding schools and the stratified random sample as well as the state averages for these variables as reported in the 2003 AEIS Report.**

Mean percentages and standard deviations of student attendance, economically disadvantaged students, and limited English proficient students by school group.						
School group	Student Attendance		Economically Disadvantaged		Limited English Proficient	
	Mean	SD	Mean	SD	Mean	SD
Responding Schools	95.03	9.61	44.52	21.80	5.62	7.00
Sample	95.58	5.78	47.92	24.25	6.29	7.57
State Scores	95.60	--	51.90	--	14.90	--

The data in this table reveal that the rate of student attendance in the participating schools is lower than that of the schools in the stratified random sample and the middle schools in the state. As the student attendance rate is tied directly to the level of financial support for school districts and campuses, these

differences translate into reduced funding from the foundation school program which can adversely affect student performance. While the differences of -0.55 percent between the participants and the stratified sample and -0.57 percent between the participants and the schools across the state, such disparity in student attendance can translate into a significant reduction in funds received based on the size of the campus.

In terms of the percentage of economically disadvantaged students on the campuses responding to the survey compared to those in the sample and across the state, the participating schools have a smaller enrollment percentage than the schools in both groups. The participating schools have 3.4 percent fewer economically disadvantaged students than schools in the sample and 7.38 percent fewer than the state average in middle schools in Texas. These data are consistent with the data on student ethnicity presented in Table 17 that shows the participating schools to have fewer African-American, Hispanic, and Other students than the schools in Texas.

The population of limited English proficient (LEP) students attending schools that chose to participate in the study is smaller than both the schools in the stratified random sample and the population of middle schools in Texas. Specifically, the study campuses have an enrollment of 0.67 percent less LEP

students than the schools in the study sample. The participating schools have an enrollment of 9.62 percent less LEP students than does the state as a whole.

Again, these data are consistent with the differences in the number of Hispanics and Other students enrolled on the study campuses as compared to the middle schools in the sample and across the state of Texas (see Table 17).

Table 22 illustrates the results of a Pearson product–moment correlation calculation to determine if a relationship exists between student attendance, the percentage of economically disadvantaged students, and the percentage of the limited English proficient students on the responding campuses and the TAMLS survey results.

**TABLE 22. Pearson product–moment correlation of student attendance, the percentage of economically disadvantaged students on the campus, and the percentage of limited English proficient students on the responding campuses and the TAMLS section.**

TAMLS section	Correlation coefficients of student attendance, Economically disadvantaged students, and limited English proficient students by TAMLS section.		
	Student Attendance	Economically Disadvantaged Students	Limited English Proficient Students
1. Academic Excellence	-.136	-.052	.073
2. Developmental Responsiveness	-.070	-.026	.156
3. Social Equity	-.180	-.031	.110
4. Organizational Structures and Processes	-.189	-.037	.061
5. Teacher Preparation and Professional Development	-.174	-.139	-.018
Total Score	-.160	-.062	.086

\* Correlation is significant at the 0.05 level (2-tailed)

This set of calculations does not indicate that any relationships exist between student attendance, the percentage of economically disadvantaged students, or the percentage of limited English proficient students on the responding campuses and the results of the TAMLS survey at either the criterion or total score level.

Table 23 presents the data regarding the years of teacher experience and the per-pupil expenditures in the schools participating in the study, those in the stratified random sample, and middle schools across the state.

**TABLE 23. Mean data and standard deviations for years of teacher experience and per-pupil expenditures in the responding schools and the stratified random sample as well as the state average data for these variables as reported in the 2003 AEIS Report.**

School group	Means and standard deviations of years of teacher experience and per-pupil expenditures by school group.			
	Teacher Experience (years)		Per-Pupil Expenditures	
	Mean	SD	Mean	SD
Responding Schools	11.55	2.59	\$4,676.24	\$1,004.26
Stratified Random Sample	11.49	2.60	\$5,010.11	\$1,004.67
State Data	11.80	--	\$5,030.00	--

These data show that the schools in the stratified random sample have teachers on their campuses that have less experience on average than do the participating campuses and the middle schools in Texas. The schools in the sample have, on average, teachers with 0.06 less years of teaching experience



than those participating in the study. These same schools have 0.30 years less experience than those in the middle schools in Texas.

Per-pupil expenditures, however, are less in the campuses responding to the study than both the schools in the sample and those across Texas.

Participating schools spent an average of \$333.87 per-pupil less than the schools in the sample and \$403.76 per-pupil than middle schools in Texas. When coupled with the school size data presented in Table 13 and the student attendance data presented in Table 12 and discussed earlier, these findings are consistent.

Table 24 presents the results of the Pearson Product Moment Correlation between the years of teacher experience and the TAMLS results at the criterion and total score levels. The table also serves to delineate the Pearson Product Moment Correlation computations between the level of per-pupil expenditures and the TAMLS results.

**TABLE 24. Pearson product–moment correlation of teacher experience and the per-pupil expenditures on the responding campuses and the TAMLS criterion and/or the total score.**

TAMLS section	Correlation coefficients of teacher experience and per-pupil expenditures by TAMLS section.	
	Teacher Experience	Per-pupil expenditures
1. Academic Excellence	-.136	-.052
2. Developmental Responsiveness	-.070	-.026
3. Social Equity	-.180	-.031
4. Organizational Structures and Processes	-.189	-.037
5. Teacher Preparation and Professional Development	-.174	-.139
Total Score	-.160	-.062

\* Correlation is significant at the 0.05 level (2-tailed)

These data show no correlation between teacher experience and the TAMLS results at the criterion or total score level. The same results are found when examining the possible relationship between per-pupil expenditures and the TAMLS results at either level.

## CHAPTER V

### SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

#### Summary

The purpose of this study was to determine the effects of the level of implementation of the middle school concept, school size, and various demographic variables on campus performance data in selected middle schools in the state of Texas. This was accomplished by determining the degree of the relationship between and among the study variables. Where significant variation was noted, additional tests were conducted to assist in determining the underlying cause of that variation.

The components of the middle school concept were determined through an analysis of the literature. Initially based on the landmark document, *Turning Points: Preparing American Youth for the 21<sup>st</sup> Century* (Carnegie Council on Adolescent Development, 1989), eight components were identified: creating communities for learning, teaching a core of common knowledge, ensuring success for all students, empowering teachers and administrators, preparing teachers for the middle grades, improving academic performance through better

health and fitness, reengaging families in the education of young adolescents, and connecting schools and communities. The validity of each of these constructs was verified through other literature sources culminating with the results of a ten-year study of the implementation effects of the recommendations as published in *Turning Points 2000: Educating Adolescents in the 21<sup>st</sup> Century* (Jackson & Davis, 2000).

For the purposes of this study, the constructs were grouped under the umbrella of the four criterion utilized by the National Forum to Accelerate Middle Grades Reform *Schools to Watch* (2003) criteria. Specifically these criteria are academic excellence, developmental responsiveness, social equity, and organizational structures and processes. As these criteria did not include the areas of teacher preparation and professional development as strongly supported in the literature, a fifth criterion was created by the investigator to assess these areas. The five criteria were then used to develop a survey entitled the Texas Assessment of Middle Levels Schools (TAMLS). The TAMLS survey was administered on-line and compared to student achievement data as gathered from the Academic Excellence Indicator System (AEIS) Report (2003a) as posted on the Texas Education Agency website to see if relationships exist.

The degree of correlation between the TAMLS survey and school size was also examined as was the strength of the relationship between the middle school concept as determined by the survey results and the demographic variables of ethnic distribution, attendance rate, percentage of economically disadvantaged students, percentage of limited English proficient students, teachers by years of experience, and expenditures per pupil.

The research was conducted during the late spring and early summer of 2004. Student data from the 2002-2003 school year were used. The principals of the 400 middle schools identified in the random stratified sample were sent a cover letter explaining the nature and purpose of the survey and a copy of the TAMLS survey by electronic mail.

After the initial and follow-up correspondence, 92 principals returned the survey establishing a response rate of 23 percent. It should be noted that the data collection procedures used in this study closely followed the procedures established by Gall, et al, (2003) and the results may only be generalized to the population sampled.

Statistical analysis was applied to each of the three research questions. For the purposes of this study, mean scores, standard deviations, frequencies,

correlations, and analysis of variance (ANOVA) were used as part of the descriptive and inferential statistical analysis.

### **Conclusions**

A number of conclusions regarding the level of implementation of the middle school concept on student achievement, school size and selected demographic variables can be drawn based on the analysis of the study data as presented in Chapter IV. These conclusions are reached by studying the findings that are statistically significant. The conclusions are presented in reference to the three original research questions that guided this study.

#### *Research Question #1*

Research Question One asked, "What is the effect of the level of implementation of the middle school concept on campus performance data as identified by principals and reported in the Academic Excellence Indicator System (AEIS) in selected middle schools in the state of Texas?"

*Findings.* The analysis of the mean scores of each of the TAMLS criterion and the total score on the instrument revealed that the responding principals rated their schools as having a relatively strong level of implementation of the

middle school concept (see Table 10). The mean for the total TAMLS score was 3.1212 or 78.03 percent of the possible 4.0 mean score. Academic Excellence, the first TAMLS criterion, had a mean score of 2.9486 or a 73.72 percent level of implementation. The second TAMLS criterion, Developmental Responsiveness, had a mean score of 2.9946 or 73.62 percent while Social Equity, the third criterion, was rated at 81.54 percent with a mean score of 3.2616. The fourth TAMLS criterion, Organizational Structures and Processes showed to have the highest level of implementation with a mean score of 3.3368 or 83.42 percent while criterion five, Teacher Preparation and Staff Development had a mean score of 3.1656 or 79.14 percent.

Reflecting upon these data, it is not surprising that the schools responding to the survey report relatively high levels of implementation of the respective components of the middle school concept and the concept as a whole. In fact, one might hypothesize that the modest response rate for this study of 23 percent and an additional 43 (10.75 percent) formally declining participation, reveals a lack of implementation of the middle school concept in the majority of the middle grade schools in Texas—a trend that is unimaginable to those that advocate for the concept. Therefore, the relatively high levels of implementation revealed through these mean scores may indicate that those principals that did

respond to the survey perceive that their schools are being successful in the implementation of the middle school concept.

Also not surprising is that the criterion developed to determine the implementation levels of organizational structures and processes has the highest mean scores. The literature reviewed for this study has multiple references to the remarkable changes that have occurred in creating organizational structures that support middle school students. Implementing constructs such as new school bell schedules, grouping teacher rooms to facilitate the concept of teaming, placing teachers and students into academic team structures, etc., are among the easiest and most visible changes to be made in the school and many schools have made these changes (Beane, 1999a; Dickinson, 2001; George & Alexander, 2003; Jackson & Davis, 2000).

This examination of mean scores shows the level of implementation of the Developmental Responsiveness criterion to be rated the lowest of the five TAMLS criterion. The literature again supports this result as the creation of a school environment that meets the needs of ten to 14 year-old students is difficult to accomplish (Carnegie Council on Adolescent Development, 1989; Jackson & Davis, 2000). Developmentally responsive schools are those that meet the physical and emotional needs of their students while providing a rigorous



academic program designed to prepare them for high school and post-secondary education (Clark & Clark, 1994, Eccles & Wigfield, 1997; Johnston, 1985; Lipka, 1997).

The academic achievement levels of the responding schools was determined by campus performance data in the 2003 Academic Excellence Indicator System reports posted on the TEA website. These data show strong performance when compared to the stratified random sample and to the middle schools across Texas (see Table 11). This might cause one to believe that there is, in fact, a relationship between the level of implementation of the middle school concept and students achievement. However, Pearson product-moment calculations conducted to determine the correlations between these two data sets show this to be true between only four of the twenty-five possible relationships at the criterion level (see Table 12). These are between Developmental Responsiveness and mathematics ( $r = .254$ ), Teacher Preparation and Professional Development and mathematics ( $r = .267$ ), writing ( $r = .246$ ), and all tests taken ( $r = .255$ ). At the total score level, one relationship out of the five possible was determined with mathematics ( $r = .217$ ).

These data show that there is a weak relationship between the level of implementation and the middle school concept when taken in totality. Across all

of the thirty possible relationship points examined, only five correlations (16.67 percent) are found to exist.

*Implications for practice.* Principals seeking to reform their campuses utilizing the design elements of the middle school concept should consider focusing their efforts on the specific constructs that comprise developmental responsiveness and teacher preparation and professional development as these two criterion have the highest degree of relationship between the level of implementation of the middle school concept and student achievement.

#### *Research Question #2*

Research Question Two asked, “To what extent does school size impact the relationship of the level of implementation of the middle school concept as identified by principals have on campus performance data reported in the Academic Excellence Indicator System (AEIS) in selected middle schools in the state of Texas?”

*Findings.* In order to answer this question, a Pearson product-moment correlation was run utilizing the variables of the level of implementation of the middle school concept and school size. This calculation revealed a correlation

between two of the TAMLS criterion and school size. Another relationship was found to exist between school size and the total TAMLS score (see Table 14).

Specifically, a relationship was found to exist between Criterion Four: Organizational Structures and Processes ( $r = .215$ ) and school size and between Criterion Five: Teacher Preparation and Professional Development ( $r = .266$ ) and school size. The correlation between the total TAMLS score and school size ( $r = .242$ ).

As the sizes of the schools responding to the survey tend to be larger than both the schools in the stratified random sample and the middle schools in Texas (see Table 13), the following explanations are proposed. First, larger schools require more complex organizational structures to operate efficiently than do those schools with fewer numbers of students. Team structures such as those found in developmentally appropriate middle schools help facilitate the organizational structure of the larger schools and allow the schools to create smaller learning communities in order to help personalize the environment (Anfara & Brown, 2000; Erb, 1997; Lipsitz, et al., 1997; Rottier, 2002; Van Zandt & Totten, 1995; Vars, 1996). Conversely, larger schools also operate at some economy of scale than their smaller counterparts thus allowing the larger schools to utilize some of the flexible scheduling concepts postulated to be

effective and necessary components of high-performing middle schools (Brown, 2001; DeRouen, 1998; Eichhorn, 1966/1987; Hackman & Valentine; 1998).

The relationship between teacher preparation and professional development and school size is likely due to the ability of larger schools and school districts to have support personnel not found in the smaller districts and schools. Jackson & Davis (2000) report that their study of the ten years of implementation of the *Turning Points* (Carnegie Council on Adolescent Development, 1989) recommendations revealed that schools showing the greatest progress in reform efforts had sustained, consistent access to one or more persons whose responsibilities centered on providing professional development to teachers. Teachers having such access reported that their teaching and student achievement had both improved over time.

Schools that make the investment in a job-embedded professional development program, focused on standards, sound instructional practice, and meaningful assessment reap the rewards of increased performance of both teachers and students. These schools become collaborative problem-solving organizations with results that benefit the entire school community (Jackson & Davis, 2000; Killion, 1999).

The relationship between the total TAMLS score and school size caused the researcher to probe the cause of the variation by the use of an analysis of variance (ANOVA) calculation. To accomplish this end, the responding schools were divided into three groups based on school size. These three groups were comprised of schools with 400 students or less ( $n = 23$ ), schools with populations of 401 to 800 students ( $n = 34$ ), and schools with student populations of 801 or more ( $n = 35$ ).

The ANOVA revealed a significant relationship ( $p < .05$ ) with Criterion Two: Developmental Responsiveness, Criterion Four: Organization Structures and Processes, Criterion Five: Teacher Preparation and Professional Development and with the total score on the TAMLS survey. As established in the methodology, a post hoc test was utilized to determine the areas of significant difference (see Table 16).

The post hoc test conducted was a Tukey's HSD. At ( $p < .05$ ), significant areas of difference were found between schools with populations between 401-800 and schools serving 801 students or more in Criterion Two: Developmental Responsiveness. When examining Criterion Five: Teacher Preparation and Professional Development, the difference is found between the smallest schools ( $n \leq 400$  students) and the largest schools ( $n \geq 801$  students). A similar pattern of

difference is found when probing the total scores of the TAMLS survey. The difference exists between the smallest schools responding to the survey and the largest schools submitting their responses.

With regard to the second domain, there appears to be a need for schools of size to create a supportive culture. Larger schools have greater concerns for the safety of students and staff. They have a need to focus on trying to be small, thus the implementation of organizational structures such as houses and teams of teachers and students are implemented to allow students and staff to know one another as they might in smaller communities (Manning, 1999). With this demonstrated relationship between developmental appropriateness and school size, schools of large size ( $n \geq 801$ ) might be wise to spend more of their efforts in implementing this area of school reform.

As discussed above, teacher preparation and professional development is easier to accomplish in schools and school districts of greater size. Generally, larger districts have more monetary and human resources. This allows for many districts to have their own in-house professional development personnel as opposed to smaller districts that must either send staff to training sessions or to contract with outside personnel to provide these services.

The demonstrated difference between the small schools ( $n \leq 400$  students) and the large schools ( $n \geq 801$  students) also returns to the construct of meeting the needs of the larger school community. Larger schools often times have diverse populations that feature students from a variety of ethnic and socio-economic backgrounds (Carnegie Council on Adolescent Development, 1989). Often, such schools require different operational strategies than do their smaller, more homogeneous counterparts.

*Implications for practice.* Large schools ( $n \geq 800$  students) should make efforts to provide a developmentally appropriate environment for their students. Schools designed to meet the needs of the adolescents would be wise to provide a professional development program for faculty and administrators that is on-going and sustained over time.

### *Research Question #3*

Research Question Three asked, "To what extent do selected demographic variables of the campus have on the level of implementation of the middle school concept as identified by principals have on campus performance data reported in the Academic Excellence Indicator System (AEIS) in selected middle schools in the state of Texas?"

*Findings.* The first of the selected demographic variables examined in the study is that of student ethnicity. A Pearson product–moment correlation was calculated to determine if relationships existed between the ethnic groups of students in the responding schools and the TAMLS criterion and the total score. Out of twenty-four possible relationships explored, only one correlation was found. That correlation ( $r = .266$ ) was between the “Other” student group (Asian/Pacific Islander) and Domain Five: Teacher Preparation and Professional Development.

In order to investigate the possibility of relationships between student ethnicity and the TAMLS results, the schools were divided into two groups based on their overall minority population. For this calculation the percentage of minority students was summed on each campus. The first group examined was the group of schools ( $n = 49$ ) that had student enrollments with the percentage of minority students being at fifty percent or less. The Pearson product–moment calculation for this group of schools showed eighteen possible relationships out of the thirty relationships examined.

Criterion One: Academic Excellence had a correlation with the reading scores on these campuses. Criterion Two: Developmental Responsiveness



showed relationships between reading performance ( $r = .334$ ), mathematics performance ( $r = .306$ ), writing performance ( $r = .330$ ) and all tests taken ( $r = .232$ ). The only subject area lacking a correlation with this criterion was social studies.

The Pearson product-moment calculation for Criterion Three: Social Equity also showed relationships between reading ( $r = .310$ ), mathematics ( $r = .347$ ), writing ( $r = .360$ ), and all tests taken ( $r = .363$ ). Again, social studies was the outlier in this criterion. Criterion Four: Organizational Structures and Processes had three subject areas that showed correlations. These were reading ( $r = .318$ ), writing ( $r = .310$ ), and all tests taken ( $r = .308$ ). In this criterion, mathematics and social studies showed no correlation between the two variables.

Criterion Five: Teacher Preparation and Professional Development had three areas that correlated with student performance. These areas were mathematics ( $r = .337$ ), writing ( $r = .360$ ), and all tests taken ( $r = .353$ ). No relationships were shown to exist between this criterion and student performance in reading or social studies. Finally, the TAMLS total score had three correlations with student performance. As with the fifth criterion, these

relationships were with mathematics ( $r = .332$ ), writing ( $r = .328$ ) and with all tests taken ( $r = .351$ ). All of these relationships were significant at  $p < .05$ .

Taken as a whole, there is a relationship between the level of implementation of the middle school concept as measured by the TAMLS results and student achievement when the percentage of minority students on the campus is below fifty percent as eighteen of the thirty possible correlations (60 percent) do, in fact, demonstrate mathematical relationships. It should be noted that the student ethnicity data for the schools responding to the TAMLS survey tend to have a larger population of White students than do the schools in the stratified random sample or the state. While this population is close in size to the schools in the sample (+0.96 percent), the difference in the study schools and the schools across the state is much larger (+12.24 percent).

When the Pearson product-moment calculation is run on the data set of the responding schools that have student populations that are fifty-one percent ( $n = 43$ ) or more minority (see Table 20), no relationships are found. These data lead the researcher to conclude that, according to the results of this study, there is a relatively strong relationship between the level of implementation of the middle school concept on student achievement in Texas middle schools that

have student populations that have minority populations that are fifty percent or less.

Other demographic variables and their possible relationships with the middle school concept: student attendance, the percentage of economically disadvantaged students, and the percentage of limited English proficient students on the campuses were then examined. The data on student attendance show the schools returning the study instrument to have lower mean attendance (95.03 percent) than the schools in the stratified random sample (95.58 percent) and the middle schools in Texas (95.60 percent). When correlated with the TAMLS criterion and the total score, no relationships are noted (see Table 22). As no relationships between these variables were found to exist, no calculations to evaluate the possible impact of the student attendance rate on student achievement were conducted.

The data on economically disadvantaged students on the responding campuses also show a smaller percentage of these students enrolled (44.52 percent) than either of the two sets of comparison schools (47.92 percent and 51.90 percent, respectively). Once again, the Pearson product-moment calculation conducted to determine if a relationship existed between these variables revealed no relationship with any of the TAMLS criterion or the total

score on the instrument (see Table 22). As no relationships between the percentage of economically disadvantaged students on the campus and the TAMLS results were found to exist, no calculations to evaluate the possible impact of this variable on student achievement were conducted.

The campuses returning the survey had a lower percentage of students that were classified as Limited English Proficient (5.62 percent) than did either the schools in the stratified random sample (6.29 percent) or the middle schools in the state (14.90 percent). The correlational study that compared the TAMLS criterion and the percentage of Limited English Percentage students showed that no relationship at any level (see Table 22). As no relationships between these variables were found to exist, no calculations to evaluate the possible impact of the percentage of Limited English Proficient students on student achievement were conducted.

The final two possible relationships to be examined in this study are those of teacher experience and the per pupil expenditures on the campus. When the years of teacher experience on the responding campuses is compared to schools in the sample and across the state, the means are found to be similar. Table 23 shows that the respondents had teachers with slightly more years of experience (11.55 years) than did the schools in the stratified random sample

(11.49 years). The teachers at the responding schools, however, had slightly fewer years of experience than did those teaching in middle schools across the state (11.80 years). The correlational study conducted to determine if a relationship existed between the years of teaching experience and the level of implementation of the middle school concept as measured by the TAMLS instrument revealed no relationships at the individual criterion level or with the total TAMLS score. Since no relationships between the years of teacher experience and the TAMLS results were found to exist, no calculations to evaluate the possible impact of this variable on student achievement were conducted.

The per-pupil expenditures on the responding campuses are less than those in the sample or in the middle schools across Texas (see Table 23). The responding campuses spent a mean amount of \$4,676.24 per student on an annual basis to support the education of their students. This dollar amount is \$333.87 less than the annual per-pupil expenditures for the schools selected for the stratified random sample (\$5,010.11 per student) and \$353.76 less than the annual per-pupil expenditures on the middle schools in Texas. The Pearson product-moment correlation conducted to determine if a relationship existed between the annual per-pupil expenditures on the campuses and the level of

implementation of the middle school concept revealed no relationship between these two variables and the TAMLS results at either the criterion or the total score levels. As no relationships between these variables were found to exist, no calculations to evaluate the possible impact of the annual per-pupil expenditures by the campuses on student achievement were conducted.

*Implications for practice.* Schools with a minority population of fifty percent or less that desire to improve the performance of their students should strongly consider utilizing the middle school concept as a vehicle for reform.

### **Recommendations**

Data collection, analysis, and examination lead the researcher to a series of conclusions. The following recommendations are based on these research results and they are presented with the hope that additional data will be gathered by others to test the validity of each suggestion.

#### *Recommendations Based on the Study*

1. As the items surveyed in the Texas Assessment of Middle Level Schools Criterion Two: Developmental Responsiveness demonstrate a relationship with campus performance, administrators in middle

grades schools might be wise to make the implementation of these constructs a priority in their reform efforts.

2. As a relationship exists between the items surveyed in the TAMLS Criterion Five: Teacher Preparation and Professional Development and student achievement, school administrators might be wise to make this an additional priority in their school reform efforts.
3. The demonstrated relationship between the level of implementation of the middle school concept and school size should encourage administrators charged with leading large campuses ( $n \geq 801$  students) to consider implementing the middle school concept as a means to improve the school culture and the level of campus performance.
4. The relationship between student performance in large schools ( $n \geq 800$  students) and teacher preparation and professional development should encourage administrators in such schools to consider the inclusion of a comprehensive, on-going, job-embedded professional development program as part of the organizational structure of their schools.

5. The relationship found to exist between schools with a minority enrollment of fifty percent or less and campus performance across all of the TAMLS criterion and the total score should encourage administrators in schools with this demographic to consider the implementation of the middle school concept on their campuses as a means to improve student achievement.
6. As the TAMLS Criterion Two: Developmental Responsiveness and Criterion Five: Teacher Preparation and Professional Development demonstrate relationships with student achievement throughout the study, administrators striving to implement the middle school concept on their campuses might consider these as the possible areas of focus for their reform efforts.
7. As relationships are found to exist between the TAMLS Total Score and student achievement throughout the study, administrators might consider using the middle school concept as a vehicle for campus reform.



*Recommendations for Future Study*

1. Instead of using only a survey to investigate the impact of the level of implementation of the middle school concept on student achievement, a mixed methodology should be utilized that would include structured interviews with principals. This type of methodology would provide a different level of insight into the actual level of implementation of the middle school concept on the campus.
2. Instead of a qualitative process that included only the responses of principals with regard to the impact of the level of implementation of the middle school concept on student achievement, other stakeholders on each campus should be surveyed. These other stakeholders should include, at a minimum, teachers with experience on the campus and might include students, parents, and central office staff members. Including others in the survey would provide a different level of insight as to the actual level of implementation of the middle school concept on the selected campuses.
3. More investigation is needed to determine which of the indicators that comprise Criterion Two: Developmental Responsiveness cause this

criterion to show relationships with student achievement throughout the study. In addition to any quantitative analysis that is conducted, some level of qualitative analysis might provide greater insight into these possible causal relationships.

4. More investigation is needed to determine which of the indicators that comprise Criterion Five: Teacher Preparation and Professional Development cause this criterion to show relationships with student achievement throughout the study. In addition to any quantitative analysis that might be conducted, some level of qualitative analysis might provide greater insight into these possible causal relationships.
5. More investigation is needed to determine which of the particular indicators in each of the five criteria have an impact on student achievement in schools of varying sizes. Such an investigation might reveal the essential criteria whose level of implementation has the greatest impact on student achievement in the various sizes of schools.
6. More investigation is needed to determine the reasons for the apparent relationship between schools with a minority enrollment of

fifty percent or less and student achievement on the middle school campus.

7. The effect of campus leadership on the level of implementation of the middle school concept and that possible relationship with student achievement needs to be explored. This study could be conducted on campuses with stable leadership patterns and also on those experiencing continual leadership changes.
8. The effect of district leadership on the level of implementation of the middle school concept and that possible relationship with student achievement needs to be explored. This study could be conducted in districts with stable leadership patterns and also in those districts experiencing continual leadership changes.
9. The impact of the level of implementation of the middle school concept on student discipline could be explored to determine if the implied cultural changes that occur on a highly-functioning middle school campus have an impact on behavior of students.
10. The impact of the school facility on the implementation of the middle school concept could be explored. This study could be conducted to determine possible relationships in schools that were of significant

age, in those designed for other age groups of students and converted for use as middle schools (e.g., remodeled high schools), and schools designed to meet the design elements of the middle school concept.

Additionally, the impact of the building condition on the level of implementation and student achievement could be conducted.

11. The impact of the level of implementation of the middle school concept and the mandates of the No Child Left Behind legislation could be explored. This study could be conducted to determine possible relationships with the attainment of the federally established benchmarks such as student performance, participation in the state assessment program, and Annual Yearly Progress (AYP) that have been established for schools across the United States.

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**APPENDIX A****TEXAS ASSESSMENT OF MIDDLE LEVEL SCHOOLS**

Please enter the secure password provided in a previous email:

**DEMOGRAPHIC INFORMATION**

For each indicator below, please select the response that best describes yourself:

**General Information:****Age:**

- 30-34  
 35-39  
 40-44  
 45-49  
 50-54  
 55+

**Gender:**

- Male  
 Female



**Ethnicity:**

- African American
- Asian/Pacific Islander
- Hispanic
- White
- Other

**Academic Preparation:****Education Level (highest degree earned):**

- Bachelor's
- Master's
- Doctorate

**Number of undergraduate courses taken that contained content specific to the middle school concept or the young adolescent:**

- 0
- 1 to 2
- 3 to 5
- 6+

**Number of graduate courses taken that contained content specific to the middle school concept or the young adolescent:**

- 0 to 1
- 2 to 3
- 4 to 5
- 6+

**Do you hold a certificate, license, or endorsement in middle grades education?**

- No
- Yes

**Tenure in Education:****Total length of time in education:**

- 0-4 years
- 5-9 years
- 10-14 years
- 15-19 years
- 20-24 years
- 25-29 years
- 30-34 years
- 35+ years

**Total length of time on the present campus (in any capacity):**

- 0-4 years
- 5-9 years
- 10-14 years
- 15-19 years
- 20-24 years
- 25-29 years
- 30-34 years
- 35+ years

**Total length of time serving as a principal (at any level of school):**

- 0-4 years
- 5-9 years
- 10-14 years
- 15-19 years
- 20-24 years
- 25-29 years
- 30-34 years
- 35+ years

**Length of time serving as the principal on the present campus:**

- 0-4 years
- 5-9 years
- 10-14 years
- 15-19 years
- 20-24 years
- 25-29 years
- 30-34 years
- 35+ years

**TEXAS ASSESSMENT OF MIDDLE LEVEL SCHOOLS SURVEY**

Listed below are five criteria and thirty-six indicators designed to assess the level of implementation of the middle school concept on your campus. There are four choices delineated under each indicator. For each of the thirty-six indicators, please click the button next to the descriptor that best reflects the level of implementation of the middle school concept on your campus.

**CRITERION 1: Academic Excellence.** *High-performing Texas middle schools are academically excellent. They challenge all students to use their minds well.*

**INDICATORS:**

- 1. Curriculum, instruction, and assessment are aligned with high standards and provide a coherent vision for what students should know and be able to do. The curriculum is rigorous and vertically aligned; it moves forward sequentially as students progress the middle grades.**

Curriculum, instruction, and assessment practices for all grade levels and subjects taught are aligned with the Texas Essential Knowledge and Skills (TEKS). The curriculum is designed to eliminate repetition and instructional gaps yet it emphasizes mastery instead of the coverage of material.

Curriculum, instruction, and assessment practices for the majority of grade levels and subjects taught are aligned with the TEKS. The majority of curriculum is designed to eliminate repetition and instructional gaps. In most cases, it emphasizes mastery instead of the coverage of material.

Curriculum, instruction, and assessment practices for the core subjects are aligned with the TEKS. However, the focus tends to be on content coverage versus mastery of significant concepts.

Curriculum, instruction, and assessment are not aligned with any school, district or state content standards.

- 2. The curriculum emphasizes deep understanding of important concepts, development of essential skills, and the ability to apply what has been learned to real-world situations. The curriculum helps reinforce important concepts by making connections across the disciplines.**

Essential curriculum elements are identified and the majority of instruction is focused on the analysis, synthesis, and evaluation levels. Teachers in the core subject areas regularly plan their instruction together and reinforce essential constructs through interdisciplinary instructional practices.

Essential curriculum elements are identified and some instruction is focused on the analysis, synthesis, and evaluation levels. Teachers in the

core subject areas sometimes plan their instruction together and reinforce essential constructs through interdisciplinary instructional practices.

Essential curriculum elements are identified and instruction is occasionally focused on the analysis, synthesis, and evaluation levels. Teachers in the core subject areas rarely plan their instruction together and interdisciplinary instruction rarely occurs.

Instruction is rarely focused on the analysis, synthesis, and evaluation levels. Interdisciplinary instructional practices do not exist.

**3. Instructional strategies include a variety of challenging and engaging activities that are clearly related to the concepts and skills being taught.**

In order to increase the instructional variety for students, at least 75% of the instructional strategies employed in all subject areas require students to work in modes other than paper and pencil activities.

In order to increase the instructional variety for students, the majority of the instructional strategies employed in all subject areas require students to work in modes other than paper and pencil activities.

In order to increase the instructional variety for students, the instructional strategies employed in a few subject areas require students to work in modes other than paper and pencil activities.

The instructional strategies do not include a variety of challenging and engaging activities.

**4. Teachers use a variety of methods to assess student performance (e.g., exhibitions, projects, performance tasks) and maintain a collection of student work. Students learn how to assess work against the performance standards.**

A minimum of 60% of the assessment methods employed on the campus are performance-based.

A minimum of 40% of the assessment methods employed on the campus are performance-based.

A minimum of 20% of the assessment methods employed on the campus are performance-based.

Less than 20% of the assessment methods employed on the campus are performance-based.

**5. Flexible scheduling enables students to engage in extended projects, hands-on experiences, and inquiry-based learning.**

The school schedule is designed to allow teachers the flexibility to group and re-group students in order to meet their instructional needs.

With special administrative approval, the school schedule permits teachers the opportunity to group and re-group students in order to meet their instructional needs.

Teachers may group and re-group students within the constraints of the school schedule.

Little to no grouping and re-grouping of students occurs.

**6. Most class time is spent in learning and applying knowledge or skills rather than in classroom management and discipline.**

The school schedule is designed to allow teachers the flexibility to group and re-group students in order to meet their instructional needs. Instructional methods maximize student engagement in the learning process and minimize non-instructional classroom disruptions.

With special administrative approval, the school schedule permits teachers the opportunity to group and re-group students in order to meet their instructional needs. Instructional methods maximize student engagement in the learning process and minimize non-instructional classroom disruptions.

Instructional methods are effective at minimizing non-instructional classroom disruptions.

Instructional methods utilized in the classroom are usually effective at minimizing non-instructional classroom disruptions.

**Criterion 2: Developmental Responsiveness.** *High-performing Texas middle schools are sensitive to the unique developmental challenges of early adolescence.*

**INDICATORS:**

**7. The school creates a personalized environment that supports each student's intellectual, ethical, social, and physical development. The school groups adults and students in small learning communities characterized by stable, close, and mutually respectful relationships.**

The school is organized into academic teams and/or houses through which teachers and students are grouped together to function as communities. In this structure, the teacher teams share a common group of students for the academic core. Cross team placement of students is rare. Additionally, each student is assigned an adult mentor or advisor with whom he/she works throughout the middle grades years.

The school is organized by the use of academic teams and/or houses through which teachers and students are grouped together to function as academic communities. In this structure, the teacher teams share a relatively common group of students for the academic core. Cross team placement of students is occurs but is infrequent. Additionally, each student is assigned an adult mentor or advisor with whom he/she works for a minimum of one academic year.

The school provides limited in-house guidance and support Some students are assigned an adult mentor or advisor.

Students are randomly scheduled for academic classes. Few, if any, students are assigned an adult mentor or advisor.

**8. Every student is provided access to comprehensive services that foster healthy physical, social, emotional, and intellectual development.**

The school provides a full range of in-house guidance and support services and is part of a seamless continuum designed to meet the physical, social, emotional, and intellectual needs of the students.

The school provides some in-house guidance and support services and coordinates the referral process to insure student access to a wide

variety of services designed to meet the physical, social, emotional, and intellectual needs of the students.

The school provides limited in-house guidance and support services and refers students to outside agencies. Some students are assigned an adult mentor or advisor.

In-house guidance and support services are very limited at this school. Additionally, the school has limited knowledge of referral options for students.

**9. Teachers provide students with a wide variety of instructional strategies to foster curiosity, creativity, and the development of social skills.**

Instructional strategies such as cooperative learning and teamwork are frequently utilized in an effort to enhance the development of social skills. Frequently, assignments are designed to allow students a choice of assessment options in an effort to foster curiosity and creativity.

Instructional strategies such as cooperative learning and teamwork are occasionally utilized in an effort to enhance the development of social skills.

Assignments are sometimes designed to allow students a choice of assessment options in an effort to foster curiosity and creativity.

Instructional strategies such as cooperative learning and teamwork are rarely utilized.

Rarely, assignments are designed to allow students a choice of assessment options in an effort to foster curiosity and creativity.

Instructional strategies such as cooperative learning and teamwork are rarely if ever utilized. Assessment design is solely determined by the teacher.

**10. Students are provided with a curriculum that is relevant to the personal interests of young adolescents.**

Students are regularly provided with opportunities to have input into instructional activities in order to insure interest and relevance.

Students are occasionally provided with opportunities to have input into instructional activities in order to help insure interest and relevance.



Students are rarely provided with opportunities to have input into instructional activities.

Students have no opportunity to have input into instructional activities.

**11. Teachers and students make connections across disciplines to help reinforce important concepts and address real-world problems.**

Teachers are aware of the instructional concepts being delivered to students in the core classes and work through the academic teams to make cross-curricular connections on a daily basis. Multi-disciplinary, interdisciplinary, and/or integrated curriculum planning and the resultant instruction occurs on a regular basis.

Team teachers are aware of the instructional concepts being delivered to students in the core classes and work through the academic teams to make cross-curricular connections on a regular basis. Multi-disciplinary, interdisciplinary, and/or integrated curriculum planning and the resultant instruction occurs on an occasional basis.

Team teachers are aware of the instructional concepts being delivered to students in the core classes and work through the academic teams to make cross-curricular connections on an occasional basis. Multi-disciplinary, interdisciplinary, and/or integrated curriculum planning and the resultant instruction sometimes occurs.

Each subject is taught in isolation and teacher planning occurs individually.

**12. Students are provided significant opportunities to explore a rich variety of topics in order to develop their interests and identities, discover and demonstrate their own competence, and plan for their futures.**

Students are provided regular opportunities to participate in individual and/or small group study in areas of personal interest with a high degree of accountability for results. Regular opportunities are provided for students to learn of career interests and abilities in an effort to focus studies beyond the middle school.

Students are provided occasional opportunities to participate in individual and/or small group study in areas of personal interest with

accountability for results. Occasional opportunities are provided for students to learn of career interests and abilities in an effort to focus studies beyond the middle school.

Students are provided limited opportunities to participate in individual and/or small group study in areas of personal interest. Some opportunities are provided for students to learn of career interests and abilities in an effort to focus future studies.

Students are rarely provided with limited opportunities to participate in individual and/or small group study in areas of personal interest. Few opportunities are provided for students to learn of career interests and abilities in an effort to focus future studies.

**13. The school provides students with opportunities to develop citizenship skills, uses the community as a classroom, and secures outside resources and support.**

The majority of students participate in service learning activities in the community and the school. The school actively recruits business, community, and/or parental partners.

Many students participate in service learning activities in the community and the school. The school actively recruits business, community, and/or parental partners.

Some students participate in service learning activities in the community and the school. The school welcomes business, community, and parental partners.

Few if any, students participate in service learning activities. Service learning is not a regular part of the school curriculum. The school has few, if any, business, community, and parental partners.

**14. Students are provided with age-appropriate co-curricular and extra-curricular activities.**

The school provides a wide variety of co- and/or extra-curricular activities for students.

75% or more of the students participate in some type of school-sponsored activities outside the school day.

The school provides a variety of co- and/or extra-curricular activities for students. 50% to 74% of the students participate in some type of school-sponsored activities outside the school day.

The school provides some co- and/or extra-curricular activities for students. 25% to 49% of the students participate in some type of school-sponsored activities outside the school day.

The school provides few co- and/or extra-curricular activities for students. 24% or less of the students participate in some type of school-sponsored activities outside the school day.

**Criterion 3: Social Equity.** *High-performing Texas middle schools are socially equitable, democratic, and fair. They provide every student with high-quality teachers, resources, learning opportunities, and supports. They keep positive options open for all students.*

#### **INDICATORS:**

##### **15. Administration and faculty expect and assist in the production of high-quality student work.**

All campus administration and faculty have high expectations for students and demonstrate same by modeling expected levels of behavior and work. All teachers and administrators communicate learning standards, provide models of quality work, and allow time for practice, feedback, and revision on a regular basis during class and outside of regular classroom times.

The majority of campus administration and faculty posses high expectations for students. Learning standards are communicated, models of quality work are provided, and time for practice, feedback, and revision occur during class and outside of regular classroom times.

Some campus administration and faculty posses high expectations for students. The majority of the oppotunities for assistance occur during regularly scheduled class time.

Some campus administration and faculty possess high expectations for students. When assistance occurs it happens during regularly scheduled class time.

**16. Students use a variety of approaches to demonstrate competence and/or mastery of standards.**

Students are allowed great flexibility in the methodologies used to learn and demonstrate mastery of the required subject matter.

Students are allowed some flexibility in the methodologies used to learn and demonstrate mastery of the required subject matter.

Students are rarely allowed flexibility in the methodologies used to learn and demonstrate mastery of the required subject matter.

Teachers determine the instructional strategies and assessment methods used in the classroom.

**17. The school continually adapts curriculum, assessment, instruction, and scheduling to meet the diverse and changing needs of its students.**

Curriculum, assessment, and instructional practices occurring in all grade levels and core curriculum areas are systematically evaluated and restructured to meet student needs based on performance data. Teachers are provided with great latitude to make both formal and informal changes to student schedules in order to meet individual needs. Classroom successes are frequently shared across the school.

Curriculum, assessment, and instructional practices occurring in all grade levels and core curriculum areas are systematically evaluated and restructured to meet student needs based on performance data. Teachers are provided with some latitude to make both formal and informal changes to student schedules in order to meet individual needs. Classroom successes are regularly shared across the school.

Curriculum, assessment, and instructional practices are rarely evaluated. Teachers are allowed to recommend changes to student schedules to appropriate campus personnel.

Curriculum, assessment, and instructional practices are evaluated only as required. Teachers are allowed to recommend changes to student

schedules to appropriate campus personnel. Classroom successes are rarely shared across the school.

**18. Students have equal access to the Texas Essential Knowledge and Skills (TEKS) in school classes and classroom activities.**

- All core course content and all elective course content taught to students is linked directly to the TEKS and all classroom instruction delivered to students is TEKS-based.
- All core course content and the majority of elective course content taught to students is linked directly to the TEKS and at least 70% of all classroom instruction delivered to students is TEKS-based.
- Most core course content and some elective course content taught to students is linked to the TEKS and at least 50% of all classroom activities delivered to students are TEKS-based.
- Course content and classroom activities are loosely aligned with the TEKS.

**19. Students have opportunities to learn about and appreciate their own and others' cultures.**

- Cultural activities are a regularly incorporated into school-wide, academic team, and classroom functions. Students are challenged to seek ways in which to incorporate cultural perspectives into all projects and presentations.
- Cultural activities are sometimes incorporated into school-wide, academic team, and/or classroom functions. Students are encouraged to incorporate cultural studies into their projects and presentations.
- Cultural activities are rarely incorporated into school functions. Students are reminded to incorporate cultural perspectives into their projects and presentations.
- Cultural activities are not a part of school functions. If they desire, students incorporate cultural studies into their projects.

**20. Student input is sought, heard, acknowledged, and respected as a part of the campus decision making process.**

Student input into organizational decisions is regularly sought through various lines of communication (e.g., committee memberships, surveys). Additionally, classroom teachers regularly solicit and accept student input into classroom decisions (e.g., grading rubrics, classroom rules, contracting for grades).

Student input into organizational decisions is regularly sought through various lines of communication (e.g., committee memberships, surveys). The classroom teachers sometimes solicit and accept student input into classroom decisions (e.g., grading rubrics, classroom rules, contracting for grades).

Students have sporadic opportunities for input into organizational and classroom decisions.

Students lack a voice in organizational and classroom decisions.

**21. The school recruits a faculty that is culturally and linguistically diverse.**

The school leadership, faculty, and staff actively recruit candidates that are culturally and linguistically diverse.

The school leadership seeks job candidates that are culturally and linguistically diverse.

The school leadership hires culturally and linguistically diverse faculty and staff when available.

The school leadership hires without regard for cultural and linguistic diversity.

**22. Disciplinary actions are applied consistently across all student populations.**

School discipline policies are consistently and equitably enforced across all student populations (e.g., without regard for race, gender).

The school administration makes a strong effort to enforce discipline policies in an equitable manner (e.g., without regard for race, gender).

- The school administration attempts to enforce discipline policies in an equitable manner (e.g., without regard for race, gender).
- School discipline policies are inconsistently enforced.

**Criterion 4: Organizational Structures and Processes.** *High-performing Texas middle schools are learning organizations that establish norms, structures, and organizational arrangements to support and sustain their trajectory toward excellence.*

**INDICATORS:**

**23. A shared vision of what a high-performing school is and does drives every facet of school change. Shared and sustained leadership propels the school forward and preserves its institutional memory and purpose.**

The school vision is developed with the involvement of all stakeholders (e.g., teachers, staff, parents, students, and community members) and permeates the culture of the building. The principal is the primary instructional leader of the campus; however, leadership responsibilities are always shared with others throughout the campus (e.g., team leaders, department chairpersons, lead teachers). All major instructional and organizational decisions are made in a collaborative manner with input from as many stakeholder groups as is practical.

The school vision is developed with the involvement of stakeholders and helps shape the culture of the building. The principal is the primary instructional leader of the campus; however, leadership responsibilities are frequently shared with others throughout the campus (e.g., team leaders, department chairpersons, lead teachers). The majority of major instructional and organizational decisions are made in a collaborative manner with input from as many stakeholder groups as is practical.

The school vision is developed with the involvement of some stakeholders. The principal is the primary instructional leader of the campus; however, leadership responsibilities are sometimes shared with others throughout the campus (e.g., team leaders, department chairpersons, lead teachers). Some of the major instructional and organizational decisions are made in a collaborative manner.

The school lacks a unified vision. The principal is the instructional leader of the campus and makes most, if not all decisions with little or no input.

**24. The building principal has the responsibility and authority to hold the school-improvement enterprise together, including day-to-day know-how, coordination, strategic planning, and communication.**

The principal is responsible for the day-to-day operations of the campus. Additionally, he/she accepts personal responsibility for the performance of the students served by the school and leads the resultant school improvement efforts.

The principal is responsible for the day-to-day operations of the campus. Additionally, he/she accepts the majority of the responsibility for the performance of the students served by the school and leads the resultant school improvement efforts.

The principal is responsible for the day-to-day operations of the campus. Additionally, he/she hesitates to accept responsibility for the performance of the students served by the school.

The principal accepts little or no responsibility for the day-to-day operations of the campus. Additionally, he/she fails to accept responsibility for the performance of the students served by the school.

**25. The school is a community of practice in which learning, experimentation, and reflection are the norm. Expectations of continuous improvement permeate the school. At school everyone's job is to learn.**

Virtually all persons on the campus (e.g., faculty, staff, students, and administration) are focused on life-long learning and continuous improvement. All persons on the campus (e.g., faculty, staff, students, and administration) are encouraged to be risk-takers and reflective practitioners.

The majority of the persons on the campus (e.g., faculty, staff, students, and administration) are focused on life-long learning and continuous improvement. The majority of the persons the campus (e.g., faculty, staff, students, and administration) are encouraged to be risk-takers and reflective practitioners.



Some of the persons on the campus (e.g., faculty, staff, students, and administration) are focused on life-long learning and continuous improvement. Some of the persons the campus (e.g., faculty, staff, students, and administration) are risk-takers and reflective practitioners.

Few of the persons on the campus (e.g., faculty, staff, students, and administration) are focused on life-long learning and continuous improvement. Few, if any, of the persons the campus (e.g., faculty, staff, students, and administration) are risk-takers and reflective practitioners.

**26. The school is not an island unto itself. It draws upon others' experiences, research, and wisdom; it enters into relationships such as networks and community partnerships that benefit students' and teachers' development and learning.**

The majority of school personnel actively participate in professional networks and collaboratives designed to raise collective and individual capacity. The majority of the professional staff are involved with outside partners in an effort to increase the opportunities available for its students (e.g., community service).

Many school personnel participate in professional networks and collaboratives designed to raise collective and individual capacity. Many of the professional staff are involved with outside partners in an effort to increase the opportunities available for its students (e.g., community service).

Some school personnel participate in professional networks and collaboratives designed to raise collective and individual capacity. Professional staff are occasionally involved with outside partners.

Few if any of the school personnel participate in professional networks and collaboratives designed to raise collective and individual capacity. Professional staff are rarely involved with outside partners.

**27. School staff holds themselves accountable for student success. The school collects, analyzes, and uses data as a basis for making decisions. The school analyzes evaluation data to identify areas for more extensive and intensive improvement. The school intentionally and explicitly reconsiders its vision and practices when data call them into question.**

Virtually all faculty and administrators use quantitative data (e.g., Texas Assessment of Knowledge and Skills (TAKS), Academic Excellence Indicator System (AEIS), norm-referenced tests, benchmark assessments) and qualitative data (e.g., surveys, teacher and administrator observations of student work) to make instructional and organizational decisions on a regular and on-going basis.

Most faculty and administrators use quantitative data (e.g., TAKS, AEIS, norm-referenced tests, benchmark assessments) and qualitative data (e.g., surveys, teacher and administrator observations of student work) to make instructional and organizational decisions on a regular and on-going basis.

Some faculty and administrators use quantitative data (e.g., TAKS, AEIS, norm-referenced tests, benchmark assessments) and qualitative data (e.g., surveys, teacher and administrator observations of student work) to make instructional and organizational decisions.

Faculty and administrators occasionally use quantitative data (e.g., TAKS, AEIS, norm-referenced tests, benchmark assessments) and qualitative data (e.g., surveys, teacher and administrator observations of student work) to make instructional and organizational decisions.

**28. The staff works collectively to overcome barriers, believing it is their business to produce increased achievement and enhanced development for all students.**

All school staff believe that every student can master the TEKS and assists every student in their efforts to continually improve. Obstacles to student learning are overcome through on-going collaborative efforts at the team, department, and/or administrative levels. The entire staff works together to insure student success.

The majority of school staff believe that every student can master the TEKS and provide assistance toward that end. Obstacles to student

learning are overcome through collaborative efforts at the team, department, and/or administrative levels. Most staff work together to insure student success.

Some school staff believe that students can master the TEKS. Individual staff members attempt to overcome obstacles to student learning.

School staff are uncertain about the ability of students to master the TEKS. No consistent strategies for overcoming obstacles to student learning are in place.

**29. Families and community members are included in setting and supporting the school's path toward high performance. Stakeholders are engaged in on-going and reflective conversation, consensus building, and decision-making to promote school improvement.**

Opportunities for family and community input into instructional and organizational decisions through formal lines of communication are planned and regularly scheduled. Parents and community members are sought out for the purpose of gathering informal input.

Opportunities for family and community input into instructional and organizational decisions through formal lines of communication are occasionally scheduled. Informal interactions with parents and community are encouraged.

Opportunities for family and community input for instructional and organizational decisions through formal lines of communications are rarely scheduled. Informal interactions with parents and community are neither encouraged nor discouraged.

The school has no plan or process for soliciting and considering input from families and the community. Informal interactions are discouraged.

**Criterion 5: Teacher Preparation and Professional Development.** *High-performing Texas middle schools are staffed by teachers that are prepared to meet the needs of young adolescents through effective pre-service and inservice programs. They feature a results-oriented professional development program that is based on students' needs and rigorous standards.*

**INDICATORS:**

**30. Teachers on the campus have extensive knowledge of the tenets of middle school education provided through pre-service or inservice programs.**

90% or more of the teachers on the campus have extensive knowledge and/or training in the concepts of middle level education. Opportunities for on-going professional development designed to keep faculty abreast of the latest trends in middle level education are frequently provided. Additionally, school personnel actively support pre-service programs designed to prepare middle school teachers and administrators.

80-89% of the teachers on the campus have extensive knowledge and/or training in the concepts of middle level education. Opportunities for on-going professional development designed to keep faculty abreast of the latest trends in middle level education are regularly provided. Additionally, school personnel support pre-service programs designed to prepare middle school teachers and administrators.

50-79% of the teachers on the campus have extensive knowledge and/or training in the concepts of middle level education. Opportunities for on-going professional development designed to keep faculty abreast of the latest trends in middle level education are occasionally provided.

Less than 50% of the teachers on the campus have extensive knowledge and/or training in the concepts of middle level education. Opportunities for on-going professional development designed to keep faculty abreast of the latest trends in middle level education are seldom provided.

**31. Teachers are involved in a seamless continuum of learning that is focused on increasing student achievement. The school devotes resources to ensure that teachers have time and opportunity to reflect on their classroom practice and learn from one another.**

☐ All teachers are focused on enhancing their individual and collective knowledge and skills in an effort to improve student performance. The majority of the teachers are engaged in reflective study and feedback activities (e.g., book studies, discussion/critical friends groups, coaching sessions) on an on-going basis. The principal actively encourages faculty and staff to pursue learning opportunities.

☐ The majority of teachers are focused on enhancing their individual and collective knowledge and skills in an effort to improve student performance. Some of the teachers are engaged in reflective study and feedback activities (e.g., book studies, discussion/critical friends groups, coaching sessions). The principal encourages faculty and staff to pursue learning opportunities.

☐ Some teachers are focused on enhancing their individual and collective knowledge and skills in an effort to improve student performance. Occasionally, some of the teachers are engaged in reflective study and feedback activities (e.g., book studies, discussion/critical friends groups, coaching sessions).

☐ Few teachers are focused on raising their individual and collective knowledge and skills in an effort to improve student performance.

**32. Teachers new to the campus or the profession are provided with a mentor that will assist them with the transition into the culture of a high performing middle grades school. In addition, the mentor teacher will help familiarize the mentee with the rules, policies, procedures, norms, and expectations of the school and district.**

☐ All teachers new to the campus or the profession are connected with a trained mentor that will support their transition to the middle school campus. The mentor and the mentee meet on a weekly basis, both formally and informally, to discuss the needs of the new teacher. In addition to the formally assigned mentor, the academic team serves as an on-going resource for the new teacher. The building principal serves as

an ad hoc mentor to all new teachers by regularly meeting with them as individuals and as a group.

☐ All teachers new to the campus or the profession are connected with a trained mentor that will support their transition to the middle school campus. The mentor and the mentee meet on a regular basis, both formally and informally, to discuss the needs of the new teacher. In addition to the formally assigned mentor, the academic team serves as an on-going resource for the new teacher. The building principal serves as an ad hoc mentor to some new teachers by occasionally meeting with them as individuals and as a group.

☐ All teachers new to the campus or the profession are connected with a mentor that will support their transition to the middle school campus. The mentor and the mentee meet on an as needed basis to discuss the needs of the new teacher. The building principal serves as an ad hoc mentor to the new teachers by meeting with them as a group.

☐ Teachers new to the profession are provided with the induction services mandated by state statute.

**33. The campus seeks and gives preference to applicants that have prior training, experience, and/or certification in middle grades education.**

☐ Documented successful experience and/or training in the middle grades is a high priority in the recruiting process for all vacant teaching, support, and administrative positions on the campus.

☐ Documented successful experience and/or training in the middle grades is desirable in the recruiting process for vacant teaching, support, and administrative positions on the campus.

☐ Documented successful teaching experience is desirable in the recruiting process for vacant positions on the campus.

☐ The campus hires individuals that meet state certification requirements to fill vacant positions.

**34. Professional development is results-driven, standards-based, and embedded in the daily work of teachers. The professional development program is based on student data and is designed to assist teachers in helping students attain mastery of rigorous standards.**

The great majority of the professional development delivered to teachers is campus-based and focuses on curriculum, assessment, instruction, and is directly tied to the mastery of the TEKS. Differentiation and/or enrichment of instruction are regularly included as topics in the professional development program.

Most of the professional development delivered to teachers is campus-based and focuses on curriculum, assessment, instruction, and is directly tied to the mastery of the TEKS. Differentiation and/or enrichment of instruction are sometimes included as topics in the professional development program.

Some of the professional development delivered to teachers is campus-based and focuses on curriculum, assessment, instruction, and is directly tied to the mastery of the TEKS. Differentiation and/or enrichment of instruction are rarely included as topics in the professional development program.

Very little of the professional development delivered to teachers is campus-based.

**35. In addition to the inservice program in place at the school, teachers and administrators have opportunities to engage with high-quality professional development providers through off campus training sessions.**

All faculty and administration have the opportunity to request approval to attend off-campus inservice training sessions based on the program requested, the campus instructional goals, the perceived impact on student performance, and available funds. All those attending off-campus training are required to share the knowledge gained with others.

The majority of faculty and administration have the opportunity to request approval to attend off-campus inservice training sessions based on the program requested, the campus instructional goals, the perceived impact on student performance, and available funds. Some of those

attending off-campus training are required to share the knowledge gained with others.

Some faculty and administration have the opportunity to request approval to attend off-campus inservice training sessions based on the program requested and the available funds. Occasionally, those attending off-campus training are requested to share the knowledge gained with others.

Very few faculty and administration have the opportunity to request approval to attend off-campus inservice training sessions based on the funds available.

**36. Implementation of knowledge and skills learned through professional development is supported through monitoring and follow-up by the administration.**

Instructional programming is actively monitored by the campus administration on a daily basis by the use of various qualitative (e.g., walk-throughs, classroom observations, teacher conferences, lesson plans, departmental and team meetings) and quantitative techniques (e.g., review of state assessment data, benchmark test results, norm-referenced test results).

Instructional programming is monitored by the campus administration on a weekly basis by the use of various qualitative (e.g., walk-throughs, classroom observations, teacher conferences, lesson plans, departmental and team meetings) and quantitative techniques (e.g., review of state assessment data, benchmark test results, norm-referenced test results).

Instructional programming is monitored by the campus administration on a monthly basis by the use of various qualitative (e.g., walk-throughs, classroom observations, teacher conferences, lesson plans, departmental and team meetings) and quantitative techniques (e.g., review of state assessment data, benchmark test results, norm-referenced test results).

Instructional programming is rarely monitored by the campus administration except through reviews of appropriate assessment data.



**VITA**

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