# RESPONSE OF SELECTED MIDDLE SCHOOLS TO THE ACCOUNTABILITY DEMANDS OF NO CHILD LEFT BEHIND WITHIN MATHEMATICS CURRICULUM AND INSTRUCTION

by

**Randal Alan Lutz**

**B.S., University of Pittsburgh, 1990**

**M.S., University of Pittsburgh, 1996**

**Submitted to the Graduate Faculty of**

**the School of Education in partial fulfillment**

**of the requirements for the degree of Doctor of Education**

**University of Pittsburgh**

**2004**

UNIVERSITY OF PITTSBURGH

SCHOOL OF EDUCATION

This dissertation was presented

by

Randal Alan Lutz

It was defended on

December 10, 2004

and approved by

Dr. Martin P. Cohen, Instruction and Learning

Dr. Sue Ann Goodwin, Administrative and Policy Studies

Dr. Sean Hughes, Administrative and Policy Studies

Dr. Charles J. Gorman, Administrative and Policy Studies
Dissertation Director

**RESPONSE OF SELECTED MIDDLE SCHOOLS TO THE ACCOUNTABILITY DEMANDS OF NO CHILD LEFT BEHIND WITHIN MATHEMATICS CURRICULUM AND INSTRUCTION**

**Randal Alan Lutz, Ed.D**

**University of Pittsburgh, 2004**

Schools are struggling to meet the accountability demands for increased student achievement associated with the No Child Left Behind Act of 2001. Instructional philosophies and programs characteristics are being affected as schools are forced to view standardized testing results as a single measure of success. The findings of the study lend insight into the implementation of the No Child Left Behind Act of 2001 within the middle school setting for administrators and teachers within the middle school that are attempting to meet the Adequate Yearly Progress demands required by this legislation.

The three middle schools used in the study were recognized as exemplary for their implementation of programming consistent with the essential elements of a middle school (NMSA, 1982). It was important to determine the extent middle school philosophy had taken hold within each of the schools. Use of the essential elements provided a common reference point to for comparison purposes.

Data was collected from a variety of sources that included a review of school programs, PSSA data analysis, and interviews at each school consisting of the principal and a math teacher from each grade level (6, 7, and 8). The data was collected at each school independent of the other sites as to create authentic case study accounts of each school's degree of adaptation in

response to the accountability demands for increased student achievement associated with NCLB.

While the schools had realized past success, each school had begun to implement changes to the academic programming aimed to further increase achievement. Strategies being implemented differed slightly among schools, however, in all cases, elements of the middle school had begun to vanish. The amount of change to the programs present was related to the degree of need due to the presence of student subgroups within the school. The school review conducted as part of the Eichhorn Award nomination proved valuable as schools considered elements for change. This study of school adaptation can be utilized by middle school leaders faced with similar circumstances in which the demands of increased student achievement have forced variations from their existing middle level program.

# ACKNOWLEDGEMENTS

I would like to acknowledge the support of many family members and friends in education that provided support during this educational journey.

To my wife, Judy whose unwavering support from the very beginning was the only way this dissertation was made possible. Knowing she was there to assist me as well as take care of our daughters Carly and Jenna during the seemingly never ending evenings in my office. Yes girls, I am now Dr. Dad. I love you all.

To the committee members, Dr. Charles Gorman, research advisor, Dr. Susan Goodwin, academic advisor, Dr. Sean Hughes and Dr. Martin Cohen, for giving freely of their time and knowledge and being instrumental in getting me to the dissertation level during the years of graduate work. Their counsel, encouragement, and friendship will forever be remembered.

To my superintendent and friend, Dr. Donna K. Milanovich, for providing guidance and encouragement to begin the doctoral program.

Finally, I would like to thank the principals and teachers of the schools selected for this study. The principals were especially supportive in arranging the site visitations during an extremely busy time of the year.

TABLE OF CONTENTS

# LIST OF FIGURES

# LIST OF TABLES

**CHAPTER ONE**

**I. REVIEW OF THE LITERATURE**


**A. INTRODUCTION**

The education of adolescent children has been the subject of educational writing for well over one hundred years. Regardless of the technique or structure, educational reformers have focused on how to provide the most appropriate education consistent with the needs of society at the time. The goal of this literature review is to explore the development of the modern middle school from its foundation in junior high schools and examine the influence of the standards movement and current education legislation within the middle school. The middle school's response to the current accountability demands within public education will serve as the conceptual framework of the study. From this base, effects of accountability systems on middle school programs can be examined. Within the study of these topics it becomes apparent that a collision of philosophical foundations is destined to occur. The ability of the middle school to navigate the demands of accountability while maintaining a developmentally appropriate program warrants the need for examination.

Through research on the development of adolescent education in the United States, three distinct influences are reviewed. The first area focuses on the development of the modern middle school. By including the exploration of the history of junior high schools, some of the early characteristics of adolescent education and their influence on later middle school reform

are reviewed. This history serves as a means to demonstrate how adolescent education has developed. Characteristics of modern middle schools are explored from their foundation in adolescent development. The second area reviews the current literature on the instructional standards movement in education and its impact on school curriculum, instruction, and assessment. Emphasis is given to the area of mathematics. This literature establishes the foundation for the accountability demands included in reform legislation. The final piece of the review presents the demands of the No Child Left Behind legislation and the system of accountability facing all schools.

Defining middle schools should involve the identification of key components of middle level programming focused on meeting the needs of young adolescents. Several pieces of literature have been selected that present both the philosophical base for middle schools as well as their implementation. Consequently, research is explored that measures school success solely upon student academic achievement. How schools will be viewed as meeting students' needs along the continuum of being developmentally appropriate or striving for academic achievement is an important foundation of this study.

### B. DEVELOPMENT OF THE MODERN MIDDLE SCHOOL

1. History of the Junior High

During the 19th century public schools in the United States were predominantly organized in the 8-4 plan: eight years of elementary and four years of secondary school. Briggs (1920), a noted leader and authority of the junior high school stated that the educational system grew out of an organization inherited from Europe without proper literature or generally accepted

definition in which to justify its existence.   Briggs (1920) developed a critical analysis of the junior high school movement by conducting a review of literature, visitations, and educator questionnaires.  Eleven criticisms were identified of the eight-four organization:

1.  The eight-four organization is not justified by psychology, comparative education, historical development, or results.

2.  Isolated and small grammar schools are uneconomical in that; the plant, if equipped with special rooms (shops, laboratories, auditorium, gymnasium, and library), is not fully used; special teachers and supervisors in gong from building to building lose much time; upper classes are frequently not filled; they do not permit of differentiated curricula, department teaching, and promotion by subject.

3.  The buildings and equipment of the high school are unnecessary for the adequate training of ninth-grade pupils.

4.  The work of the elementary school does not prepare for life activities.

5.  The work of the elementary school does not satisfactorily prepare for higher schools.

6.  The progress of pupil in the grammar grades is not marked as in other periods in school life.

7.  In early adolescence pupils do not get the needed influence of teachers of both sexes.

8.  Elementary or childish methods of teaching are too long continued and too suddenly changed.

9.  The eight-four organization makes inadequate provision for the varying needs of pupils due to individual differences of ability and aptitude, of sex, of probable career (educational or vocational)

10. The eight-four organization causes an unnecessary and unjustifiable elimination, because the break between the lower and the upper schools is too sharp; and it comes at the wrong time.

11. There is inadequate provision for personal guidance or direction-social, educational, and vocational-either in the elementary or in the high school. (pp. 4-20)

An analysis by Milanovich (1993) revealed that the majority of Briggs' criticisms were related to efficiency and administrative issues. Few of the criticisms focused on educational concerns in regard to meeting the needs of the adolescent learner.

Charles W. Eliot, president of Harvard University first suggested the possibility of reorganizing the 8-4 plan of education in 1888. The reorganization movement was initiated to improve college preparation, curtail the high rate of school dropouts, and introduce vocational training at an earlier age (Lounsbury, 1998). Eliot and his presidential colleagues charged that the years of 7th and 8th grade in the elementary school were wasted time, devoted to repetition and review (Lounsbury, 1992). The shift of the upper elementary grades to the secondary school would permit the earlier introduction of college preparatory courses, thus beginning the discussion of improved economy of time, which became one of the first buzzwords of the 6-6 organizational plan. Further efforts to define secondary education came in 1894 with the National Education Association's *Committee of Ten on Secondary School Studies* suggesting that secondary education begin in seventh grade.

Besides the need to provide college preparatory work at an earlier age, educators advocated the development of the 6-6 organization plan for other reasons. The reconstituted schools would have the additional charges of curtailing the high rate of school dropouts, establishing a transition or bridge institution between the elementary and high school, and developing an instructional program designed to meet the needs of the young adolescent (Alexander, 1998; Lounsbury, 1992). The highly influential Commission on the Reorganization of Secondary Education, released in 1918 set forth the *Cardinal Principles of Secondary Education* recommending the first six years of schooling to be devoted to elementary education to meet the needs of children ages 6-12 years with the second six years to be secondary

education designed to meet the needs of children ages 12-18 years (Vars, 1998). Additional criteria for junior high school education included:

> The six years to be devoted to secondary education may well be divided into two periods which may be designated as the junior and senior periods. In the junior period emphasis should be placed upon the attempt to help the pupil explore his own aptitudes and make at least provisional choice of the kinds of work to which he shall devote himself…there should be a gradual introduction of departmental instruction, some choice of subjects under guidance, promotion by subjects, prevocational courses, and a social organization that calls forth initiative and develops the sense of personal responsibility for the welfare of the group. (Vars, 1998)

At the time of the 6-6 reorganization plan studies focusing of the problem of school dropouts were revealing startling statistics. Only 10% of first graders remained in school through graduation while 30% dropped out before the ninth grade (Popper, 1967). One third of all children had repeated at least one year of schooling and one sixth of the pupils in any one grade were repeating that grade (Lounsbury, 1992). The peak of dropout statistics at the seventh and eighth grade levels clearly pointed to the need to do something different at those levels. Movement of the grades to the secondary school that included enriching, varied curriculum integrating college preparation and exploratory experiences intended to motivate students to stay in school longer. The lack of transition between the self-contained elementary classroom and the highly departmentalized high school was also thought to be a cause of the high rate of drop-out. The creation of a transitional institution became a highly desired characteristic of the junior high school (Alexander, 1998). Through the transitional grades, collaboration with the elementary and high school was essential in subject matter, methods of teaching, and social control (Briggs, 1920). The junior high school was essentially built to be a hybrid of sorts. The ninth grade was brought from the high school, keeping its high level of departmentalization and methodology. Seventh and eighth grades, while slowly integrating departmentalization, retained some of the

flavor, character, and content of the elementary school (Grambs, Noyce, Patterson, & Robertson, 1961). Curriculum development for the junior high school provided the opportunity to improve instruction for young adolescents by basing instruction on the needs of the adolescent learner. A strong guidance program was advocated for the junior high school as well as each student being assigned to a teacher-advisor in the school to provide personal and educational guidance (Briggs, 1920). As one of the first authors on the age of adolescence, Hall's *Adolescence, Volume I*, published in 1905, advocated special institutions better able to cope with the "new beings" early adolescents were thought to be (Lounsbury, 1998). Thorndike advanced the level of knowledge in this area through his work within stages of development. Individual learner differences were extensive, with the largest differences occurring at the seventh, eighth and ninth grade levels (Lounsbury, 1992). A new school organization structured to meet the needs of diverse learners supported the notion of a 6-3-3 plan. Educators attempted to design a school with an appropriate educational program to meet the needs of the early adolescent. In 1909-1910, Indianola Junior High of Columbus, Ohio, and the Berkeley, (California) Intermediate School were the first schools to initiate the junior high school movement.

The goal of the junior high school design was to meet the needs of the early adolescent while identifying and deepening interests. Characteristics of junior high schools included freedom for children to move around, general education with a focus on intellectual development, appropriate health and physical education courses, chances to plan and manage their own activities, and exploratory experiences including foreign language, fine arts, industrial arts, homemaking, and music (Alexander, 1998). Students were able to choose several exploratory classes offered over the course of the school year in 6, 9, 12, or 18-week segments. Early advocates proclaimed junior high school programs offered greater curriculum scope and

depth than the traditional elementary school while providing better-qualified teachers, appropriate student activities, and adequate facilities.

In the years following the inception of the first junior high schools in Columbus and Berkeley, junior high schools across the United States flourished. By 1925, 880 junior high schools were in existence with the total to peak near 8,000 in the 1970's. Reorganized schools (junior high schools followed by high school) constituted 76% of the nation's secondary schools enrolling 82% of the 11 million students (Lounsbury, 1992, 1998). The composition of most junior high schools followed the advocated 7-8-9 grade pattern. Several other configurations existed, such as 6-8, 7-8, 7-10, and 8-9. Factors determining school organization were more heavily influenced by administrative considerations rather than the educational research supporting adolescent development (Lounsbury, 1992). Toepfer (1992) stated that early junior high schools failed to recognize the individual learning differences between children in the middle grades (grades 7 and 8) and the high school grades (grade 9) and that most junior high school were formed around organizational considerations.

Although the scholars behind the development of the junior high school of the early 20th century emphasized the need to recognize the uniqueness of the early adolescent, the actual formation of the junior high school paid little attention to children's needs. Organizational needs of the school and district were given priority over the needs of the early adolescent (Bossing & Cramer, 1965). Of four surveys of the functions of the junior high school, only one faintly mentioned the need to address the adolescent learner. Briggs' (1920) survey of 265 cities attempted to determine the main reasons for the establishment of the junior high schools. Figure 1 summarizes the results of the survey.

**Figure 1: Reasons for Establishing a Junior High School**
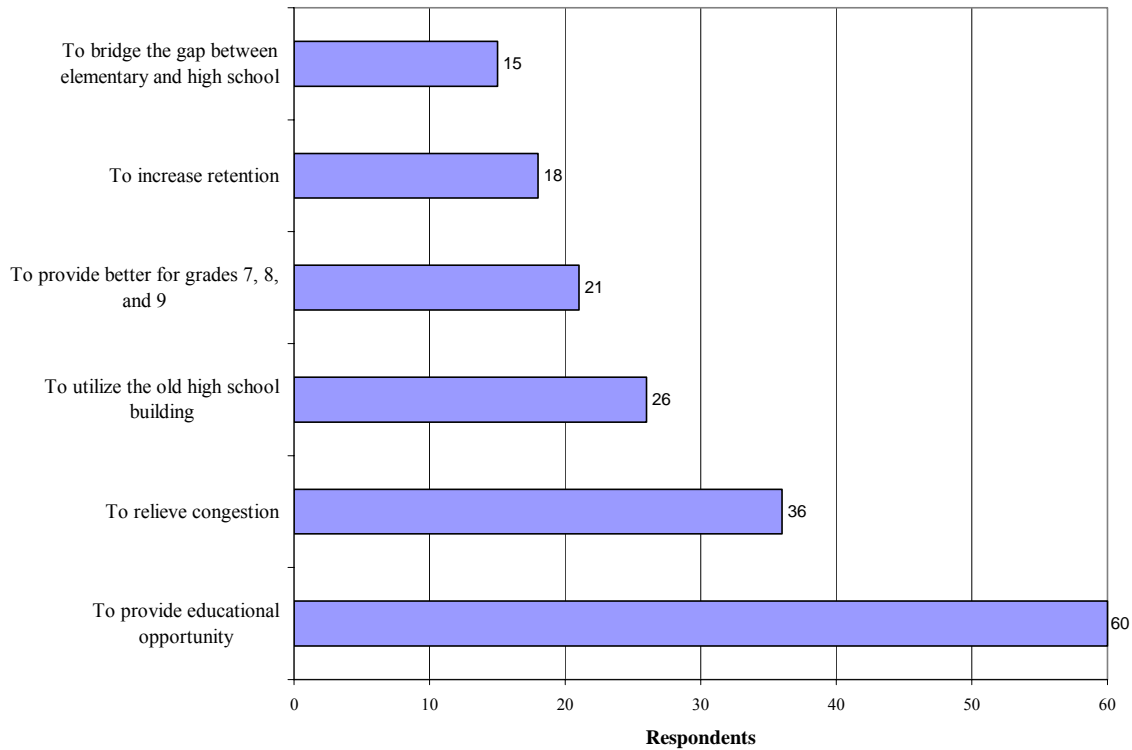


Note: From The Junior High School (p. 34) by T. H. Briggs, 1920, Boston: Houghton Mifflin

Koos (1927) conducted a comparative research study to examine the relative emphasis placed upon certain functions of the junior high school as noted by school administrators in school documents and the published statements of educational leaders from the period of 1910-1916. Koos's findings are summarized in Figure 2.

**Figure 2:  Peculiar Functions of the Junior High School**
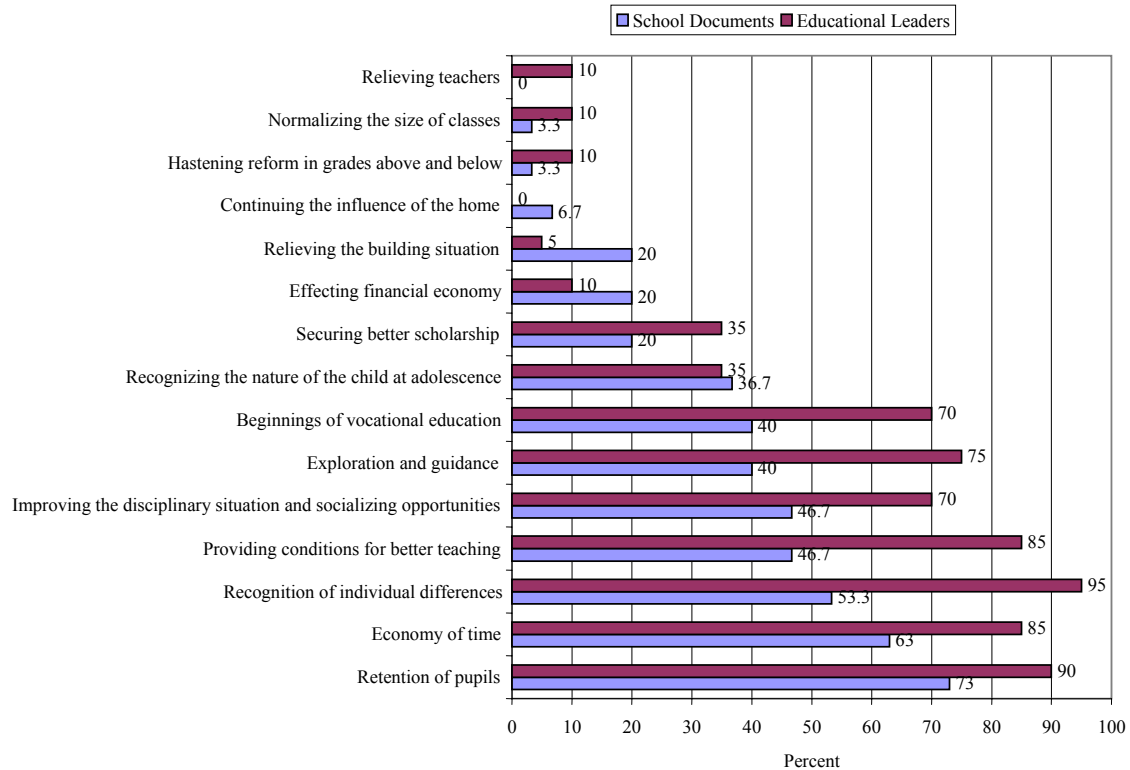


Note: From The junior high school (p. 17) by L.V. Koos, 1927, Boston: Ginn

Davis (1924) characterized the accepted functions of the junior high school from a study of existing practices and current educational writings.  Factors that included organizational themes such as grade configuration, departmentalization, and student advancement dominated the list while focus on the needs of the early adolescent was nearly non-existent.  Programs that did focus on student needs only addressed the adolescent (9th grade structure), not the early adolescent of the 7th or 8th grade.

By the 1960's, the overall effectiveness of junior high schools was being questioned by scholars focusing on adolescent education for many of the same reasons that brought them into

existence. The program that was originally designed to serve as a bridge between the elementary and high schools failed to address the needs of the very students it was designed for (Alexander, 1998). The needs of the pre-adolescent were ignored by a program that was overly influenced by needs of adolescents. Junior high schools mirrored the highly departmentalized high schools as well as having activity and social programs designed with the adolescent in mind. The junior high program was too mature and sophisticated for the children that were still in between childhood and adolescence. Rice (1964) commented on the state of junior high school education:

> The pattern of the junior high school closely parallels the senior high school, but with so little evidence to justify it. It apes the senior high school in athletics, social events, class scheduling, and departmentalization. Its curriculum is pushed down from the grades above it, so that in all too many instances it really is a prep school for the senior high school. (p.30)

Although one of the original justifications for the creation of junior high schools was to provide more appropriate and rigorous curriculum offerings, in practice junior high schools fared no better than traditional 8-4 organizations in the area of student academic achievement. Calhoun (1983), found that in early studies of junior high schools (1917-1930's) the junior high school equaled but never surpassed the traditional school organization in pupil academic achievement. In reality, the junior high school was very different from the one described in the early writings of the scholars within the movement. The junior high school program was supposed to address needs specific to the children that would inhabit the schools, however, in practice many of these school looked like smaller versions of the senior high. Carnegie units of credit determined the $9^{th}$ grade structure while the $7^{th}$ and $8^{th}$ grade operated under a different set of reporting procedures. Inadequate facilities also hampered the junior high school movement as many schools were placed in the old high school or undersized elementary schools (Lounsbury,

1992).    Extensive departmentalization, loss of guidance programs, formal and abstract instruction, and heavy emphasis on college preparation prompted Vars (1998) to characterize junior high schools as no more than "vestibules molded in the architecture as the high school to which they open." (p. 279).   Most teaching staff were secondary trained teachers with little knowledge or interest in addressing the social, emotional, and physical development needs the junior high school student presented.  Staff was trained as content specialists, eager to focus only upon academics.  The structure of public education that placed the junior high school in the middle of a 6-3-3 grade plan for education may have contributed to its inherent failure.  Junior highs schools were not very successful in meeting the needs of the fully adolescent 9th grader, while providing transition services to the 7th and 8th children for which the schools were originally designed.

While junior high schools encountered many shortcomings throughout the 20th century, several innovations were introduced to the education of the 7th-9th grade segment of the educational structure that previously did not exist (Lounsbury, 1992).  Junior high schools were able to introduce an enriched and expanded curriculum with offerings in industrial arts, home economics, foreign languages, and other exploratory courses that previously were not available. A focus on guidance services witnessed the creation of advisor based homerooms and specialized professional guidance counselors otherwise not offered to the upper elementary grades.  A more expansive offering of student activities, clubs, and sports were introduced to give emerging adolescents opportunities to socialize, develop leadership skills, and pursue academic interests (Lounsbury, 1992).

Although some changes to the junior high school were instituted to bring the organization closer to its conceptual beginnings, the dominance over the junior high school by the senior high

was difficult to overcome.  Not until contributions from adolescent psychology in the 1940's began to identify differences in development and learning between young adolescents and older adolescents did shifts occur away from organizational concerns to student based (Toepfer, 1992). Scholars of secondary education increasingly identified the developmental and programmatic inappropriateness of the implementation of the junior high school.   In addition to the realization that the junior high school, as it had evolved, was not effective, the launching of Sputnik and the recognition that children were reaching physical maturity at a much younger age led to the refocus of attention to the middle grades in the 1940-1950's (Lounsbury, 1992).  Early attempts at changing the junior high school were met with heavy resistance by powerful forces of institutionalism within the school setting.  The first middle schools developed to only mimic the structure of the junior high, moving heavy departmentalization even lower into the grade structure.  Middle schools of the 1950's saw changes in grade level configurations and names posted on the walls, but where it was needed within programs and practices no differences were evident.

2.      Emergence of the Modern Middle School

As the junior high school of the 1940-50's began to falter in its' ability to generate a separate identity from the high school, interest in the development of a middle school began to gather momentum.   The middle school movement had begun in opposition against the program of the junior high school, not against the concept of a more developmentally appropriate school organization (Eichhorn, 1980).  Middle schools were designed to capitalize on the positive attributes of the junior high school in the attempt to meet the unique developmental needs of children.   Eichhorn (1966) presented four main reasons to account for the relatively rapid acceptance of the middle school as a valid educational organization:

1. Recognition and reaffirmation of the belief that youngsters aged 10-14 are in a unique stage of development in which they share similar physical, mental, social, and emotional characteristics.

2. New medical evidence that suggests that youngsters attain puberty at an earlier age than before.

3. Forces such as the new technology, racial integration, and the knowledge explosion that were affecting society.

4. The junior high school organization was perceived as and in many instances had become an institution patterned after the senior high school. (p. viii)

Just as Harvard President, Charles W. Eliot was a driving force behind the introduction of the junior high school of the early 1900's; middle schools also received a powerful endorsement from another Harvard President, James B. Conant (1960). Conant, among others, joined in the post-Sputnik obsession with academic mastery, especially in the areas of the mathematics and science. The movement consisted of the introduction of new math and science in the middle grades and returning ninth grade to the high school to take advantage of a full four year sequence of technical and advanced courses (Lounsbury, 1992). By the 1960's new middle schools of grades 5-8 or 6-8 began to take hold of the educational landscape of the United States.

3.      The Transescent Child

American education had characteristically developed organizational structures based on the nature and needs of its students. Eichhorn (1966) posited that given the status of human growth and development, a definite need existed for designing a middle school based on the compatible physical and social traits of its students. Children of the age between 10 and 14 years old had been termed preadolescent, early adolescent, prepubescent, and adolescent, with each term encompassing differences in meaning and development. Actually, the middle school consisted of students from all these designations. If the middle school was to be successful in

addressing the developmental needs of the children, a common reference point or definition was needed to identify this particular, unique group of students. In his landmark work on middle schools, Eichhorn created the term transescence to describe the developmental stage of children age 10-14. Eichhorn (1966) defined transescence as:

> The stage of development which begins prior to the onset of puberty and extends through the early stages of adolescence. Since puberty does not occur for all precisely at the same chronological age in human development, the transescent designation is based on the many physical, social, emotional, and intellectual changes in body chemistry that appear prior to the puberty cycle to the time in which the body gains a practical degree of stabilization over these complex pubescent changes. (p.3)

Transescence, then, describes a stage of development within the life cycle, commonly occurring between the ages of 10 and 14 years of age characterized by significant physical, emotional, intellectual, and social changes within a relatively short period of time. The diversity within the areas of human development during the middle school years have been documented to be more significant than those in either the elementary or high schools (Toepfer, 1992). The diversity created challenges for the middle level educator, with a focus that was different from any other organizational level. The physical, emotional, intellectual, and social changes in development did not take place in isolation from one another. They were very much interconnected, often developing at a different pace, but overlapping with each other nonetheless. Milgram (1992) offered an analogy of the developing transescent as compared to a middle school music class:

> One can think of the young adolescent as a school orchestra during rehearsal. The woodwinds, the brass, and the strings all play separately but they are all interconnected and they play, most often, at the same time. And, like the school orchestra, young adolescents are often out of tune as they attempt to cope with significant change. (p.17)

14

The lives of transescents were shaped by several forces, both internal and external. Internal forces caused by internal body changes affected the child's ability to process the surrounding environment. Conversely, external forces generated by the environment impinged upon the individual. Eichhorn (1966) developed these forces into an interconnected socio-psychological model to be used in the development of an educational structure and program designed to meet the needs of transescents. The components of the socio-psychological model are illustrated in Figure 3.

**Figure 3:  Social psychological Model**
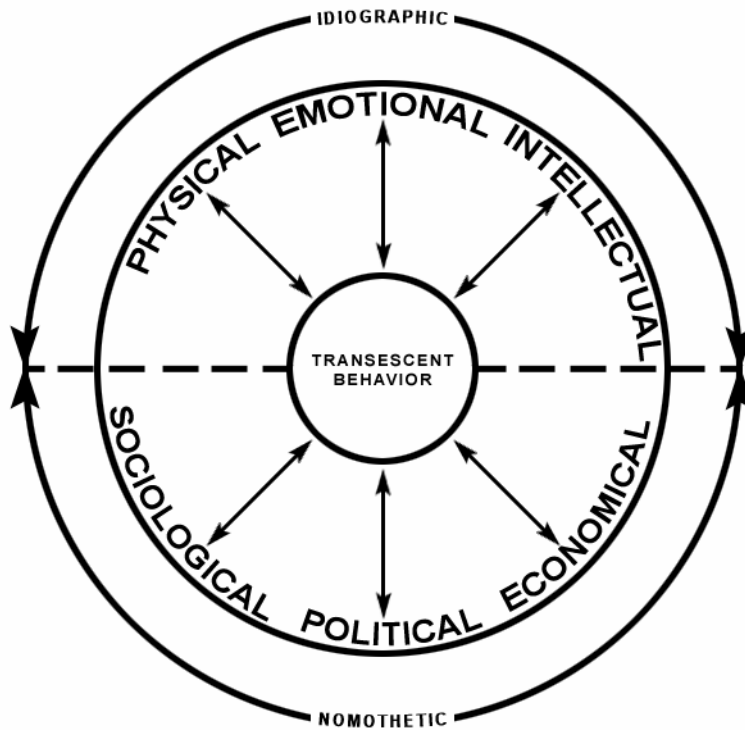
15

Although the physical, emotional, intellectual, and social components of development occur harmoniously throughout the period of transescence, each characteristic will be explored independently in order to fully examine its impact on transescent development.

a.     Physical Characteristics - Transescence marked a period of growth in which the predictable, stabile rate of development enjoyed throughout childhood comes to an abrupt end.  It was during this time that the human body experienced the greatest period of growth and development, with the exception of the period of infancy (Eichhorn, 1966; Milgram, 1992).  Children entered this stage of development at different ages and progress at varying rates.  The transformation ultimately resulted in the child becoming an adult.  The growth spurt experienced by children during the period of transescence was clearly documented (Alexander, Williams, Compton, Hines, & Prescott, 1968; Eichhorn, 1966; Milgram, 1992).  Growth spurts normally lasted for two years, with girls entering the period of intense growth two years before boys, resulting in a period of time in which girls were considerable taller than their male counterparts.  Typical rates of growth included 9-10 inches for boys and 7 inches for girls (Tanner & Marshall, 1974).  During the period of accelerated growth rates some body parts grew at different rates resulting in *asynchronicity*, or ungainly movements and awkwardness often resulting in uncomplimentary nicknames (Lounsbury & Clark, 1990).  The growth spurt along with the development of primary and secondary sexual characteristics represented the most significant physical events of the age group (Milgram, 1992).

Transescence also marked a period of physiological development toward the end of sexual maturity in which children were transformed into adults.  For the girl, a series of events including the development of breasts, widening of the hips, and the beginning of the menstrual cycle complete with the onset of mood changes to varying degrees marked the entrance to

puberty (Eichhorn, 1966; Milgram, 1992). The arrival of sexual maturity for boys was more difficult to measure due to lack of a specific event such as menstruation. Several characteristics were used to assess the arrival of puberty such as facial and pubic hair, voice change, increased penis size, ejaculation, and nocturnal emissions (Eichhorn, 1966; Milgram, 1992).

The arrival of physical and sexual maturation resulted in considerable concern for both girls and boys during the period of transescence, magnified by the fact that the onset and progression through the change process was different for each child. Both sexes tended to be overly concerned with body development and comparisons within the same sex. Imperfections were noted and compensated for through the use of make-up, weight lifting, and padded bras. Transescents became increasingly aware of their appearance and the perceived importance it played in their peer relationships. Milgram (1992) documented the difficult environment of transescence:

> In the egocentric, comparative world of the young adolescent, these differences are generally translated into feelings of inadequacy and deficiency, clearly for some more than others. The overweight, short female, and the skinny, acned boy without pubic hair may have more negative feelings to overcome than their peers…It is within this social context that young adolescents must adjust to their new bodies. (p. 19)

The individual reactions of youngsters in regard to the arrival of sexual maturation were greatly shaped by the level of preparation, attitudes, and reaction by the family (Atwater, 1988). Reactions by family members can shape life altering events as one of pride and celebration or as one of shame and embarrassment.

The differentiation of growth patterns and its relation to behavior was also an area of considerable research. Mussen and Jones (cited in Eichhorn, 1966) stated that earlier maturing boys form more favorable relationships than late maturing boys do. Boys that reached maturity early were often the leaders within groups, more relaxed, and possessing higher levels of

17

confidence than those of late maturing boys.  Shonfeld (1950) found similar results in a study of late maturing 9 to 16 year olds.  Delays in the onset of the growth spurt, muscle development, or sexual maturation led to possible personality and psychosomatic complaints.   Female transescents experienced similar patterns of behavior between early and late maturers.  Earlier maturing girls experienced better peer relations, higher levels of independence, and enhanced prestige while later maturers tended to believe they were unloved and uncared for (Eichhorn, 1966).

Eichhorn (1966) and Tanner (cited in Milgram, 1992) have documented the trend toward earlier physical maturation over the past century.  Transescents have been achieving greater size at an earlier age than previous generations.  The average girl achieves a greater height than her mother and reaches sexual maturity nearly a year sooner.  The age of menstruation has been getting earlier by approximately four months per decade (Tanner, 1978).  Boys are currently reaching their adult height by the age of 18, however, in the late 1800's full adult height was not reached until age 23.  Possible explanations for the earlier rates of maturation included better nutrition and favorable socio-economic conditions.  With the continued absence of events of famine, disease, and other catastrophic events, it is anticipated the rate of accelerated growth will continue (Eichhorn, 1966).

b.        Social Characteristics - The years of transescence marked a period of significant change in the social characteristics and self concept as youngsters find themselves in a world in between childhood and adulthood.   A shift occurred away from a state of dependence on parents and the home for personal security, interests, and values to independence and an increased reliance upon the peer group (Eichhorn, 1998).  Social development in transescence was viewed as a sort of emancipation in which for the first time children exercised primary authority over the selection

of a peer group.  Previous to this time, children did not have a choice in selection of parents or teachers.  Friends represented an important act of choice for transescents (Milgram, 1992).  Friends provided an opportunity to compare families, contrast values, take risks, and gain reactions to things like dress, jokes, interests, and appearance.  Selection of a peer group was based upon the degree of similarity of the group to the individual. Significant attempts were made for individuals in the group to look and act like each other.  Often, groups were chosen to facilitate the level of social acceptance.  For girls, being part of a prestigious group was perceived as a key to social acceptance while boys put the most emphasis on the participation in athletic activities (Milgram, 1992).

Gender patterns within the peer group were greatly determined by the stage of transescence.  Early transescents sought same-sex peer groups with similar interests and activities.  Children in the later stages of transescence began to experiment with cross-sex grouping, however, premature development of such relations were usually misinterpreted as romantic and resulting in teasing and name calling (Eichhorn, 1966; Milgram, 1992).

Peer pressure and influence reached their peak between the ages of 11-17 years of age.  Group actions demonstrated the level of dependency on peer approval.  Transescent children were caught in a moral dilemma between adult standards and expectations and the desire to conform to the peer group to gain acceptance (Eichhorn, 1966).  Conforming to the fad risked adult pressure and displeasure while giving in to adult standards resulted in peer rejection.  Decision-making became a balancing act along the continuum, realizing that no matter what path was chosen, some group will express disappointment.  Enforcement of school policies related to dress code provides an excellent example of an arena in which this struggle develops.  Not previously experienced, the teacher of this age group may find himself as an outsider to which

members of the group do not confide.  Membership in the peer group remains unchanged even with open conflict or disagreement with the teacher (Alexander et al., 1968).

Several changes within society had significant impact upon the socialization process for transescents.  Family mobility provided opportunities for children to experience new environments and experiences, however, created a level of instability as children were uprooted from existing peer groups.  The economic market focused on the transescent as valuable consumers.  Merchandising programs were directed at the teen segment with the goal of influencing purchasing behaviors in the area of appearance, music, and interests. Keeping up to date with the current fads or fashions was of utmost importance to transescents as they are very aware of peer opinion and acceptance (Eichhorn, 1966). Technological advances as part of the information explosion of the 20th Century created increases in the experiences of children leading to widening of the differences between adults and children.   Johnston (1992) proposed that socialization of youth included the 2-part question, *how do we learn to do things the way we do things around here?*  With the increase of information and rapid rate of change after World War II, adults were less able to maintain firm control over the outcomes of that question due to less ability to predict life events resulting in a diminished status as a useful resource.  Transescents viewed the wisdom of previous generations as antique and not useful (Johnston, 1992).   The learning process of how to be and the way to do things became a process of observation, analysis, and trial and error involving a peer group.

c.      Emotional Characteristics - During the period of transescence, youngsters experienced a significant level of emotional turmoil not equaled at any earlier period of life.  The marked changes in the physical appearance and maturity of transescents previously discussed should not be confused with emotional maturity.  Transescents experienced a roller coaster of emotions as

they moved toward maturity (Alexander et al., 1968). This period of transition created a contradiction of needs both within the home and at school (Milgram, 1992). Perfectly acceptable levels of affection between transescent and family members resulted in total mortification with peers present. As older adolescents moved toward emotional maturity, the development of self awareness would begin and continue throughout the teen age years. Strang (cited in Milgram, 1992) suggested four variations of the self concept that transescents must reconcile before a degree of emotional stability would be reached:

1. *General self-concept*: The adolescent's evaluation of himself or herself; the perceptions of his or her abilities or roles
2. *Temporary self-concept*: A temporary evaluation, perhaps influenced by a recent event or remark
3. *Social self*: The way the adolescent believes others view him or her
4. *Ideal self*: How the adolescent would like to be (p. 22)

As children moved through the period of transition from childhood to adolescence, many attempted to conceal their emotional fragility by efforts to look tough or mature, turn away help or affection, and by engaging in nuisance behaviors (Milgram, 1992). Autonomous behaviors began to emerge during the middle level years and develop more fully as children reach adolescence. Behavioral autonomy, the ability to act independently with little supervision, developed first as children completed independent projects such as setting an alarm clock on their own (Milgram, 1992). Emotional autonomy, the ability to take criticism and rejection and draw support and encouragement from within, developed toward the end of transescence. Most middle school students did not have a strong sense of emotional autonomy and were easily discouraged and lost self confidence (Steinberg, 1985). Schools that emphasized content and academic excellence at the expense of a strong emotional support program hurt the well being of children undergoing this stage of development.

d.     Intellectual Characteristics - As youngsters move through the period of transescence, each child followed a similar path of intellectual development.  Although all children encountered the same stages of development, they achieved levels at different rates and at different times with not all children reaching the same ending point (Eichhorn, 1966).  The 1960's experienced a great increase in the amount and quality of new knowledge within the area of intellectual development.  Jean Piaget and associates through the Geneva group study completed much work in the area.  Piaget identified three stages of intellectual development: 1) preoperations, 2) concrete operations, and 3) formal operations.  Piaget found each of the stages to be sequentially based and progression to the next level was dependant on the attainment of the previous level.  Piaget's framework for cognitive development is presented in Table 1.

**Table 1:  Levels of Cognitive Development**

| Stage | Age |
|-------|-----|
| Preoperations | Birth to 6 or 6 1/2 |
| Concrete Operations | 6 or 6 1/2 to 12 or 13 |
| Formal Operations | 12 or 13 to 18 |

Note:     From Piaget and Middle School Teaching (pp. 48-50) by W.D. Popejoy, In D. R. Steer
          (Ed.). The Emerging Adolescent Characteristics and Educational
          Implication, 1980, Columbus, OH:  National Middle School Association.

According to Piaget's framework, transescence occurred during the late stages of concrete operations and continued through the period of formal operations.  Alexander (1968) characterized the transescent period of cognitive development as one in which the child was able to move between what is real and possible.  They were able to hypothesize and move beyond what was perceived as reality to what might be or discover to be.  Other characteristics of the formal operation stage of development included the ability to think logically, use propositional thinking to engage in problem solving strategies, reverse the order of mental operations from the

potential to the real, and develop the capacity for combinatorial analysis as a thinker in order to isolate all possible variables in a situation and view them in the fullest range of combinations (Eichhorn, 1966). Development during the formal operations stage also reflected increases in the ability to think creatively, however, transescents often suppressed their creative tendencies for fear of being labeled as different (Milgram, 1992). Attainment of abstract thinking processes allowed the transescent to see other points of view, experience empathy, and demonstrate reflective thinking or thinking about thinking. As youngsters developed these new mental capacities or abilities, they experienced awkwardness or a period of *pseudo stupidity*, an intellectual regression, as they gained practice using the new thought processes (Elkind, 1978).

Piaget's work within the area of stages of cognitive development was based on biological theory that all children will make the transition through the stages of development. Flavell (1963) extended Piaget's thought within this area to include:

> The positive, constructive something we inherit, Piaget argues, is a mode of intellectual functioning. We do not inherit cognitive structures as such; these come into being only in the course of development. What we do inherit is a *modus operandi*, a specific manner in which we transact business with the environment. There are two important general characteristics of this mode of functioning. First, it generates cognitive structures. Structures come into being in the course of intellectual functioning; it is through functioning, and only through functioning, that cognitive structures get formed. Second, and this is a most important point, the mode of functioning which Piaget says constitutes our biological heritage remains essentially constant throughout life…It is because of this constancy of functioning in the face of changing structure that its fundamental properties… are referred to as functional invariants. (p. 43)

Although all children followed a similar path through cognitive development, not all youngsters attained the levels at the same rate and times as others. Elkind and Adelson both concluded in their work that transescents did not develop the characteristics of formal operations rapidly at the beginning of the stage (Toepfer, 1992). Transescents often functioned more effectively at the concrete operations stage in an effort to refine the skills of that level before

progression to formal operations could take place. Through his work examining student level of cognitive readiness, Adelson (1983), cautioned that there were intellectual limitations to the transescent age of development and that one must be careful not to expect transescents to learn and comprehend ideas beyond their level of cognitive readiness. Although children may move from concrete to abstract thinking consistent with the formal operations stage of development, they may not master the skills associated with the stage of development. Transescents experienced uneven intellectual development across subject areas. Spear (1992b) noted that students may not demonstrate the same levels of abstract thinking in some areas of the curriculum as they do in other areas. Schools must exercise caution not to stereotype children at this stage of intellectual development and influence certain areas of study based on the diverse rates of abstract thought attainment.

4. Formation of Middle School Structure

The advent of the modern middle school movement focused on developing educational programs designed to meet the diverse needs of a unique group of students, the transescent. Emphasis was given to programs that were not modified high school approaches or upgraded elementary programs. The period of transescence was marked by significant social, emotional, physical, and intellectual development. Programs needed to be comprehensive in nature, not just focusing on the intellectual. Eichhorn (in David, 1995) argued that there could be no quarrel with the point of view which stated that cognitive learning was vital, however at the transescent level, social and emotional needs were at least as crucial. Overemphasis of mastery of subject matter in place of a solid general education was contrary to the goals of middle level education. Learning how to learn and the development of individual social, intellectual, and living skills constituted the essential elements of the educational experience provided by the middle school

(Toepfer, 1992). Several early writers in the area of middle school education promoted specific educational programs and organizational structures to meet the unique needs of the transescent learner. Middle schools of the modern era began to develop with a focus on three specific areas: curriculum, grouping techniques, and guidance programs.

a.     Curriculum - For the curriculum of the middle school to meet the needs of the transescent learner it needed to be flexible, permitting and assisting students to progress at different rates and to different depths. Attempts to individualize instructional goals were used to provide motivation for learning in an effort to reduce the issue of dropouts. Early writings of curricular program development included the phases of learning skills, other common learnings, and personal development (Alexander, 1998). Learning skills included reading, writing, speaking, listening, and computation skills. Common learnings of literature, social studies, languages, mathematics, science and fine arts were planned to follow a sequence of instruction from grades K-12. A significant amount of attention was given to the area of personal development with health and physical education courses designed for the transescent and exploratory courses to include foreign languages, typing, fine and practical arts, and remedial basic skills.

Eichhorn (1966), in his landmark writings on middle school development, *The Middle School*, contributed to the structure of the middle school curriculum. The foundation of the socio-psychological model was formed by two distinct curricula areas of analytical and physical-cultural. The analytical curriculum included the content areas of language, mathematics, social studies, and science. The physical-cultural curriculum also included four distinct content areas consisting of fine arts, physical education, practical arts, and cultural studies. Further exploration and clarification of curriculum for transescent learners led to the development of the model in Figure 4.

**Figure 4:  Emerging Adolescent Curriculum**
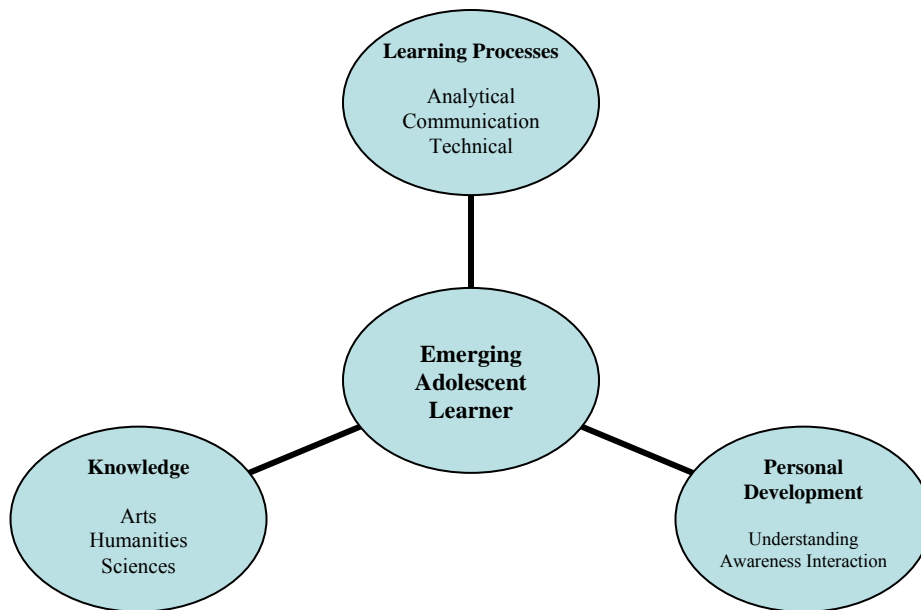


Note: Adapted from The emerging adolescent school of the future – now (pp. 54-71) by D.H. Eichhorn, In R. David (Ed.), *Moving forward from the past*, 1998, Columbus, OH: National Middle School Association.

Learning processes focused on how diverse students acquire, organize, and apply knowledge.  Instructional practices, teaching techniques, and student grouping organizations would need to take into consideration the diverse range of abilities of the students.  The specific content areas for skill and process learning included language, mathematics, science, and the practical and fine arts, however, interrelationships between the areas needed to be exploited.  The knowledge component emphasized content, but not in the context of mastery.  The acquisition of knowledge was a vital aspect of the transescent learning program but not in an attempt to promote a set body of knowledge (Eichhorn, 1972).  Youngsters worked with content in the perspective of analyzing man's contributions to society as well as their relationship and problems within the culture.  Elements of the knowledge dimension were taught in an integrated or

interdisciplinary curriculum. Related areas such as music, art, and creative expression courses were integrated. The final area of curriculum focused on personal development. Although integrated into the other parts of the curriculum, additional focus must be given to the area of personal development due to its vital importance. Emerging adolescents possessed a need to understand the rapid nature of change and growth experienced during transescence. With an understanding of maturation, the youngster was able to develop a favorable self concept contributing to the learning process (Eichhorn, 1972). Another critical need for this period of adolescence was to provide opportunities for transescents to engage in discussions related to peer and family relations. The period of transescence was marked with significant changes and problems in relations with others. The developing adolescent needed assistance in coping with the realities involved as to avoid serious consequences.

Curriculum of middle schools included innovative exploratory programs to help learners explore personal needs and interests. These programs were provided for not only in the traditional areas of art, music, home economics, and industrial arts, but as mini courses and activity programs. Middle school students have been characterized as wanting to do everything they have never done before, be someone else for awhile, and search for their own talents and skills (Bergman, 1992). Exploratory programs at the middle school attempted to meet the needs of discovery present in this age group. Mitchell (cited in Bergman, 1992) identified exploration as a visible behavior of young adolescents' attempt to meet their five basic needs of status and acceptance, independence, achievement, role experimentation, and positive self regard. Recommendations for planning exploratory programs from *An Agenda for Excellence at the Middle Level* (1986) included:

1. Provide opportunities for students to achieve and demonstrate excellence in a number of domains (i.e., the arts, athletics, academics, crafts). Make certain that every student in the school has a reasonable opportunity to excel at something (pp. 3).
2. Recognize that the young adolescent is interested in virtually everything, but nothing very much, by providing adequate exploratory programs that introduce students to a variety of topics, skills, and content fields without requiring mastery. This can be accomplished through a series of short courses or elective units that give the student some sense of control over the kind of learning he or she undertakes (pp. 7).

The middle school child needed increased opportunities to develop a self-concept of related interests and skills through exploratory education. The opportunities were critical if the transescent was to find out who they really are and what they might like to become (Toepfer, 1992).

b. Grouping Techniques - With the introduction of the research focused on the developmental traits of the transescent, grouping strategies previously used in the junior high school or high school were not appropriate for the modern middle school. Grouping in regard to cognitive factors resulted in significant social-emotional problems for those children who at least temporarily achieved at a slower academic rate (David, 1995). Cognitive grouping also referred to as tracking, in which children were sorted into rigid, homogeneous groups based on student ability or previous achievement, contradicted the fundamental goals of transescent education.

Early writers in the area of middle schools advocated flexible grouping structures based on a heterogeneous abilities. Heterogeneous grouping focused on organizing children through a mixture of abilities or other traits. Basic instructional units, or teams, were used to organize the school in which groups of students (75-150) and teachers (3-5) were placed together in an interdisciplinary design (Alexander, 1998). Spear (1992a) regarded the interdisciplinary team as the heart of the middle school with the goal of breaking down the barriers of teacher isolation,

bringing teachers together to enhance the learning for young adolescents. Slavin, Braddock, Hall, and Petza (cited in Spear, 1992a) found that tracking plans have beneficial effects on student achievement when they incorporated the following features:

1. Students remain in heterogeneous groups most of the day and are grouped by performance level only in such subjects as reading and mathematics in which reducing heterogeneity is particularly important.
2. The grouping plan reduces heterogeneity in the specific skill being taught.
3. Group assignments are both flexible and frequently reassessed.
4. Teachers adapt their level and pace of instruction in regrouped classes to accommodate students' levels of readiness and learning rates. (pp. 264)

Appropriate grouping practices for the transescent learner included modification of the instructional methodologies utilized within the classroom to provide better alignment with learner styles, peer tutoring in which students tutor each other to provide assistance, cooperative learning structures, and multiple techniques for individualization of instruction within the regular classroom (Spear, 1992a).

The nature and characteristics of the middle school student were in direct conflict with the negative aspects of ability grouping, or tracking. Heterogeneous school environments in which teachers planned instruction to include curricular and instructional adaptations to meet the individual needs of the learner promoted increased achievement by all students and enhance learning. Interdisciplinary teaming practices promoted flexible grouping structures and increased collaboration on the part of professionals within the school.

c. Guidance Programs - One of the most prominent aspects of the middle school was the emphasis placed on guidance programs. Elements of guidance education needed to be integrated into every program in order to assist youngsters in meeting the stress associated with the elements of transescent development. Inherent in transescent development was the onset of conflicts within the value systems whereas the middle school provided a real opportunity to

focus on providing leadership in fixing values that would survive the perils of later adolescents and adult life (Alexander, 1998). The guidance services of the middle school needed to include a progressive array of services to meet the diverse needs of the students.

At the most basic level, guidance programs were integrated into the very core of the middle school educational program. The environment, curriculum, and grouping procedures addressing the needs of the transescent in essence created a school based on guidance principles (Eichhorn, 1966). Although many transescent problems may be curtailed through organizational structures of the middle school, additional guidance programs were available to meet additional needs.

The homeroom structure or advisory group was promoted as an opportunity for each child within the middle school to be known well by at least one caring adult. Alexander (1968) defined the homeroom as:

> A regular period, usually daily, in which group activities may be carried on, and also in which the teacher in charge has opportunity to talk with individual pupils, to meet with small groups with similar problems or tasks, and to arrange schedules for both group and individual activities. (pp. 66)

Advisory programs provided children with the opportunity to interact with an adult in a caring relationship in which the adults were viewed as real people with likes, dislikes, hobbies, and interests. The advisory period provided a structured time where teachers were able to focus on relationships with students. Alexander and George (cited in Connors, 1992) emphasized the importance of positive relationships for students struggling with personal development and formation of self-concept:

> Every student needs to have a relationship with at least one adult in the school which is characterized by warmth, concern, openness, and understanding. Such a program focuses on the "fourth R," relationships: interpersonal relationships which produce growth for both people involved. Good middle schools cannot be

places where teachers and students pass by each other without recognition or attachment, like the stereotypical ships in the night. (pp. 90)

The goal of the homeroom advisory structure was to operate as a supplement to the middle school's full time guidance program. The teacher/advisor assisted in the proper channeling of counseling services to students and in no way took the place of the guidance counselor. The role of the teacher/advisor was that of facilitator, encouraging positive relationships through small group environment built upon trust and respect. Effective teacher/advisors recognized that assisting students in the formation of their self-concept resulted in improvement in academic performance within other curriculum areas (Connors, 1992). Examples of homeroom topics included orientation to the school, development of team identity, goal setting, study skills, adolescent issues and concerns, and career planning.

Middle school programs were designed to meet the specific needs and characteristics of the developing transescent learner. The early middle school movement of the 1960's and 1970's attempted to capitalize on the current research to design specific programs for the middle schools and not simply reformulate existing programs at the elementary or high school levels. Consistent with the movement was the need to specifically prepare teachers for the task of teaching young adolescents. Without the special preparation needed for its teachers, middle schools would continue to face the dilemma of being miniature versions of the high school or glorified extensions of the elementary school (McEwin, 1992). *Turning Points* (1989) called for dramatic changes in both what teachers learned to become middle school teachers and how they learned it. Specific middle level certification provided teachers with elements needed to be a successful middle school teacher. Perspective middle school teachers needed to posses a strong core of knowledge in one or two subject areas, understand principles of guidance in order to serve as advisors, learn to work as members of a team, and above all else, understand adolescent

development through course work and direct experience in middle grade schools (Development, 1989). The full success of the middle school program would be realized only after schools were staffed with teachers that viewed that teaching assignment as a destination point, specifically trained to work with early adolescents to provide excellent, developmentally appropriate instruction.

The middle school movement gained a powerful advocate in 1963 with the formation of the National Middle School Association (NMSA). NMSA's position paper, *This We Believe* (1982) set forth a rationale and definition of middle school education greatly contributing to the advancement of the efforts of middle level education across the country. Included with NMSA's beliefs about middle level education was the description of essential elements of a true middle school. The essential elements included:

1. Educators knowledgeable about and committed to young adolescents
2. A balanced curriculum based on the needs of young adolescents
3. A range of organizational arrangements
4. Varied instructional strategies
5. A full exploratory program
6. Comprehensive advising and counseling
7. Continuous progress for students
8. Evaluation procedures compatible with the nature of young adolescents
9. Cooperative planning
10. Positive school climate (pp. 27)

The essential elements represented programmatic characteristics related to certain conditions and factors of the transescent age group that would be present in a true middle school. Although it was recognized that other factors may be present, these components were considered to be of special importance.

Several revisions of *This We Believe* were created by NMSA, with the latest edition, *This We Believe, Successful Schools for Young Adolescents* (2003), supported by growing research about young adolescent growth and development as well as successful practices in curriculum,

organization, and other aspects of middle schools. Within the report, schools were cautioned not respond to current demands of state and federal standards by choosing among characteristics, implementing only those that appear to be more achievable or more appropriate for particular situation. Several research studies reported in *Research and Resources in Support of This We Believe* (2003) linked the full implementation of the middle school concept to improved student academic and social-emotional development and provided middle level educators with a firm foundation from which the demands of standardized assessments can be addressed.

The Pennsylvania Middle School Association adopted the ten essential elements of a true middle school from the original *This We Believe* as the selection criteria for their Donald H. Eichhorn Outstanding Middle Level Program Award. The award honors the achievements of Eichhorn, one of the early writers on middle school education and member of the original NMSA committee charged with the task of developing the original position paper, *This We Believe.* The award was awarded annually to one middle school in the state of Pennsylvania that best exemplified the characteristics of a true middle school.

Middle level educational programs gained significant support and validation with the 1989 release of the Carnegie Council on Adolescent Development, *Turning Points: Preparing America's Youth for the 21$^{st}$ Century*. The report was regarded as a landmark publication focusing on the serious concerns facing young adolescents and the common failures of most middle level schools in attempting to design programs for the unique needs of the age group (Lounsbury, 1991). The report received extensive publicity and pushed middle level issues onto the public agenda, largely due to the prestige of the sponsoring organization.

The recommendations included in the report aligned closely with position of active middle school educators and quickly gained the endorsement of organizations and individuals

involved in the middle level movement. An educational program that focused on the emotional, physical, social, as well as the intellectual development was emphasized as society's most powerful force to help every young person thrive during early adolescence (Carnegie Council on Adolescent Development, 1989). Key recommendations included in the report encouraged schools to: create a community for learners through smaller learning environments, teams of teachers and students, and adult advisors for every student; teach a core of common knowledge including components for critical thinking skills, development of a healthy lifestyle, citizenship education; and ensure the success for all students by grouping students for learning in flexible groups instead of tracking organization, providing flexible schedules that encourage interdisciplinary connections, and expanded opportunities for learning based on student interest and individual strengths.

Efforts to follow-up on the implementation of the recommendations made in *Turning Points* were coordinated through the Middle Grade School State Policy Initiative (MGSSPI). The group assessed the implementation of the recommendations and determined the nature and extent of any benefits associated with the implementation. The results found through MGSSPI were the impetus for the development of *Turning Points 2000*, an in-depth examination of how to improve middle level education. Conclusions reached in the study stated that while most middle schools of the 1990's adopted structures to improve relationships and the emotional well-being of the students, little had changed in the areas of curriculum, assessment, and instruction (Jackson & Davis, 2000). The recommendations from the original Turning Points were reordered as to ensure the success for every student as the central goal of the design with all the recommendations as means in achieving that goal. The structure of the Turning Points 2000 design is presented in Figure 5.

The report emphasized that implementation of all of the recommendations was necessary in order to impact success for all students. Simply focusing on educational structures, while being vital to the process of improvement, did not get close enough to the heart of schooling, the classroom practice. Efforts to address the curriculum of the middle school were relatively nonexistent. The design presented in Figure 5 pointed to the systemic approach needed to make an impact in student achievement. Felner (cited in Jackson & Davis, 2000) remarked that consistent with the *Turning Points* model, schools that implemented the recommendations comprehensively and with fidelity experienced significant improvements in student achievement. The further along the school was in the holistic implementation process, the greater impact on achievement was apparent.

**Figure 5:  The Turning Points 2000 Design**



Teach a curriculum grounded in standards, relevant to adolescents' concerns, based on how students learn best, and use a mix of assessment methods

Involve parents and communities in supporting student learning and healthy development

Use instructional methods that prepare all students to achieve high standards

Ensure Success for Every Student

Provide a safe and healthy school environment

Organize relationships for learning

Staff middle grades schools with teachers who are expert at teaching young adolescents, and engage teachers in ongoing professional development

Govern democratically, involving all school staff members

Note:    Adapted from *Turning Points 2000, Educating Adolescents in the 21st Century* (p. 25) by
          A. W. Jackson and G. A. Davis, 2000, New York; Carnegie Corporation of New York.

5.     Summary

In summary, the success of the middle school has been its impact on the organization of the school. Pulling from the few successes of the previous junior high school movement and the research regarding adolescent development, various structures were implemented to create positive learning environments based on the developmental characteristics of the transescent. The middle school enjoyed a tremendous level of success from its inception in the 1960's.

Formation of the National Middle School Association and the publication of *Turning Points* were significant contributors to the popularity of the movement. However, in the area of curriculum, the middle school has made only modest gains in the goal of providing an appropriate and responsive curriculum to meet the needs of the middle level learner (Calhoun, 1983; Jackson & Davis, 2000).  Middle schools were encouraged to move beyond the initial phases of change and integrate improvements in classroom practice and instruction to continue to meet the intensifying demands of state and federal standards.

6. Essential Sources – Formation of Middle Schools

| Author | *Title* | Year | Summary | Source |
|---|---|---|---|---|
| Alexander, W. H. | *The Junior High School: A Changing View* | 1963 | Alexander described the features of the junior high school that needed to be retained in middle schools. Four main areas were noted: transitional bridge between elementary and high school, individualized instruction, flexible curriculum and structures, and values education. | Position paper |
| Alexander, W. H. | *The Emergent Middle School* | 1968 | Defined the movement from the 6-3-3 organizational pattern of the junior high school to that of the 5-3-4 pattern with the middle school. Presented the human growth and development standpoint as rationale for the middle school. | Conceptual framework |
| Briggs, T. H. | *The Junior High School* | 1920 | Briggs was a noted leader and authority of the junior high school model and advocate of the 6-3-3 grade organizational structure for schools. Features of the junior high included strong transition program as well as guidance and teacher-advisory | Qualitative and quantitative study of schools and literature |
| Calhoun, F. S. | *Organization of the Middle Grades: A Summary of Research* | 1983 | Analysis of the implementation of the goals of junior high schools (1917-1930's) found that in reality the junior high school differed greatly from the ideal school described in the literature. | Summary of research and review of literature |
| Carnegie Council on Adolescent Development | *Turning Points: Preparing American Youth for the 21st Century* | 1989 | Task Force calls for specific recommendations for transforming middle grade schools. Concepts included organizational features of schools, curriculum, staffing, and community partnerships. The document validated much of the philosophical foundation of middle schools presented by Eichhorn, Alexander, and others. | National report on educational reform |
| David, R. J. | *Eichhorn: The Early Years in Middle Level Education* | 1995 | A collection of writings from Donald Eichhorn focusing on the middle level movement pertaining to the needs of the transescent learner and the organization of the middle school. | Conceptual framework |
| Eichhorn, D. H. | *The Middle School* | 1966 | A landmark publication in the middle school movement, containing the first full articulation of the middle school proposal. First to identify the term transescent to identify specific group of children and a stage of life. | Philosophical rationale and programmatic plans for middle schools |

| Jackson, A & Davis, G | *Turning Points 2000: Educating Adolescents in the 21st Century* | 2000 | A follow-up report of Turning Points (1989) by the Carnegie Corporation of New York designed to build on the efforts of the original work as well as provide an in-depth examination of middle grades education. Turning Points 2000 presented comprehensive implementation model for schools to guide efforts. | Review of research and other improvement efforts |
|---|---|---|---|---|
| Koos, L. V. | *The Junior High School* | 1927 | Study of junior high schools to examine emphasis placed upon specific functions of the junior high school in practice compared to the writings of educational leaders from the period | Quantitative study |
| Lounsbury, J. H. | *How the Junior High School Came To Be* | 1960 | Lounsbury presented multiple causes for the creation of the junior high school, of which included: pressure from college presidents for college preparation, design of an appropriate educational program for early adolescents, need for citizenship education, and other social forces of the 20th century. | Conceptual framework |
| Lounsbury, J. H. | *Perspectives on the Middle School Movement* | 1992 | Through his work in middle schools, Lounsbury presented a summary of the evolution of the junior high school, from advent in 1888 under the influence of Charles W. Eliot to the 1960's when the modern middle school movement began. The junior high and middle school movements are not presented as independent of each other, but rather viewing the middle school as a rebirth of the junior high school, advocating many of the core components while minimizing other features. | Conceptual framework |
| Milgram, J | *A Portrait of Diversity: The Middle Level Student* | 1992 | Supported work of Eichhorn in identifying the developmental characteristics of the middle school child. Four main areas defined: physical, social, emotional, and cognitive. | Meta analysis of research |
| National Middle School Association | *This We Believe* | 1982 | Position paper by the NMSA to set forth the rationale and definition of middle schools designed to advance efforts to provide the best possible education for America's youth | Position paper |

## C.    STANDARDS BASED CURRICULUM

1.    Introduction

The 1980's were witness to several studies that sought to evaluate the overall effectiveness of middle level education as proposed in the 1960's and 1970's.   Although organizational features of the middle school enjoyed an expanded level of success in reshaping schools, the curriculum of the middle school was left relatively unchanged (Beane, 1990; Jackson & Davis, 2000; Wheelock, 1992).   The educational standards movement of the 1980's beginning with the publication of *A Nation at Risk* (National Commission on Excellence in Education, 1983) responded to the political climate and the needs of schools as a step to improve student achievement and increase the recognition of the professional status of teachers through the creation of standards for many areas of curriculum.  Many professional associations such as the National Council of Teachers of English, International Reading Association, American Association for the Advancement of Science (AAAS), The National Council of Teachers of Mathematics (NCTM), and others called for sweeping reforms to curriculum and assessment practices within schools (Stowell & McDaniel, 1997).   Within this section of the literature review, focus is given to the efforts of The National Council of Teachers of Mathematics (NCTM), an international professional organization committed to excellence in mathematics teaching and learning for all students, toward the reform of mathematics curriculum and instruction through the introduction of standards.

2.    Mathematics Standards

NCTM released the *Curriculum and Evaluation Standards for School Mathematics* (1989) as a comprehensive effort to establish a framework to guide the reform and improvement

in the quality of school mathematics. The document, as well as the subsequent release of *The Professional Standards for Teaching Mathematics* (1991), the *Assessment Standards for School Mathematics* (1995), and the *Principles and Standards for School Mathematics* (2000) presented a vision of what mathematics curriculum should include in content and emphasis.

The mathematical standards presented by NCTM represented an effort to guide reform movements of schools as they would be able to measure revision efforts against the standards. Standards have been adopted by organizations to meet three main criteria:  to ensure quality, indicate goals or expectations, and promote change.  For NCTM, all three reasons were cited to have equal importance (NCTM, 1989).  Standards were created to protect teachers and students from inferior products and define what was important to teach.  The Commission on Standards for School Mathematics appointed by NCTM in 1986 was charged with completion of two critical tasks: develop a vision of mathematics literacy, and create a set of standards for mathematics instruction and learning.

A core belief that the NCTM standards were built upon was that all students should have a common foundation of challenging mathematics, regardless of whether the children would enter the workforce after high school or pursue further study in mathematics and science (NCTM, 2000).  All students were further defined to include specific groups of children:

1. Students who have been denied access in any way to educational opportunities as well as those who have not
2. Student who are African American, Hispanic, American Indian, and other minorities as well as those who are considered to be a part of the majority
3. Students who are female as well as those who are male
4. Students who have not been successful in school and in mathematics as well as those who have been successful (p. 4)

Central to the position was that all children needed to learn more and that they often learned differently.  In order to meet the needs of the children, the nature of mathematics and

41

mathematics instruction needed to be significantly changed. Heterogeneous groups with structures in place to provide appropriate support through differentiated instruction were sought over typical homogeneous groupings (NCTM, 2000). Tracking systems in mathematics in the middle school prohibited large numbers of students from experiencing skills and knowledge necessary for access to future opportunities (Beane, 1990; Wheelock, 1992). Systems that did not permit the equal opportunity and equal treatment of all children, excluding certain groups of children from challenging, comprehensive mathematics, could no longer be tolerated.

The call for reform of mathematics instruction suggested that new goals were needed. The shift of industrialized societies to that of an information dependent society called for transformation of curriculum and the aspect of mathematics in order for students to become productive citizens. The information age no longer permitted instruction in which mathematics was nothing more than a set of arbitrary rules and procedures to be memorized (Davis & Hersh, 1981). Schools were also cautioned to avoid the push to standardize tasks that avoided risks and experimentation in order to emphasize the basic skills computation and memorization of facts (Cohen & Ball, 1999). The curriculum standards created for each grade level expressed five general goals for all students: 1) learn to value mathematics, 2) become confident in their ability to do mathematics, 3) become mathematical problem solvers, 4) learn to communicate mathematically, and 5) learn to reason mathematically (NCTM, 1989). Inherent within each of the goals was the focus on authentic problem solving opportunities. Problem solving needed to be the focus of school mathematics through independent activities, small group, and whole class experiences in which students and teacher have opportunities to read, write, and discuss mathematics. Problems should be a mixture of open ended and formulated questions that offered challenges to students without frustration. The innovative ideas presented within the goals and

standards regarding curriculum and instruction were a radical departure from inherited ideas and practices of traditional mathematics instruction (Cohen, 1989).

The *Curriculum and Evaluation Standards* (NCTM, 1989) identified curriculum standards for students in groups; Kindergarten though fourth grade, fifth through eighth grade, and ninth through twelfth grade. Although each category had standards that were specific to that age group, the standards had been presented to have been a continuous program from kindergarten through twelfth grade. *Principles and Standards for School Mathematics* (NCTM, 2000) maintained the grade categories, however, revised the standards by combining some of the topics while drawing increased attention to others.

Mathematics curriculum for middle level students needed to be an exciting, useful, and creative area of study that could be appreciated and enjoyed by all students (NCTM, 1989, 2000). The middle school years typically were when students began to develop concepts of themselves as learners, influenced by areas of motivation, attitude, and interest. These concepts helped shape future mathematical endeavors resulting in certain employment opportunities later in life. The mathematics curriculum needed to engage students in the middle grades classroom in thoughtful activity tied to their emerging intellectual abilities as they move from concrete to more abstract reasoning (NCTM, 2000). The standards focused on expanding student knowledge in the areas of numbers, computation, estimation, measurement, geometry, statistics, probability, patterns and functions, and concepts of algebra. Inclusion of concepts of algebra and geometry were included purposefully to push the middle grades program for all students beyond the preoccupation with number concepts. Most math textbooks place the chapters of probability, geometry, algebra, and statistics at the end of the book, most likely to be skipped by teachers as the end of the year always arrived too quickly. The result was a curriculum that constantly

rehashed the same concepts students have seen year after year. The strands of algebra and geometry needed to be highly interconnected within the remainder of the curriculum producing a coherent curriculum that effectively organized and integrated important mathematical ideas that were worth the time and attention of students. Curricular coherence was identified as an integral part of the Third International Mathematics and Science Study (TIMSS). Researchers found that Japanese lessons were designed around one central idea that was then carefully developed and extended. American lessons tended to include several topics that were not closely related or well developed (National Center for Educational Statistics, 1999). A clearly defined curriculum that was articulated across grade levels permitted teachers to work with children to increasing levels of sophistication and depths rather than continued duplication and repetition of efforts resulting in a curriculum that was dull, irrelevant, and unchallenging.

3.      Instruction and Learning

Effective teaching of mathematics required teachers to possess a different level of knowledge about the curriculum and students than previously needed. The authoritarian mathematician that delivered concepts through lecture and rote memorization needed to be replaced by a teacher that possessed an understanding of what students know, what they need to learn, and how to best support them in learning the new material (NCTM, 2000). Effective teachers knew and understood the mathematics they were teaching and created curriculum goals connected with the teaching tasks that were appropriate for their grade level. Understanding of the big ideas within mathematics was needed in order to present topics with coherence and interconnectedness. In addition, it was the effective teacher that created a classroom environment that was challenging and supportive. The teachers actions encouraged students to take risks, think, question, and problem solve within various structures and organizations.

Within those contexts, NCTM (1991) presented six specific standards for the teaching of mathematics:

1. Worthwhile instructional tasks
2. The teacher's role in discourse
3. The student's role in discourse
4. Tools for enhancing discourse
5. The learning environment
6. The analysis of teaching and learning (p. 19)

Clearly, the standards for the teaching of mathematics have challenged teachers to concentrate instructional efforts within areas that may have been unchartered territory to previous generations of mathematics teachers.

Teaching mathematics in the middle school not only required different attention to the subject matter, but called for teacher education about the unique characteristics of middle school students.   Implementation of the grades five through eight standards needed to take into consideration the vast changes within the intellectual, physical, emotional, and social development and the emergence of abstract thought process (NCTM, 1989).  NCTM endorsed the work of Eichhorn and others (presented earlier) within the area of adolescent development by calling for teachers to be sensitive to the issues present for children in transition, such as responsiveness to peer influence, self consciousness, motivation, and development of value systems.   Learning environments that encouraged exploration of ideas, multiple solutions to problems and independent learning promoted an atmosphere of mutual respect.

The call for high quality teachers by NCTM was in concert with concerns expressed by reformers of middle schools.  Students needed teachers that were extremely knowledgeable of the materials and content, yet experts in the field of adolescent development.  The middle school occupied a unique position between the elementary certification that typically had little content training but strengths in interdisciplinary approaches, child development, and instructional

alternatives; and the secondary certification viewed as a content specialist but lacking in the professional development needed for middle school children. Special teacher preparation programs specifically designed for middle school teachers were in need of development to meet the demands of transescent education (Eichhorn, 1966; NCTM, 2000).

Teachers of mathematics needed to use the concept of student learning as the barometer to measure success of mathematics programs within schools. Focus on the student learning of mathematics with understanding was an essential ingredient for problem solving in an ever increasing technology based world (NCTM, 2000). Learning with understanding supported the goal of creating autonomous learners better able to take control of their own learning.

The classroom activities and experiences teachers designed for students greatly influenced the depth and breadth of student learning. Classroom activities needed to provide opportunities for children to work in individual, small group, and whole class organizations. Varied structures permitted students to build upon their own self confidence, work cooperatively with peers, promote independent learning, utilize higher level thinking, and interact with teachers in a structured environment (NCTM, 1989). The learning environment should engage children both physically and intellectually, taking advantage of the social characteristics of the middle school child.

The student's ability to learn mathematics was affected by the type of technologies available to the children and the extent to that they are utilized. The information explosion permitted electronic technologies, namely computers and calculators, to become mainstays in the mathematics classroom. The use of technology was not recommended to replace student's basic understanding of concepts, however, was to be used to further develop those understandings by allowing students to focus on decision making, reflection, reasoning, and problem solving

(NCTM, 2000). When used correctly, technologies enriched student learning of mathematics as well as provide options for adapting instruction for special needs children. Effective implementation of technology in the mathematics classroom depends upon the teacher. Although student-learning opportunities can be enhanced through the use of technologies, they should not be viewed as a type of silver bullet aimed at solving all of the mathematics program ills. Technology does not replace the teacher but will allow the teacher to work in new capacities when used well.

4.      Measures of Assessment

A final and important piece to the overall vision of mathematics reform and the standards movement was student assessment. The advent of high stakes standardized testing has caused student assessment to gain considerable attention at the local school, state, and national levels of education policy making. In its most basic form, assessment supported the learning of important mathematics and furnished useful information to both teachers and students about that learning (NCTM, 2000). Assessment was an integral part of instruction that informed and guided teachers to make instructional decisions. It conveyed to students what kinds of mathematical knowledge and performance were valued by the organization. When aligned with instructional goals, the feedback gained through assessment tasks assisted students in setting goals, assume responsibility for their learning, and becoming more independent learners.

Assessments in the form of high stakes testing used to determine levels of student proficiency have recently become a hotbed of controversy. If teachers were committed to teaching to the vision and goals consistent within *Principles and Standards* and the documents proceeding it, the demand of the local, state, or national test seem contradictory and challenging (NCTM, 2000). Teachers and students felt great pressure to perform well to avoid being

identified as a school in need of assistance (further defined in following section).  Pressures to succeed had become so great in some cases that teachers permitted students to cheat on the tests in order to produce higher scores.  Also undermining the integrity of the test was the idea of teaching to the test.  Teachers were placed in the position of deciding between what may be best to enhance their students' learning versus what is required to survive the perils of the upcoming test (NCTM, 2000).

Since the 1990's, reliance upon test scores from standardized tests had dramatically increased.  In many instances, an over reliance upon the tests developed that had been attributed to an educational environment with heavy emphasis on accountability and outcomes based education as well as the test's ability to detect individual achievement levels of children (Stowell & McDaniel, 1997).    Standardized tests had become a tool used only in a summative fashion rather than formative, assisting teachers to diagnose student difficulties and gaining insight into how to improve achievement levels.    Comparison studies conducted to assess popular standardized tests (such as the Comprehensive Test of Basic Skills and Stanford Achievement Test) against the *Curriculum and Evaluation Standards for School Mathematics* found that the tests did not assess the range of mathematics content, did not adequately assess a student's process, and continued to emphasize procedures over content (Stowell & McDaniel, 1997).  Increased demand for higher test scores pressed teachers toward preparing for the test at the expense of thinking, reasoning, and writing.  A critic of the standards movement, Alfie Kohn (cited in Reeves, 2000) presented one teacher's position:

> Not long ago, I am told, a widely respected middle school teacher in Wisconsin, famous for helping students design their own innovative learning projects, stood up at a community meeting and announced that he "used to be" a good teacher. These days, he explained, he just handout out textbooks and quizzed his students on what they had memorized.  The reason was very simple.  He and his colleagues were increasingly being held accountable for raising test scores.  The

kind of wide-ranging and enthusiastic exploration of ideas that once characterized his classroom could no longer survive when the emphasis was on preparing students to take a standardized examination. Because the purveyors of Tougher Standards had won, the students had lost. (p.6)

The multiple choice structure that dominated most of the test forms was unable to capture to notion of mathematical relationships and failed to stress problem solving skills to appropriate levels. Teachers struggled with the demands of the high stakes tests and increasing student achievement levels at the expense of the development of the entire child.

The implementation of alternative assessment practices was encouraged to gain a more comprehensive understanding of student learning and achievement. The use of formal and informal assessment strategies such as observations, anecdotal records, conferences, authentic assessment, and rubrics had been encouraged in addition to standardized test formats to gather information about student learning (Stowell & McDaniel, 1997). NCTM's position on assessment called for the collection of evidence from a variety of sources to best provide indication of student learning and achievement. Assessment options for teachers included open-ended questions, constructed response tasks, performance tasks, observations, conversations, journals, and portfolios in addition to the more traditional formal methods of paper and pencil tasks. In fact, over reliance on tests and quizzes provided a distorted view of student performance and did not provide teachers with the level of insight they needed to have about their students' understanding in order to make instructional decision (NCTM, 1991, 2000). Information from a variety of sources provided the best picture of what children knew and were able to do.

5.	Summary

In summary, the standards movement of the 1990's had a great impact on the structure of the American educational system.  Professional organizations such as the National Council of Teachers of Mathematics adopted sets of standards for curriculum that influenced state departments of education through adopted state standards and assessment practices promoted to increase student achievement.  Although standards contributed to the professionalism of teaching by increasing levels of accountability and promoting sound instructional pedagogy, educators were cautioned to avoid over reliance upon the standardized tests that accompanied the standards movement.  Student achievement needed to be monitored through the use of multiple formal and informal assessments that encouraged problem solving, thinking, reasoning, and writing.

6. Essential Sources – Mathematic Standards Movement

| Author | *Title* | Year | Summary | Source |
|---|---|---|---|---|
| National Center for Educational Statistics | *Trends in international mathematics and science study: TIMSS Report* | 1999 | Educational study intended to compare the educational approaches utilized in several countries throughout the world. Sought to explore trends in curriculum, instruction, and assessment. | Comparative study |
| National Council of Teachers of Mathematics | *Curriculum and Evaluation Standards for School Mathematics* | 1989 | The document was designed to establish a broad framework to guide reform efforts in the area of mathematics. Included in the vision is what curriculum should included in terms of content priority and emphasis. | Conceptual framework |
| National Council of Teachers of Mathematics | *Professional Standards for Teaching Mathematics* | 1991 | Standards were designed to support the Curriculum and Evaluation Standards and define a vision of what mathematics teaching should entail. The document defines what teachers need to know to teach toward new goals for mathematics education and how teaching should be evaluated for the purpose of improvement | Conceptual framework |
| National Council of Teachers of Mathematics | *Principles and Standards for School Mathematics* | 2000 | The document was intended to be a resource and guide for K-12 education based in the belief that all children should learn important mathematical concepts and processes with understanding. Presented within the document is an explicit vision of school mathematics as well core principles to guide the improvement of school programs. | Conceptual framework |
| Stowell, J. & McDaniel, J. | *The changing face of assessment* | 1997 | This paper presented the changes taking place in the area of student assessment. Outlines the concept of high stakes testing of students and several alternatives to standardized assessments in the middle school. | Position paper |

## D.     NO CHILD LEFT BEHIND ACT OF 2001

1.     Introduction

The standards movement that took hold of American schools in response to the launching of the Sputnik satellite resulted in a large scale effort to improve mathematics and science achievement across the nation. The federal government added considerable fuel to the public school reform movement in the form of millions of dollars dedicated to mathematics and science reform in an effort to close the perceived achievement and technology gap between the United States and the Soviet Union highlighted by the successful launch of the Soviet satellite. For the first time, the economic and political future of the nation was viewed as being heavily dependant on the quality of the American educational system.

The 1960's were witness to increased federal funding for public schools. The Elementary and Secondary Education Act (ESEA) of 1965 signed by President Johnson provided funding for instructional technology, mathematics and science instruction. The newly created Title One funding focused money toward literacy initiatives as part of Johnson's War on Poverty. The increased funding of education, however, had little effect on the technical core of classroom instruction which was viewed with little connection to the school and community in general (Meyer & Rowan, 1992; Rowan, 1990; Weick, 1976). Schools were comprised of loosely coupled systems that felt decisions related to the technical core of education such as what was to be taught, for how long, and to who were all left to the individual classroom teacher and not the responsibility of the overall organizations (Elmore, 2000). As a result, administrators did not really manage instruction within schools, but only the conditions around instruction. Existing systems of education were unable to account for the individual learning of children, specifically, why some children are able to master skills and content while others cannot.

Further support of the belief that America's future was tied to the academic development of its youth came in the form of the Nation at Risk report released in 1983. The report was created by the National Commission on Excellence in Education under the direction of Secretary of Education T. H. Bell as a result of the Secretary's concern about the widespread public perception that something is seriously remiss in our educational system (National Commission on Excellence in Education, 1983). The report was able to stir up the emotions and pride of Americans by stating:

> Our Nation is at risk. Our once unchallenged preeminence in commerce, industry, science, and technological innovation is being overtaken by competitors throughout the world. This report is concerned with only one of the many causes and dimensions of the problem, but it is the one that undergirds American prosperity, security, and civility. We report to the American people that while we can take justifiable pride in what our schools and colleges have historically accomplished and contributed to the United States and the well-being of its people, the educational foundations of our society are presently being eroded by a rising tide of mediocrity that threatens our very future as a Nation and a people. What was unimaginable a generation ago has begun to occur − others are matching and surpassing our educational attainments. (pp. 1)

The report outlined several recommendations to be implemented at the school with the underlying belief that all students can learn, regardless of their background or prior experiences. A solid high school education should be within the reach of all students to equip people with the skills required for new careers and for citizenship. The recommendations focused on five specific areas: Content, Standards and Expectations, Time, Teaching, and Leadership and Fiscal Support (National Commission on Excellence in Education, 1983). A common thread through each of the areas was the development of a curriculum based on core standards and understandings. Schools needed a strong curriculum focused on the Five New Basics of English, mathematics, science, social studies, and computer science. Efforts by groups such as NCTM to continue to define curricular standards were also encouraged. Standards and expectations were

entrenched in the notion of more rigorous and measurable standards as evidenced through routine administration of standardized tests of achievement. Structures that emphasized additional time in school and spent on homework were promoted. The level of teacher preparation needed to be improved as well as increasing the level of professionalism and respect deserving of the position. Within the area of leadership, the report called for the Federal Government to assume the primary responsibility to identify the national interest in education through the support of curriculum improvement, research on teaching, learning, and the management of schools. Federal funding and support needed to protect and promote the interest in education. Although the Nation at Risk report identified specific areas of concern and recommendations to be implemented, little change in schools was evident within the core practice of schools in the years following the report (Elmore, 2000).

2.      The No Child Left Behind Act of 2001

School reform took on a new face with the reauthorization of the ESEA of 1965 in the form of the No Child Left Behind (NCLB) Act of 2001. NCLB quickly changed the method and rate in which school reform would occur throughout the United States. Previous efforts of educational reform measured success by the inputs that were in place within systems. NCLB represented a dramatic shift from a traditional opportunity to learn program to one that placed the highest priority on accountability as measured by student levels of achievement (Kent). The law re-emphasized the federal government's active role in educational reform and the position that the education of all children was vital to the future of the nation. Consistent with the positions of NCTM, *Turning Points*, and *This We Believe*, NCLB advanced the notion that all children can achieve and identified effective strategies that were believed to result in the success of every student

3.    Accountability Measures

No Child Left Behind was enacted to accomplish what the preceding legislation could not do.  For nearly 40 years, the ESEA of 1965 act was unable to make dramatic improvements in the quality of education within the United States.  Despite nearly $200 billion in Federal spending dedicated toward public schools since 1965, the neediest children continued to be left behind.  Failure to implement ESEA's required changes resulted in token consequences as even the worst sanction of withheld school aid was rarely applied for fear that children would be impacted (Elmore & Fuhrman, 2001).  With No Child Left Behind, the basis for success or failure of school systems was rooted in the levels of student proficiency, with failure resulting specific and dramatic sanctions affecting schools and professional personnel.  The Federal government's role in public education was changed by asking America's schools to describe their success in terms of what each child accomplished (Pennsylvania Department of Education, 2003a).  The act contained the President's four basic education reform principles: stronger accountability for student achievement of academic standards, greater flexibility and local control, increased information and options for parents, and emphasis on teaching  methods that have been proven to work

The NCLB act outlined the critical steps that would be involved in an accountable education system (Pennsylvania Department of Education, 2003a):

1.  States create standards for what children should know and learn at all grade levels.  Mathematics and reading standards were to be created immediately with science standards to be in place by 2005-06.
2.  A state system of student assessment aligned to the standards to measure student progress toward those standards.
3.  Each state, school district, and school expected to make adequate yearly progress toward meeting state standards.  Progress would be measured for all students by disaggregating test data by subgroups.

55

4. Schools and district performance would be publicly reported in district and state report cards.
5. Continual failure of the school or district to meet adequate yearly progress goals toward the standards would result in sanctions against the school and district.

One of the most central elements of NCLB was the importance placed on testing of all students as a measure of cognitive achievement. States were expected to set their own unique set of standards for what every child should know in mathematics, reading, and science. Standards were viewed as a necessity that provided the road map to reform and guideposts for academic achievement (United States Department of Education, 2003e). The extensive work within the area of standards by groups such as NCTM was greatly influential in the formation of standards at the state level.

Each state was responsible for creating an accountability system to include yearly assessments of children and measurable goals aimed at achieving adequate yearly progress (AYP). The accountability system needed to gather specific, objective data through tests aligned with the standards and use that data to identify strengths and weaknesses of the system (United States Department of Education, 2003a). Beginning with the 2002-2003 school year, an assessment was to be designed for the elementary, middle, and high school levels. By the 2005-2006 school year assessments needed to be administered every year in grades 3-8 in reading and mathematics. The accountability system was to include measurable goals for student achievement to ensure that all students reach the minimum level of proficiency within the 12 years timeline set forth by NCLB. Requiring a 95% minimum participation rate within all subgroups also mandated student participation in the assessments. The Pennsylvania Accountability System of Measurable Goals is included in Table 2 (Pennsylvania Department of Education, 2003b). All students were expected to make adequate yearly progress toward those goals as indicated on the yearly reading and mathematics assessments (George, 2002).

Disaggregated data on student achievement for each subgroup within the school (i.e. economically disadvantaged, special education, English language learners, black, etc.) needed to be complied and used as a component of Adequate Yearly Progress of the entire school. Failure of any one subgroup to meet the AYP goals would result in sanctions being levied against the entire school.

**Table 2:  Pennsylvania Accountability System of Measurable Goals**

| Required Proficiency Percents | | |
|---|---|---|
| Year | Reading | Mathematics |
| 2002 | 45 | 35 |
| 2003 | 45 | 35 |
| 2004 | 45 | 35 |
| 2005 | 54 | 45 |
| 2006 | 54 | 45 |
| 2007 | 54 | 45 |
| 2008 | 63 | 56 |
| 2009 | 63 | 56 |
| 2010 | 63 | 56 |
| 2011 | 72 | 67 |
| 2012 | 81 | 78 |
| 2013 | 91 | 89 |
| 2014 | 100 | 100 |

Note:    From PA Accountability System-NCLB: PowerPoint Presentation: Pennsylvania
Department of Education. Available on the Web at www.pde.state.

4.    School Sanctions

The progressive system of sanctions for schools consistently not meeting AYP goals for all students made NCLB uniquely different from other attempts of educational reform, and extremely controversial.  Failure to reach yearly achievement targets for two consecutive years entered the schools into the sanctions system.  Schools were able to exit any level of the

sanctions upon completion of two consecutive years of demonstrating Adequate Yearly Progress

(United States Department of Education, 2002). The range of sanctions from school

improvement to corrective action is presented in Figure 6.

**Figure 6:  Sanctions for School - No Child Left Behind**

| Stage 1 | School Improvement |
|---|---|
| | *Year One*<br>Two consecutive years of not meeting AYP goals<br>● Develop and implement comprehensive school improvement action plan for two year period<br>● Receive assistance and technical assistance to address problems<br>● Initiate school choice for all students assigned to school to transfer to better public school<br><br>*Year Two*<br>Third consecutive year of not meeting AYP goals<br>● Continue all previous requirements<br>● Provide supplemental education services to disadvantaged students that remain in the school |
| **Stage 2** | **Corrective Action** |
| | *Fourth consecutive year of not meeting AYP goals*<br>● Continue all previous requirements<br>● Replace certain staff relevant to school failure<br>● Implement new curriculum and professional development<br>● Appoint external advisors to the school<br>● Reorganize some school structures |
| **Stage 3** | **Restructuring** |
| | *Fifth consecutive year of not meeting AYP goals*<br>● Continue all previous requirements<br>● Develop school plan for significant restructure of school such as state takeover, private management, charter school, or dramatic staff restructure |

Note:  Summarized from *The No Child Left Behind Act of 2001: Executive summary*. Washington, D. C.: United States Department of Education. Available on the Web at www.ed.gov.

For the first time in history, NCLB tied the funding of schools to the academic achievement of all children. Parents of children in failing schools received options not previously implemented at any level of public education. The results of the schools could not be hidden through an aggressive accountability reporting system. States, school districts, and schools were responsible for the creation of annual report cards to include student academic achievement disaggregated by subgroups, a comparison of students achieving at the basic, proficient, and advanced levels of academic performance, and whether the school had been identified as in need of improvement. Parents and the community received extensive information regarding individual child and overall school achievement levels to be used to make informed decisions about their community schools.

5.    Highly Qualified Teachers

An additional measure of accountability through NCLB challenged schools to utilize only well-prepared teachers, identified through the legislation as "highly qualified." A highly qualified teacher was defined as a teacher that knew what to teach, how to teach, and had command of the subject matter being taught (United States Department of Education, 2003b). Requirements to be considered highly qualified within an elementary setting included a bachelor's degree and demonstration of mastery in the curriculum areas of reading, writing, and math as indicated on rigorous state testing. Middle and high school teachers were required to also hold a bachelor's degree and demonstrate mastery in the subject area to be taught by passing a rigorous state test, or the completion of an academic major, degree or comparable coursework. In many circumstances, the new requirements resulted in many middle school teachers being forced to return to school for certification or demonstrate mastery in the curriculum area they taught. States were required to implement plans that would insure compliance with this measure

by 2005-06. Information regarding teacher qualifications was to be provided to parents as part of the annual report cards created by the state and schools.

6.      Research Based Programs

NCLB established a strong connection with the standards movement that first entered the educational scene in the 1980's. Just as groups such as NCTM adopted sets of standards to ensure quality, indicate goals, and promote change, a goal of NCLB was to ensure schools utilize high quality curriculum as the basis for student achievement. Since the premise that ineffective teaching practices and unproven education theories were contributing factors for lack of student achievement and teacher frustration, the legislation demanded that instructional practices be evidence-based methods with long-term records of success to teach curriculum and measure student progress (United States Department of Education, 2003c). The term, "scientifically based" was coined within the act to describe the high quality curriculum programs that would be supported with Federal funding as a way to influence the best ideas with proven results being introduced into the classroom (United States Department of Education, 2003a). Although national curriculum standards or specific program recommendations were not included in the act and prohibited by Federal law, areas of focus were identified to include reading instruction, 21st Century Learning Centers Program, and school library programs. Programs that were based on sound scientific methods of research were able to be replicated and generalized, having met the rigorous standards of peer review and convergent findings (United States Department of Education, 2003c). By matching sound educational programs with highly qualified teachers NCLB was positioned to make a positive impact on student achievement.

Measures within the design of the NCLB legislation promoted additional local school district control and flexibility in order to meet the accountability demands. Local schools were

given increased discretion over the use of Federal Title funds as well as those received through competitive grants. This allowed states and districts increased flexibility to promote teacher professional development and recruitment, develop curriculum, and improve programming (United States Department of Education, 2003d). In addition to increased flexibility, NCLB promoted the notion of reduced bureaucracy through improved local control. Time in school districts needed to be spent working on initiatives that improved student achievement. Principals and teachers would be able to spend quality time on initiatives that would impact student learning, not completing endless forms of paperwork. Students within low-income schools were to benefit from a higher percentage of Federal funding toward those schools. Since Federal funding does not constitute a large percentage of funding resources within a school district, the overall effects of the law would have only minimal impact on resources available to the school district.

7.    Implementation Findings

Since the introduction of No Child Left Behind in January 2002, state departments of education and school districts have scrambled to attempt to meet the demands of the legislation. Considerable research and opinions have been written in an effort to assess the act's effect on education. One of the most comprehensive studies on the topic, *From the Capital to the Classroom: Year Two of the No Child Left Behind Act* (2004) was completed by the Center on Education Policy. The information was based on a survey of 47 states and the District of Columbia, a nationally representative survey of 274 school districts, 33 case studies representing urban, rural, and suburban school district, and other research methods.

The report indicated several broad findings and observations from the study of NCLB implementation. One of the most evident findings noted that states and school districts around

the country had taken the legislation very seriously and were working hard to achieve the goals for student achievement. NCLB had great success in focusing the attention of a national, decentralized educational system on the same set of goals in a relatively short period of time. The majority of the states surveyed supported the goals of NCLB of having an accountability system based on content and performance standards that would positively affect student achievement. Many states and districts reported that they had been working on the goals of curriculum revision, standards, teaching strategies, and professional development in an effort to advance student achievement levels. NCLB greatly accelerated the rate of change and forced the achievement focus to the individual child rather than overall school success (Center on Education Policy, 2004). The use of disaggregated test data and requirements for highly qualified teachers were believed to have a positive impact on student achievement levels and lead to a decrease in the achievement gap among students of different backgrounds and cultures. The greatest progress was believed to occur between white and black students, and between low income and non low income students.

Although the CEP report found general support from states and schools for the central ideas around NCLB, implementation of the requirements of the legislation presented considerable challenges and concerns. The effects of the act were broader and deeper than expected (Center on Education Policy, 2004). For the first time, suburban schools had been identified as in need of improvement that previously would have been viewed as effective schools. Urban and very large districts that already had a relatively large share of affected had even more schools identified for improvement. NCLB's sanctions could lead to significant consequences for public education, as expressed by one respondent:

> Initially, NCLB will have a positive effect, partly because of the focus on
> education. However, over time, as the goals in NCLB increase, it is simply a

matter of time before all schools, districts and states are identified as "failing to make AYP"-resulting in improvement labels-some with horrific threats (termed sanctions) some feel were intended to discredit public education-(and if the rules of the system do not change, that very well may be the result) what a shame if that was intended-what a crisis to encouraging the best and brightest to become a teacher! (Center on Education Policy, 2004, p. 24)

Several school districts felt that the AYP indicators of graduation rate and test participation lead to unfair determinations of a school's performance. Schools that otherwise were performing well were targeted for improvement for missing the 95% mark by only a few students. Respondents to the survey cautioned schools not to necessarily equate higher test scores with improved levels of student learning.

One of the most significant challenges faced during the implementation of the provisions of NCLB concerned meeting adequate yearly progress goals for all student subgroups. The subgroups that created the most serious concerns were students with disabilities, English language learners, and low-income students. Narrowing the achievement gap between students in these subgroups and non-identified peers posed the most serious challenge as reported by state and local respondents to the survey (Center on Education Policy, 2004). Reaching 100% proficiency within the special education and ELL groups created even greater concern due to additional circumstances. As ELL students became proficient in English they were removed from the subgroup leaving behind those students with little or no knowledge of English, making it difficult for the subgroup to demonstrate progress as a whole. Special education students have been identified with significant cognitive or learning disabilities resulting in academic performance below grade level. Testing these subgroups with the same test all other students used revealed little useful information negatively impacted children. The Public Agenda (2003) survey referred to the testing requirements for special education and ELL students as "unreasonable and undoable." One respondent of the CEP report concluded that, "Holding

special education and ELL students to the same time frame for meeting state standards is unrealistic and can have a damaging effect on the self-esteem of these students." (Center on Education Policy, 2004, p. ix)

NCLB has received a great deal of criticism for its accountability systems that placed excessive emphasis on penalizing schools through sanctions and not committing enough attention to finding effective strategies to meet student needs. The short deadlines, emphasis on sanctions, and demand of revising state accountability frameworks to fit the Federal requirements prompted one respondent to describe the efforts of NCLB as "too much, too fast, and too punitive." (Center on Education Policy, 2004, p. ix). The short timelines of the act were further complicated by late or incomplete guidance and regulations from the U. S. Department of Education. Many of the provisions of NCLB were required immediately upon enactment in 2002 giving schools little time for transition from previous laws or time to develop procedures and policies to implement the new law.

Requirements for providing highly qualified teachers in every classroom have been implemented more slowly than other aspects of the legislation. States have struggled to define what highly qualified means for teachers currently in the classroom, especially in middle schools where a mixture of certifications previously existed. Although states have focused on other, more urgent deadlines in NCLB to date, as the 2005-06 deadline nears, accomplishing the law's goals for teacher qualifications will not be easy due to relatively low salaries of teachers compared to other professions and the special problems rural and urban districts face in attracting and retaining highly qualified staff.

States and school districts expressed concern over issues of available capacity to meet all of the law's requirements. Although some Federal funds were available for professional

development, school districts reported the need to allocate considerable local funds in the attempt to meet the NCLB guidelines. Insufficient funding sources restricted school district's ability to attain the goals. A national survey of public school administrators concluded that NCLB was viewed as an unfunded mandate that contributed to school's responsibilities, without contributing the funding needed to fulfill them (Public Agenda, 2003). In addition to funding, states and schools reported insufficient staff to carry out the duties required by the act (Center on Education Policy, 2004). Schools identified as in need of improvement have been forced to look toward state departments of education for technical assistance, while the majority of states reported insufficient staff to effectively do their part.

School districts that have been identified as in need of improvement reported the implementation of several strategies in an effort to improve student achievement. Actions taken by schools emphasized planning initiatives, improvement planning, new curriculum, extended school hours, school choice, and supplemental services. Schools have opted less for the punitive actions provided for in NCLB, however as schools continue to path of school sanctions, many of the more serious sanctions become mandatory. An interesting finding uncovered that while nearly one half of schools identified for improvement offered students the option of school choice in 2002-2003, only 2% of eligible children took advantage of the provision and moved to another school. Table 3 provides a summary of actions taken by school districts for Title I schools identified for improvement.

**Table 3:  District Actions Taken in 2002-2003 for Title I Schools**

| Actions Taken by Districts | % of Districts with Title I Schools Identified for Improvement Taking Action in 2002-2003 |
| --- | --- |
| Notifying parents of improvement status | 83% |
| Joint school improvement planning | 65% |
| Requiring the implementation of a new, research based curriculum/instructional program | 55% |
| Providing students with public school choice, with transportation provided | 47% |
| Extending the school day or year | 38% |
| Providing students with supplemental educational services (e.g. tutoring) from a state approved provider | 38% |
| Appointing an outside expert to advise the school | 34% |
| Restructuring the internal organization of the school | 13% |
| Reassigning or demoting the principal | 9% |
| Replacing school staff who are relevant to the failure to make AYP | 8% |
| Replacing all or most of the school staff | 6% |
| Decreasing management authority at the school level | 5% |
| State takeover | 4% |
| Reopening the school as a public charter school | 1% |
| Entering into a contract with a private management company to operate the school | 1% |
| Other | 15% |
| Note: Responses are listed in rank order.  Respondent could list more than one action | |

Note:    From the Center on Education Policy, December 2003, District Survey, Item 13 (Table 5)

8.    Summary

The introduction of the No Child Left Behind legislation in January 2002 greatly changed the rules for education reform in the United States.  Fueled by the failure of previous efforts of reform, NCLB concentrated on standards for curriculum and the establishment of systems of accountability to ensure the improvement of student achievement.  NCLB has been extremely

influential and successful in forcing schools to address the issues surrounding the improvement of student achievement and the elimination of achievement gaps between children. The five key provisions in the legislation of accountability, sanctions, highly qualified teachers, proven curriculum and instruction methods, and increased funding were all designed to assist school districts in meeting the aggressive demands of proficiency mandated by adequate yearly progress. Critics of the legislation contend that the requirements of the act were overly stringent, unworkable, and unrealistic and that the accountability demands were "too much, too fast, and too punitive." (Center on Education Policy, 2004). Effectiveness of schools and teachers was determined by a single measure of student proficiency in the form of state created standardized assessments. Fear of failing to meet the demands of adequate yearly progress on the assessments placed increased pressure on teachers and principals to teach the elements of the test instead of a challenging, exploratory curriculum. As more schools are identified in need of improvement due to the demand of larger gains in AYP measures in later years of the act, demands on state and local capacity and funding will greatly increase.

9.    Essential Sources – No Child Left Behind

| Author | Title | Year | Summary | Source |
| --- | --- | --- | --- | --- |
| Center on Education Policy | *From the Capital to the Classroom* | 2004 | Comprehensive review of implications and effects of the No Child Left Behind legislation within the states, school district, and schools. | Qualitative and quantitative research |
| National Commission on Excellence in Education | *Nation at Risk* | 1983 | Report released to the American people regarding the condition of public schools in the United States.  Outlined the need for reform within the schools | Position paper |
| Pennsylvania Department of Education | *PA Accountability System - NCLB: PowerPoint Presentation* | 2003 | Overview of system in place within Pennsylvania to meet the goals established by NCLB at the Federal level.  Outline of the specific measures of accountability for school districts and schools.  AYP yearly goals presented for mathematics and reading | Policy overview |
| Pennsylvania Department of Education | *Overview of No Child Left Behind* | 2003 | Introduction and overview of core components of NCLB | Policy overview |
| United States Department of Education | *The facts about...* | 2003 | Series of documents that address several of the key components of the NCLB act in detail and with clarity | Policy overview |

## E.    CONCLUSION

The interrelationship among the three influences on middle schools is the core of the literature review and the foundation upon which this study is built.    Middle level education has come to a critical point in its existence in which three factors greatly influence the philosophical base, function, and programming of the school.  These are represented in Figure 7.

**Figure 7:  Factors Influencing Middle Level Education**

```
                    ┌──────────────┐
                    │ Middle Level │
                    │  Philosophy  │
                    └──────┬───────┘
                           │
                           ▼
                    ┌──────────────┐
                    │ Middle School│
                    │    Program   │
                    └──────────────┘
                     ▲            ▲
        ┌────────────┘            └────────────┐
   ┌─────────────┐                      ┌──────────────┐
   │ No Child Left│                     │ Standards Based│
   │Behind Act of │                     │   Curriculum   │
   │    2001      │                     │                │
   └─────────────┘                      └──────────────┘
```
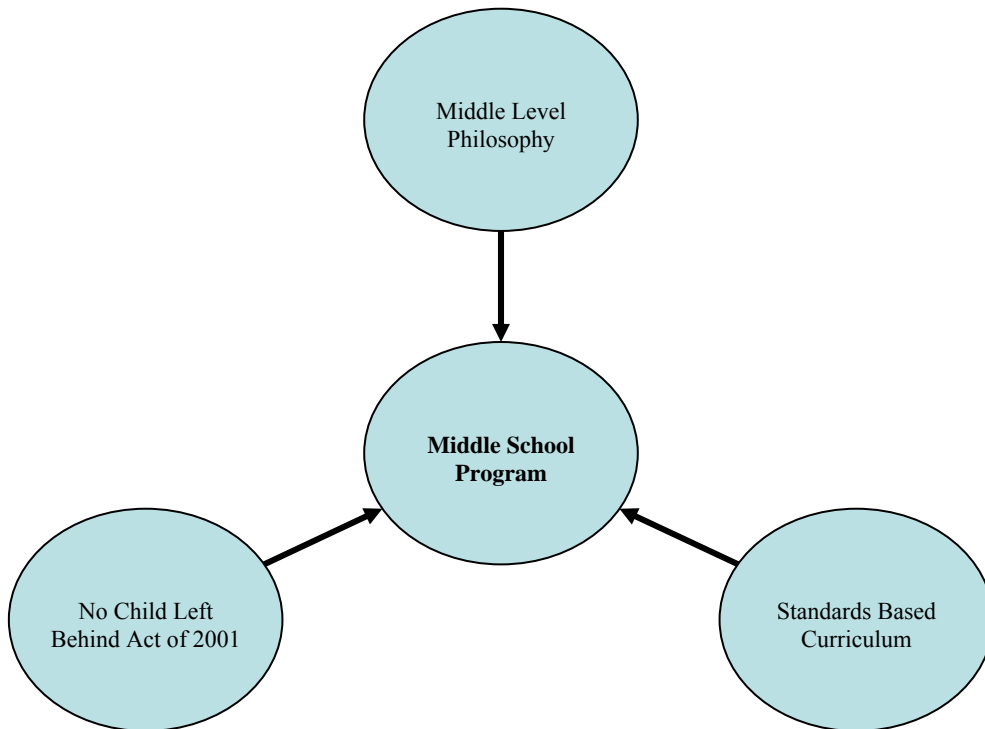
Competing for the middle school's attention are the middle level philosophy of a developmentally appropriate curriculum for transescents presented in the literature by Eichhorn and others, standards based curriculum and instruction reform led by institutions such as the

National Council of Teachers of Mathematics, and the accountability demands of the No Child Left Behind Act of 2001. The literature review has identified through the work of Eichhorn (1966), *Turning Points* (1989), and *This We Believe* (1982) the need for developmentally responsive middle schools designed to meet the needs of the transescent learner. Criteria have been established to recognize schools that have accomplished that goal. Middle level philosophy has provided great opportunity for organizational changes within the middle school. The history of the junior high school movement was presented with key literature pieces to emphasize the junior high school's inability to meet the diverse needs of the adolescent learner. Middle schools were designed with the specific purpose of addressing the physical, emotional, social, and intellectual needs of the preadolescent. Curriculum focus has been obtained through the work in the standards movement. Both influences have arrived on the scene of middle school education with elaborate structures but little power for implementation. The No Child Left Behind Act of 2001 arrived with an incredible amount of power in the form of accountability through school sanctions but little in the way of conceptual framework. This study will attempt to examine the impact of the standards movement and the No Child Left Behind legislation on middle schools originally designed to meet students' diverse developmental needs.

The focus of the study will be to examine the response of selected middle schools to the accountability demands of No Child Left Behind and the emphasis on intellectual achievement at the possible expense of the other areas of development. This study will be a multiple site study with a focus within the area of mathematics curriculum and instruction. The study will include qualitative data from principal and mathematics teachers interviews from schools designated as recipients of the Donald H. Eichhorn Outstanding Middle Level Award as well as an analysis of the nomination materials prepared by each school as part of the award process. Areas of

concentration will be the impact of NCLB on mathematics curriculum, programming, staffing, and assessment within the middle school. Implications and findings from the study will be used as a guidepost for future schools to wade through the demands of accountability while maintaining their middle level focus on developmental education. In the end, the goal of the study will be to determine if the impact of the accountability demands of the No Child Left Behind Act on the middle school will ultimately leave the middle level philosophy behind?

# CHAPTER TWO

## II. THE STUDY

### A.     INTRODUCTION

This study will explore the adaptability of middle schools to address the current accountability demands present within the reform movement in public education.  The reform of America's school systems has been a popular topic in the current educational literature.  Increased levels of student achievement have been demanded from schools and school districts.  Federal educational legislation produced mandates to determine areas of focus and what actions were required.  Schools districts could no longer design their systems around an opportunity to learn philosophy that dominated public schools.  Accountability for student learning was directly linked to sanctions at the school and school district level that acted as a blunt instrument to ensure compliance with the measures.  School leaders were not only accountable for their school's overall performance levels, but for the first time, needed to ensure that all subgroups within the school maintained appropriate levels of proficiency.   Although the legislation produced significant changes within school programs and structures, the true impact of these changes on the overall school program needed to be further explored.

Throughout history, educational systems have adapted to the environmental forces that have surrounded them.  Middle schools have come to a critical point in their existence in which

three factors; middle level philosophy, standards based curriculum, and the accountability demands of the No Child Left Behind Act of 2001 attempt to influence the philosophical base, function, and programming within the school.  The ability of the middle school to compete, compliment, or coexist with each of the forces will greatly shape the future of the middle school. Figure 10 illustrates the triangular relationship of these factors that forms the foundation for this study.

## B.    PURPOSE OF THE STUDY

The purpose of this study is to describe the dilemma facing selected middle schools as they attempt to meet the current accountability demands for increased student achievement within mathematics while maintaining their focus toward a middle school program that is responsive to the developmental needs of adolescents.

## C.    RESEARCH OBJECTIVES

1.    Describe the influence of middle school philosophy, standards, and No Child Left Behind on curriculum, instruction, and assessment within the middle school.

2.    Describe the impact of the accountability demands for increased student achievement on teacher professional development within the middle school.

3.    Analyze the effect of the "highly qualified teacher" requirement within NCLB on the middle school teaching staff.

## D.    PROCEDURES

1.    Identify Schools Eligible to Participate in the Study.

The selection of schools for this study was based on middle schools that ascribe to the original ten essential elements of a true middle school as identified by the National Middle School Association (NMSA) as the conceptual framework of the ideal middle level program. The NMSA (1982) identified the ten essential elements as 1) Educators knowledgeable about and committed to young adolescents; 2) A balanced curriculum based on the needs of young adolescents; 3) A range of organizational arrangements; 4) Varied instructional strategies; 5) A full exploratory program; 6) Comprehensive advising and counseling; 7) Continuous progress for students; 8) Evaluation procedures compatible with the nature of young adolescents; 9) Cooperative planning; and 10) Positive school climate.  Before an accurate description of the extent of program adaptation at the middle school can be completed, it is critical to the study to determine the extent the middle level program is in reality a true middle level program and not a traditional junior high program.  Use of the essential elements provides the researcher a common reference point to match the middle school program to elements of the model program.

The Pennsylvania Middle School Association (PMSA) has developed an award to recognize middle schools for their dedication to the ten essential elements of a true middle school.  The Donald H. Eichhorn Award for Outstanding Middle Level Program recognizes one middle school annually in Pennsylvania dedicated to providing a developmentally responsive program.  The award process requires interested schools to submit a portfolio containing evidence of each of the areas identified as essential elements.  An award committee from PMSA

reviews each of the portfolios received and determines finalists that will receive a site visitation from members of the award committee. The recipient of the award is determined from both the portfolio document and information gathered from the site visitation. The award is announced at the annual state convention.

Schools selected for this study have been the recipient of the Donald H. Eichhorn Award. The schools have consistently demonstrated their commitment to the middle level philosophy. The research will consist of a multi-site, case study attempting to describe the degree of adaptation of the middle level program due to current accountability demands for increased student achievement. Three middle school sites within the western Pennsylvania area have been selected that meet the criteria described earlier. School A is a suburban middle school consisting of grades 6-8 with an enrollment of 1,007 students. School B is a suburban middle school consisting of grades 6-8 with an enrollment of 745 students. School C is a suburban middle school consisting of grades 6-8 with an enrollment of 975 students.

2.      Analyze Eichhorn Award Portfolio Materials

The portfolios created by each of the middle schools during the nomination process will be reviewed to supplement the building level interviews with teachers and the principal. The goal of this activity would be to use the information gathered within the portfolio to determine program strengths and accomplishments within each of the schools.

3.      Conduct Interviews with the Building Principals of the Selected Schools

Interviews will be conducted with the building principals to describe their perception of the impact of accountability for increased levels of student achievement on the middle level program within the school. The interview would be constructed to focus on the topics of

curriculum, instruction, assessment, staffing, and professional development activities. The goal of the meeting would be to collect an in-depth description of how the actions and focus of the principal have been impacted by the increased emphasis of accountability for increased levels of student achievement.

4.      Conduct Interviews with Mathematics Teachers of the Selected Schools

Interviews will be conducted with mathematics teachers at the 6th, 7th, and 8th grade levels to describe their perception of the impact of accountability for increased levels of student achievement. The interview would be constructed to focus on the areas of curriculum, instruction, assessment, staffing, and professional development activities. The goal of the meeting would be to collect an in-depth description of how the instructional priorities of teachers have been impacted by the increased emphasis of accountability for increased levels of student achievement.

5.      Gather Data from Standardized Assessments to Supplement the Interview Questions

Results from standardized assessments (Pennsylvania School System of Assessment) will be analyzed for each school to provide information in regard to student performance. Disaggregated data for each subgroup within the building will be analyzed to describe areas of program strength and concern. The data is intended to be used as a supplement to the questions of the interview for the school principals and teachers.

6.      Synthesize Data from the Interviews and the Standardized Assessments

All collected data will be used to address the research objectives of the study. The findings from each of the schools would be used to construct simultaneous, independent accounts of the middle schools' degree of adaptation within the areas of curriculum, instruction,

assessment, staffing, and professional development in response to the accountability demands for

increased levels of student achievement.  Figure 8 illustrates the design of the study.

**Figure 8:  Synthesis of Data from Interviews and Print Materials**

| School A | School B | School C |
|---|---|---|
| Data from review of Eichhorn portfolio materials | Data from review of Eichhorn portfolio materials | Data from review of Eichhorn portfolio materials |
| Data from review of assessment materials | Data from review of assessment materials | Data from review of assessment materials |
| Data from teacher and principal interviews | Data from teacher and principal interviews | Data from teacher and principal interviews |

Analyze collective data to create description of degree of adaptation within selected middle schools to the accountability demands for increased levels of student achievement

### E.      LIMITATIONS

The researcher acknowledges that several factors affect the ability to generalize the

results of the findings, including:

1.      Physical location of the schools.  This study involves the interviews of the building

principal and teachers of mathematics within each of the schools.  Therefore, this study is limited

to schools in the Western Region of the Pennsylvania Middle School Association (PMSA).

2.      The schools selected to participate in the study were required to meet the criteria for

involvement in the study.  Only schools that have received the PMSA's Donald Eichhorn Award

for Outstanding Middle Level Program would be included in the study.

3.      The curriculum area of mathematics.  Standards have been created for several curriculum

areas, however, since the PSSA testing addresses mathematics as one of the areas to measure

student levels of proficiency the area of mathematics has been chosen as the focus of study.

## F.      DEFINITION OF TERMS

For the purpose of this study, the following definitions will be used to define each of the

identified terms:

1.      Achievement gap refers to the difference in the levels of proficiency on standardized

        assessments between students in minority subgroups and those that are not identified as

        minority.

2.      Adequate yearly progress is the amount of progress required each year for each states'

        accountability system to ensure that all students reach proficiency in math and reading by

        2014 as required by the No Child Left Behind Act of 2001 (United States Department of

        Education, 2002).

3.      Advisory program is a program that emphasizes the social and emotional development of

        every young adolescent in the middle level school.

4.      Alternative assessments consist of methods to assess student performance in a more

        comprehensive manner than once-a-year standardized assessments.  Alternative

assessments include formal and informal strategies such as observation, conference, and rubrics (Stowell & McDaniel, 1997).

5. <u>Analytical curriculum</u> refers to one of the two distinct curriculum areas that comprise the middle school. The analytical curriculum consists of the content subjects of language arts, mathematics, science, and social studies (Eichhorn, 1966).

6. <u>Asynchronicity</u> is the ungainly movement or awkwardness produced from the accelerated growth rates of some body parts in comparison to others that occur during the period of transescence. (Lounsbury & Clark, 1990).

7. <u>Behavioral autonomy</u> refers to the ability to act independently with little supervision that first emerges during the middle school years (Milgram, 1992 p. 23).

8. <u>Cognitive development</u> refers to Piaget's sequential stages of intellectual development of preoperations, concrete operations, and formal operations (Steer, 1980, p. 48-50).

9. <u>Cognitive grouping</u>, also referred to as tracking, refers to the process of sorting children into rigid, homogeneous groups based on student ability or previous achievement (Wheelock, 1992).

10. <u>Combinatorial analysis</u> refers to one of the advanced processing skills of the formal operations stage of Piaget's cognitive development model in which children are able to isolate all possible variables in a situation and view them in the fullest range of combinations (Eichhorn, 1966).

11. <u>Developmentally appropriate curriculum</u> refers to a curriculum designed to address the specific needs of middle level students in the areas of diversity, self-exploration, self-definition, meaningful participation, positive social interaction, physical activity, competence, and limits and structure.

12. <u>Disaggregated student data</u> refers to the process of analyzing student assessment data by each subgroup within the school rather than from the collective whole.

13. <u>Emotional autonomy</u> refers to the middle level child's emerging ability to respond appropriately to criticism and rejection while drawing support and encouragement from within (Milgram, 1992, p. 23).

14. <u>Exploratory program</u> is offerings in the middle school that encourage and permit students to explore new areas of interest, both as specific courses and as methodology within courses.

15. <u>Flexible curriculum</u> describes the ability to design courses, daily classes, and activities in a sequence that allows for variation from day to day, as opposed to a fixed schedule that is the same every day that permits and assists children to progress at different rates and to different depths.

16. <u>Flexible grouping</u> refers to the process advocated by middle school planners as an alternative to tracking, in which students are grouped into heterogeneous groups of mixed cognitive ability or other traits evidenced in the middle school through the use of interdisciplinary teaming (Spear, 1992a; Wheelock, 1992).

17. <u>High stakes testing</u> refers to the system of standardized assessments used by a school district to determine levels of student proficiency. Curriculum and instruction decisions are often shaped by the results of the tests.

18. <u>Highly qualified teachers</u> refers to a requirement within the No Child Left Behind Act of 2001 that mandates that teachers must possess specific certification in the curriculum area for which they provide instruction (George, 2002).

19. Interdisciplinary refers to the curriculum approach that examines a central theme, issue, or problem through the application of methodology and language from more than one discipline.

20. Junior high school refers to the grade 7-9 school included in the restructure of schools first introduced in the early 1900's that established a 6-3-3 grade structure in which the upper elementary grades were pushed to the secondary level.

21. Loosely coupled refers to the belief that the "technical core of education…resides in individual classrooms, not in the organizations that surround them" (Elmore, 2000, p. 5-6).

22. Middle school is "an educational response to the needs and characteristics of youngsters during early adolescence, and, as such, deals with the full range of intellectual and developmental needs" (NMSA, 1992, p. 14).

23. Opportunity to learn refers to the position that schools monitored the success of educational programs by focusing on the opportunities available to children rather than actual accountability measures for what children were learning (Kent).

24. Peer tutoring is a flexible grouping strategy in which students tutor each other to provide academic assistance (Spear, 1992a).

25. Physical-cultural curriculum refers to one of the two distinct curriculum areas that comprise the middle school. The physical-cultural curriculum consists of the four distinct content areas of fine arts, physical education, practical arts, and cultural studies (Eichhorn, 1966).

26. Proficiency level refers to the rate of acceptable student achievement on standardized assessments. The current system of accountability in Pennsylvania outlines the areas of

below basic, basic, proficient, and advanced, with the levels of proficient and advanced

being acceptable (Pennsylvania Department of Education, 2003b).

27. Pseudo stupidity refers to the period of intellectual regression

28. Sanctions are the consequences outlined in the No Child Left Behind Act of 2001 for

schools and school districts that do not meet the minimum levels of student proficiency

(United States Department of Education, 2002).

29. Scientifically based program refers to curriculum programs that have proven educational

results as evidenced through research (United States Department of Education, 2003a)

30. Selected middle schools refers to middle schools chosen for this study that have been

identified as incorporating the essential elements of middle level schools from the

National Middle School Association into their school's program.

31. Standardized assessments refer to the battery of tests used by the school district currently

within the content areas of mathematics and reading to determine student levels of

proficiency.

32. Standards are a set of basic knowledge criteria used to present a vision for educators of

what a curriculum area should include in content and emphasis (NCTM, 2000).

33. Subgroup refers to the minority groups within the school for the purpose of analysis of

the disaggregated data received from standardized assessments.  Subgroups may include

economically disadvantaged, special education, racial and ethnic minorities, and English

language learners.

34. Teaming refers to the process of creating smaller schools within the school through a

group of teachers providing instruction to a group of students.

35.  Technical core of classroom instruction refers to the "detailed decisions about what should be taught at any given time, how it should be taught, what students should be expected to learn at any given time, how they should be grouped within classrooms for purposes of instruction, what they should be required to do to demonstrate there knowledge, and perhaps most importantly, how their learning should be evaluated" (Elmore, 2000, p.5).

36.  Transescence is the "stage of development which begins prior to the onset of puberty and extends through the early stages of adolescence.  Since puberty does not occur for all precisely at the same chronological age in human development, the transescent designation is based upon the many physical, social, emotional, and intellectual changes that appear prior to the puberty cycle to the time in which the body gains a practical degree of stabilization over these complex changes" (Eichhorn, 1966, p.3).

## G.     PROPOSED STRUCTURE OF THE RESEARCH REPORT

Chapter I      Review of the Literature

Chapter II     The Study

Chapter III    Description of Findings from School A

Chapter IV    Description of Findings from School B

Chapter V     Description of Findings from School C

Chapter VI    Summary, Conclusions, and Implications for Policy and Practice

**CHAPTER THREE**

**III. DESCRIPTION OF FINDINGS FROM SCHOOL A**

**A.      DEMOGRAPHIC INFORMATION**

School A was a suburban middle school in the South Hills area of Pittsburgh.    Student enrollment was 1007 students in grades 6, 7 and 8 for the 2004-2005 school year.    The communities within the school district were mainly middle class, however, two large, low income apartment complexes existed within the boundaries.    Within the past few years the community and school district underwent significant demographic changes related to the apartment complexes.    One of the apartment areas consisted of a large immigrant and refugee population, recently settled in the Pittsburgh area by Catholic Charities.    This resulted in over 140 children being enrolled in the district as English Language Learners.    The second apartment complex consisted of multiple units that were rent subsidized resulting in the relocation of several families from the urban areas of the City of Pittsburgh.    Both situations led to an increase within School A of minorities from less than 3% in 1995 to over 12% in 2004.    Black children comprised the largest minority subgroup at 9.5%.    The number of children from economically disadvantaged homes also increased from 12% in 1995 to 22% in 2004.

School A was built in the early 1970's as a junior high school with an open classroom floor plan.    At various times within the first 20 years of existence, School A contained multiple

combinations of 6th, 7th, and 8th grade.  In 1993, the school district undertook considerable effort to convert the school from a junior high school to a modern middle school.  A renovation project included the addition of a new wing consisting of 26 classrooms to house the 6th grade and enclose the open classroom design.  A new principal was hired with the goal of incorporating the full middle school concept within the school.  The existing elementary schools were restructured with the ensuing transition of the 6th grade to the middle school.

Since the incorporation of the middle school movement in 1993, the teaching staff of School A has also encountered a significant amount of change.  The teaching staff consisted of 78 full time professional employees.  Of the entire staff, 62% of the teachers have been hired since the transition to the middle school and only 18% of the staff had more than 15 years of experience.  The overall staff experience is included in Table 4.

**Table 4:  Years of Experience - School A Teaching Staff**

| Years of Experience | Number of Staff Members | Percent of Staff |
|---|---|---|
| 30-36 Years | 11 | 14% |
| 25-29 Years | 3 | 4% |
| 20-24 Years | 0 | 0% |
| 15-19 Years | 0 | 0% |
| 10-14 Years | 15 | 19% |
| 5-9 Years | 20 | 26% |
| 0-4 Years | 29 | 37% |
| Total | 78 | 100% |

**B.     REVIEW OF PSSA ASSESSMENT INFORMATION**

A review of School A's data generated from the Pennsylvania System of School Assessment (PSSA) mathematics assessment for the 8th grade from 2001-2004 revealed increases

within the overall performance of the school as well as within the larger subgroups of students within the school.   Overall student proficiency in mathematics increased from 51% in the 2000-2001 school year to 78% for the 2003-2004 school year.  Significant gains were made within the advanced level of performance while the percentage of students at the below basic level steadily declined each year.   The overall performance of School A from 2001-2004 is summarized in Figure 9.

**Figure 9:  Overall Performance School A - PSSA Mathematics 8th Grade**
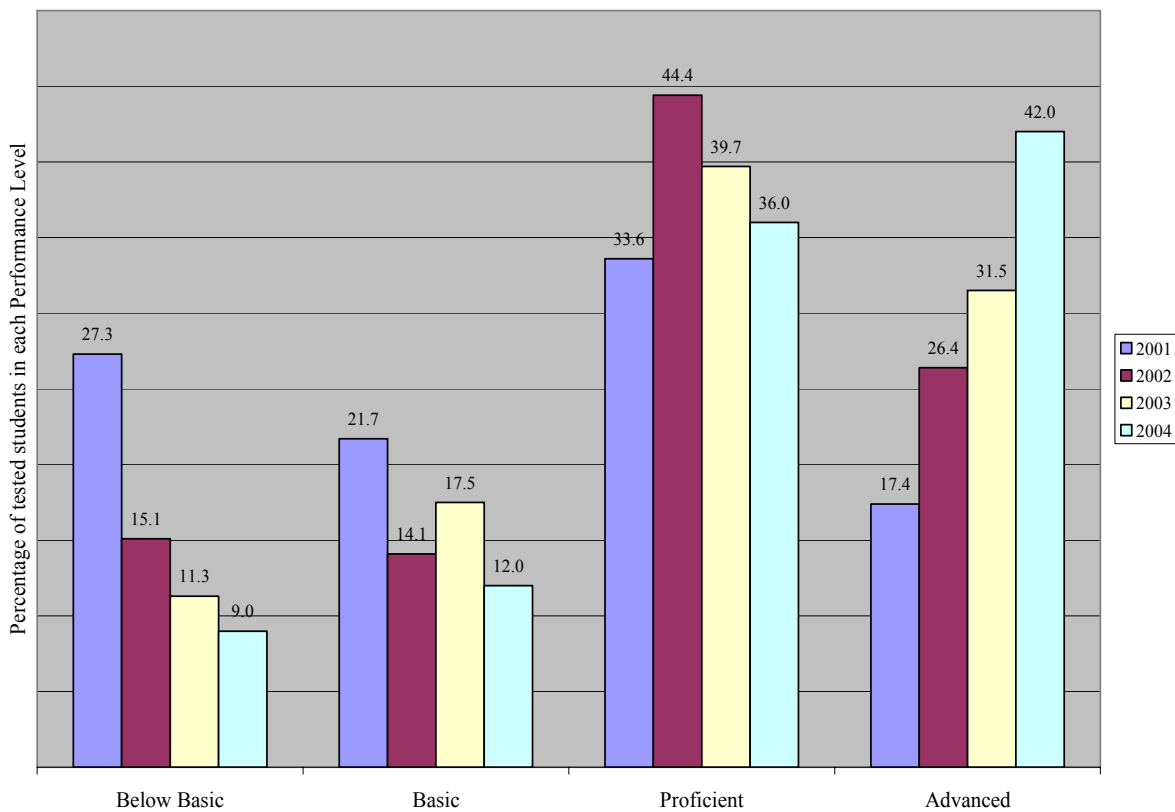


School A's PSSA results prior to the release of the No Child Left Behind Act in January of 2002 indicated large percentages of children within the basic and below basic categories. Beginning with the 2002 PSSA assessment results, steady declines of the overall percent of

students within the below basic and basic categories occurred with the exception of 2003. The most dramatic reduction existed in the below basic category.

While the overall mathematics performance of 8th grade students at School A indicated proficiency levels well above the mandated 35% for the time period of 2001-2004, the school has several subgroups that contain significant numbers of students that demonstrated lower levels of proficiency or did not meet the minimum requirements. A summary of the results are included in Table 5.

**Table 5: School A - Subgroup Mathematics Performance Levels**

| Subgroup | 2001 | | 2002 | | 2003 | | 2004 | |
|---|---|---|---|---|---|---|---|---|
| | # students | % proficient | # students | % proficient | # students | % proficient | # students | % proficient |
| **Students with IEP** | 38 | 18.5% | 41 | 19.5% | 43 | 27.9% | 32 | 24.0% |
| **Economically Disadvantaged** | 42 | 42.9% | 64 | 51.5% | 62 | 50.0% | 69 | 60.0% |
| **Black** | 16 | 18.8% | 15 | 40.0% | 25 | 28.0% | 18 | 50.0% |

An analysis of the assessment data from School A's subgroups revealed during each assessment year, at least one subgroup consisted of at least 40 students, making it statistically relevant to be counted toward the school Adequate Yearly Progress status. The subgroup of economically disadvantaged increased the number of students each year posting a net gain of 27 students. Although the percentage of proficient students within the economically disadvantaged subgroup has exceeded the minimum rate of 35% for each assessment year, it has remained much lower than the overall proficiency of the total assessed group. The subgroup of students with IEP's also indicated numbers of students that were statistically significant in the computation of School A's AYP status in 2002 and 2003. The proficiency rate of those students

was much lower than the overall performance of the school, not meeting the 35% proficiency target in any of the school years being examined. The final subgroup included in this analysis was that of black students. Although the overall number of students did not come close to the required minimum of 40 students to be considered as a subgroup for AYP purposes, it was the largest of the remaining subgroups present at School A. While the rate of proficiency exceeded the minimum of 35% in 2002 and 2004, the proficiency rate of the black children was much lower than that of the overall 8th grade at the school.


## C.    REVIEW OF EICHHORN AWARD PORTFOLIO MATERIALS

School A was awarded the Donald Eichhorn Award for Outstanding Middle School Program in March 2003. The application process began in November 2002, a little over 10 years after the implementation of the current middle school practices and programs within the school. The application materials were assembled into two portfolios organized to follow the ten essential elements of a true middle school as outlined by the National Middle School Association (NMSA, 1982). A review of the portfolio materials revealed the following programming features of School A:

1.    Educators Knowledgeable About and Committed to Young Adolescents

      a.    Clear mission statement and philosophy focused on the emotional, social, intellectual, and developmental needs of children

      b.    Yearly theme and goals that provide focus on the mission statement

      c.    Evidence from several programs that focused on student diversity and needs

d. Testimonials from individual staff members that demonstrated the special group of teachers that was knowledgeable of human growth and development

e. Documentation of the professional organizations staff members belonged to and the multitude of presentations delivered by staff members at various conferences around the region, state, and nation.

2. A Balanced Curriculum Based on the Needs of Young Adolescents

a. Comprehensive curriculum that supported the development of well-rounded young people

b. Interdisciplinary units at each grade level that focused on the needs, interests, and capabilities of young adolescents

c. Opportunities for students to showcase their talents through laboratories, hands-on activities, and projects

d. Evidence of instructional standards in place to guide instruction, curriculum, and assessment

3. A Range of Organizational Arrangements are Incorporated into the Schedule

a. Interdisciplinary teaming was utilized in all grade levels so that teachers share the same children and utilize a common planning time

b. Flexible master schedule was created to include multiple blocks of time for teams to manipulate to facilitate student learning

c. Teacher collaboration was evidenced across the teams, grade levels and departments

d.    The curriculum was predominantly organized to support heterogeneous grouping of children to present enrichment activities to all children, regardless of ability levels

4.    Varied Instructional Strategies

a.    Flexible grouping strategies were evident in several interdisciplinary projects

b.    Cooperative learning opportunities and hands-on activities were integrated into all academic areas

c.    Technology was utilized as an effective instructional strategy

5.    A Full Exploratory Program

a.    An academic exploratory program consisted of a foreign language survey course in eighth grade

b.    Vocational exploratory opportunities were available through the unified arts program in all grade levels

c.    Several clubs and activities, interscholastic sports for boys and girls, intramurals, and an excursion program encompassed the recreational aspect of the exploratory program

6.    Comprehensive Advising and Counseling

a.    A daily homebase advisory program focused on the specific needs of each grade level

b.    Two full time guidance counselors and one full time social worker trained to address the unique needs of middle school students

c.    An Intervention Planning Team (IPT) that meets weekly to identify at-risk children and plan intervention strategies

d. Several programs that recognize and reinforce high academic achieving children

e. Transition programming to assist move in from 5th grade and to the high school

7. Continuous Progress for Students

 a. Communication of student evaluation through the use of progress reports, report cards and student-led conferences

 b. The use of multiple teaching strategies to address differences in learning styles

 c. Acceleration and remedial programs (gifted, Title I, Academic Support) to support student academic needs

 d. Goal setting process as part of Student-Led Conferences that allowed the child to identify goals to be accomplished within each subject area

8. Evaluation Procedures Compatible with the Nature of Young Adolescents

 a. Assessment tools included a wide variety of measurements which accurately reflected student learning and ensured team consistency

 b. Integration of standardized assessments based on academic standards

 c. Extensive use of rubrics and portfolios

9. Cooperative Planning

 a. Interdisciplinary Unit planning and implementation at each grade level

 b. Daily common planning time utilized for team meetings and parent conferences

 c. Grade level activities (Veteran's Day Program, Challenge by Choice) used to foster team and grade level identity

10.     Positive School Climate

   a.     Programs used to recognize students for positive contributions to the school and

          community (i.e. BUG, Caught Being Kind, Student of the Week, Academic

          Excellence)

   b.     Clearly communicated and enforced student management plan and school district

          policies

   c.     New student orientation program and recognition

   d.     Anti-bullying workshops conducted by social worker and vice-principals

The application materials also included several letters of recommendation from other

local middle school principals and university professors that were familiar with the work of the

school.  The principal of School A was extremely proud of the work teachers contributed to the

organization of the portfolios.  He also commented on the value of the application process,

stating that receiving the award was a great honor; however, completing the process of compiling

the materials was an insightful and rewarding exercise.  The portfolio binders as well as the

award were prominently displayed in the office area.

### D.     PRINCIPAL AND TEACHER INTERVIEW DATA

During the principal and teacher interview sessions at School A, participants were asked

to provide commentary regarding the three focus areas of the study: middle level philosophy,

academic standards education, and the No Child Left Behind Act of 2001, and the impact of each

area on the structure and programs present within the school.  One mathematics teacher was

chosen from each grade level in School A (grades 6, 7, 8).  As an additional requirement, the

teachers were required to have at least 4 years experience so that comparisons could be made between educational practices evident within public schools both prior to the passage of NCLB and since its adoption.

The principal of School A has worked in the school a total of nine years.  He was the vice-principal for six years (1996-2002) and has been the principal for the last three years (2002-present).  The Donald Eichhorn application was prepared in the fall of 2002 under his guidance.  Other work experiences have included teaching at the elementary level for six years.  Professional certifications included elementary education, elementary principal ship, and letter of eligibility.

Teacher #1A was a veteran of 34 years experience, all of which were within School A.  He has worked within the school from the time it opened, through two stages of being a junior high school and two episodes of being named a middle school.   Since the current middle school structure had been in place, he has served as an $8^{th}$ grade math teacher and team leader for the core interdisciplinary team.  His certification was secondary mathematics.

Teacher #2A had 22 years of experience as a mathematics teacher within an approved private school, high school and middle school setting.  She came to School A during the period of transition from junior high school to middle school in 1993.  She taught seventh grade mathematics and served as the team leader for the interdisciplinary team.  Her certification was also secondary mathematics.

Teacher #3A had 11 years of experience combined within the elementary, special education (gifted), and middle school settings.  She came to School A shortly after the transition to the middle school.  She taught a combination of $6^{th}$ grade mathematics and language arts.  She was also the team leader for her team.  Certification was elementary education.

1.	Influence of Middle School Philosophy

a.	Middle Level Concept - The introduction of the middle school concept at School A has had extensive impact on the philosophy, structure and organization within the school. Since the introduction of the middle level philosophy in 1993, there were few traces of the typical junior high school model remaining at School A. When asked to describe the concept of middle level education, the principal responded:

> I think the most basic function of the middle school is the focus on the education of the entire child. Although intellectual development is critical, teachers and schools must be able to address the social, emotional, and developmental needs of children at this age level. Good middle schools have put the right people and programs in place to address all of these needs. A child will not be able to realize their greatest academic potential unless all the other elements of their life are at relative ease. Schools are being increasingly called upon to incorporate concepts that were previously addressed through the family or church. (Principal, A)

The teachers have also embraced the middle level philosophy within School A. A deep understanding of the concept of middle schools exists. Teachers commented on their specific roles with middle school children.

> The middle school is a unique area. There is an emphasis on the educational background and emotional background. There is no other age group like what the grades 6-8 experience. They will never be the same. Teachers have to focus life skills and on education. You can't just focus on one. The teacher must do both. (Teacher #1A)

> (The middle school) has different components. You have the academic component and then you have the relationship component. Teachers have to establish relationships to help children make good decisions, develop morals. Middle school is a difficult job because of the relationships. Not everyone is comfortable building that relationship with kids. At the middle school you are held more responsible for developing the relationships with children. You do not have the same contacts with the home at the high school as you do here. (Teacher #2A)

b.      Programs - School A has fully incorporated the middle level philosophy into the programs, activities, and structure of the school.  As noted in the review of the Eichhorn portfolio materials, programs such as exploratory courses, full guidance programs, heterogeneous groupings have been in practice within the school.  When asked to describe the programs that have best illustrated the middle level philosophy, the principal responded:

> One of the most effective programs that incorporate the middle school philosophy is interdisciplinary teaming.  Giving a group of teachers the same group of students throughout the course of the day and making them responsible for their academic program has an incredible amount of power.  Teams work well for teachers and for students.  For the teachers, they have a chance to make a real impact on the students because they have a chance to get to know them very well.  The same smaller groups of children move between a group of core teachers creating a school within the school.  With our school being over 1000 students, it is important to create that structure in which teachers feel responsible for the children they teach, not just another student in another class during the school day.   For the children, teaming is a great way to build an identity within a large school.  Children are able to relate to a few teachers in a very personal way.  It becomes much more difficult for a child to be lost in the numbers game of a large school.  (Principal, A)

> The other program that has had probably the most impact on our school is the homebase advisory program.  Teachers have been able to combine the benefits of teaming with the structure of homebase to really get to know their children in order to provide a high level of support that addresses the diverse needs.  Although our program has been continually evolving over the years, the central goal has been to always meet the diverse needs of the children.  The program components have included time for peer tutoring, weekly activities focusing on character education themes, SSR (sustained silent reading), and reflection writing.  (Principal, A)

The teachers also voiced their pleasure and support of teaming at the middle school as one of the most important programs that has impacted the school.  All three teachers focused on the power of teaming to give responsibility and accountability of children back to the teachers.  Teaming was clearly the program or structure at School A that allowed teachers to have significant impact on children.

The power of teaming, if done correctly, is amazing. What you know about the kids is amazing. They know that you know. As a team leader you can make powerful adjustments, to take of them. Two aspects of teaming are how it works for kids and how it works for professionals. I have never embraced it personally because it gives me so much more to do. I signed on as a math teacher, now I am a life person. I have to deal with the life of 125 separate kids. Never enough time to do both. (Teacher #1A)

I love teaming. Teaming is incredible. Instead of being this isolated entity out there among hundreds of students, you have team members to meet to talk about kids; to come up with action plans…you can change a kid's life. Probably the most important concept. It really makes a difference. 120 kids for one person to keep track of is difficult. When they (the students) see that more than I person is interested and that they will be held accountable to five people, you can really make a difference in someone's life. (Teacher #2A)

Teaming allows us to share a lot more, be more consistent for the kids. Teachers able to be on the same page with assignments, assessments, and pacing. We are able to meet the children's needs. We meet as a team; we know what is going on in other areas. With teaming we can spread ourselves around more than if we were content specific. (Teacher #3A)

All of the respondents also referenced the importance of the advisory program within the School A for getting to know children better in order to create the relationships necessary for effective teaming. One teacher identified his role as a homebase advisor.

The homebase (advisory) program is time to give to the kids. They are able to relax and the teacher finds out information they would never otherwise have found out. We can find out what is going on in the building, find out things for the social worker, counselors to address. (Teacher #1A)

c.      Professional Development - The professional development required for the implementation and maintenance of the middle school program has been gathered from a variety of sources. The school district hired a principal that was extremely knowledgeable of middle schools to lead the transformation. The current principal remarked several times about the level of knowledge and expertise gained from the previous principal. In the area of professional development opportunities, respondents from School A replied:

School A has been extremely fortunate to learn the middle school trade from one of the best middle school minds in the area. (Our previous principal) led the way in this region as one of the front runners in middle level philosophy. She was close friends with Donald Eichhorn. That should say it all. As the vice-principal, I was involved in many of the early trainings sessions. There were summer conferences and academies dedicated to middle level education that we sent teams of teachers to. Yearly PMSA and NMSA conferences provided great opportunities to learn from other schools. In addition, we had many opportunities to go to other middle schools that were already practicing the programs we wanted to implement. They were great chances to learn and reflect about what we wanted to accomplish. After the initial wave of training and implementation, we had many chances during the school year to work as a staff in order to implement certain initiatives. Time is the greatest tool and resource. Once we had the right people in place, it was just a matter of time until the programs were up and running. (Principal, A)

Our transition time was unique. No one here had done this before. Most just wanted to leave. What was here before was fine. We got the chance to see things we had never seen before. Time was given to visit other schools, to see the other side. That offered great discussions and two sides of the debate. Our eyes were opened. At the time, our school worked great, but like a rear wheel drive car. We went great until we got stuck in the snow and then we just would spin our wheels. Teaming gives the power of 4-wheel drive. As a junior high, we thought we were doing a really good job and were working extremely hard but when we saw other things other districts and kids were doing, we realized that we weren't. (Teacher #1A)

One of the respondents felt that middle school philosophy was just the incorporation of good teaching practices that should be present in every classroom. For her, it was not the product of any specific professional development program.

I think to be a good teacher you just incorporate what middle school teaching is about into any classroom. To me, any of those trainings would have been things that I already do; have relationships with a child, finding out what is bothering them when in distress, learning how to learn with them, how to organize. It was part of my classroom before I ever became a middle school teacher. It is just part of being a good teacher. You can have all the in-service programs you want; if there is no giving of yourself then it will not make a difference. (Teacher #2A)

d.    Impact of Middle Level Philosophy - While the middle level philosophy had great impact and influence on the program and structure of School A at a rapid rate of change, its influence

within the areas of curriculum, instruction, and assessment were less evident or took longer to transform. The principal of School A remarked about the effect:

> The greatest impact that the middle school philosophy has had within our school has been within the attitude of teachers and how they view children. Programs such as teaming and homebase have forced teachers to see children as a whole, not just a student in their particular class at that particular time. I think teachers have become more of teachers of children than of a content area. Although that change has been a little slower with the secondary trained teachers, it is still occurring. The better organized teams have worked to correlate assignments, tests, and projects so that children are not overloaded. The communication within a team has the greatest ability to create change. I really do not think that middle schools have changed what teachers are teaching, the content; but the greatest impact has been on the how. (Principal, A)

Interestingly, the teacher respondents of School A remarked about the positive affect the middle school philosophy has had within the school, however, voiced concern about the early stages of implementation when it was felt that academics were not emphasized enough.

> The structure of the middle school allows children to do better. There was a time when too much was being devoted to the middle school. We didn't want anyone to feel bad about their achievement, even if they were not doing their job. It is not as extreme anymore. It is okay to allow children to fail, to hold parents more accountable, to demand they do their homework and the things that they were supposed to do all along. We were afraid it would hurt their self esteem. In that respect we have come back a little. (Teacher #1A)

> We have moved away for the warm and fuzzy that used to dominate thinking to a better balance. You still have the warm and fuzzy parts but now academics are more important. (Teacher #2A)

> The approach we take toward kids is the biggest difference. How we instruct children. Awareness was created in the staff. Some of the things that (the children) were going through, how that affects their learning, how to set up your classroom, being positive all the time, how important it is to greet them at the door, learn their names quickly, let them know you as a person. Those are the things that had the biggest impact on instruction. It really motivates the children. (Teacher #3A)

e.       Issues, Obstacles, Successes - The introduction of the middle school has met with great success at School A based upon the information received during the interviews. The success did

not come without its trials and tribulations that also took a toll on the School A. The obstacles

that were presented all focused on the human element of schools.

> Staff turnover has been the greatest obstacle in the transition to the middle school. While working on the Eichhorn materials we did a staff analysis. The results really shocked the committee even though we knew many of the teachers that were here in 1993 were no longer here. Middle school teachers are not made, they are born. Working with middle school kids can be a real challenge. In addition, a level of accountability and professionalism was expected from the principal. Teachers not ready to accept that challenge either went to the elementary school or the high school. It has taken some time, but we now have teachers throughout this school that want to teach in the middle school. Teachers' being passionate about what they do has made a great impact on our school. (Principal, A)

> Staff was the biggest obstacle. Get those out that did not want to be here. You need to be here because you want to be here. (Teacher #1A)

> Obstacles…not really any. Different personalities seem to come and go. (Teacher #2A)

> Teaming can be tough for a mix of personalities and philosophies. Teachers have their own agenda but have to work as a team. Some teachers that are more independent or new to the building do not work together right off the bat. (Teacher #3A)

2. Influence of Educational Standards

a. Concept of Standards - Respondents from School A commented on their use

understanding of educational standards and their use within the classroom. All of the respondents

related the current movement of standards in education to past initiatives that have occurred

within Pennsylvania.

> They are a new name for an old trick. Curriculum back in the 1960's and 1970's that everyone followed came from standards. Standards are the guideposts, to determine if I am there yet. The focus needs to be not so much the standard but the expectation within that standard. What is the expected behavior for the same standards for these different grade levels? (Teacher #1A)

Standards have always been there. Pennsylvania is so far ahead. All this focus on standards and PSSA and NCLB is for other parts of the country and for subgroups. Name it what you want. (Standards) are what you need to know about mathematics and now they have numbered them. (Teacher #2A)

When I began teaching, the push was for outcomes based learning. The current standards are not the far from that premise, just not as politically charged as the outcomes became. Standards in education, implemented well, assist the principal in assuring that all students in a school, district, state, will receive a similar experience within particular curriculum areas. (Principal, A)

b.      Professional Development - Whereas the professional development opportunities for middle level implementation consisted of formal programs in which the faculty participated as a whole, the introduction of standards within School A was more completed on a more informal basis either independently or within departments.

There have not been any real formal experiences with standards, at least if there were they were not memorable. The informal discussion that occurs when the staff gets together to discuss the application of the standards has been most important. There is more self reliance on other staff members. Communication is a key. Without the standards being present, we would not have had the same conversations. (Teacher #1A)

The most important activity has been time for becoming familiar with the standards. (Teacher #2A)

We have dedicated much more time to department meetings than we ever had since the inception of the middle school. The administration has worked with teachers to inform them of standards, how to document their application in lesson plans, and how they relate to the PSSA assessment for the 8th grade. Last year (2003-2004) we utilized the "Getting Started" materials that were distributed by the state (PA Department of Education). We are anxious to get our hands on the new Assessment Anchor materials when they are rolled out in October 2004. Teachers really want to see what the difference between 6th, 7th and 8th grade materials will look like. Once we got this concept going, the teachers really are eager to run with it and get their hands on as much information as they can. (Principal, A)

c.      Impact of Standards - Two of the teacher respondents commented on how the integration of standards has impacted the instruction, curriculum, and assessment within the math classroom.

Standards have raised accountability statewide. No longer are schools just buying a textbook as the entire curriculum. Before, the text was the curriculum. Standards have brought mathematics back to the power of the teacher and not the power of the textbook publisher. We find the things that we feel best meet our standards. (Teacher #1A)

Kids are required to do more as for as reading and writing within the math curriculum. Standards have had an impact on the math curriculum – how to read directions, how to take a test, show steps of work, more problem solving in the classroom, defending your answer. (Teacher #3A)

All three teacher respondents commented on the power of the standards to promote

changes in the method of curriculum design and pacing within School A.

What we haven't done yet is change the way those standards are taught. Teaching what the TIMSS report told us, not the mile wide and an inch deep. Until we change, we will not see the higher test scores. Standards will force schools to change the philosophy. (Teacher #1A)

The standards have changed how deeply you cover areas within the curriculum. Teachers are worrying more about the process rather than covering a wide variety of other areas. (Teacher #3A)

I love TIMSS. One of the best things that is being done with standards is the narrowing and focusing on certain areas. The way I teach is an integrated approach to teaching mathematics. I teach for retention not just for a few weeks. I teach organizational skills, note taking, writing, and reading. (Teacher #2A)

d.      Issues, Obstacles, Successes - The teacher respondents did not identify any difficulties or

concerns that had arisen during the implementation of standards within the curriculum. They

generally were pleased with the administration's efforts to personalize the implementation

process.

We have so much flexibility here. We have the flexibility to implement the standards in our own way through departmental discussions. We have the discretion to cover the same material in our own way. (Teacher #2A)

The administration of the school made a conscious effort to empower teachers in the process of standard implementation; however the overall expectations were set at a high level for all teachers.

> The standards provide a high level of guidance for the staff to point the direction of where they need to get their kids. How they get there, in different ways and on different days, within reason is up to them. They are the professionals. It is our expectation that they will get all children to the desired endpoint. We will provide every bit of support for them, but will also hold them accountable for what they do. (Principal, A)

3.    Influence of No Child Left Behind

a.    Basic Understanding - The principal of School A conveyed the amount of dedication and importance given to the No Child Left Behind legislation.

> I think we have done an outstanding job in our school and district to provide teachers the information needed to understand the legislation and the possible impact on our school. We have a large school and the possibility of many subgroups that would qualify (n=40). We have worked through the topics of AYP, levels of proficiency, possible sanctions to the school, and what subgroups do to the scores. Conversation overheard in various parts of the school at any given time encourages my belief that teachers have listened and are responding. They are talking subgroups, basic, below basic. They understand where we are and where we need to be. (Principal, A)

b.    Professional Development - Respondents at School A commented that the most effective professional development in the area of educating them on the subject of NCLB have been the discussions presented within the school during in-service days and department meetings.

> Our work as a department has been particularly helpful. We worked with the test scores, interpretation of test scores, and the emphasis given to particular standards on the test. (Teacher #3A)

> We have worked with the information from the Pennsylvania Department of Education web site to really help ourselves and the teachers understand the law and its impact. Our district has many in-service days and time in the morning of

each school day that we have used that information to inform, discuss, debate, but finally to create a plan to move forward. (Principal, A)

The principal of School A also commented about the impact of NCLB trainings that have been sponsored by external agencies.

> Just about every piece of literature that comes into the school office promotes this or that training to focus on aspects of NCLB. It is similar to what happened after Columbine. All anyone wanted to talk about was school safety and crisis plans. It is not that those things then, or this now are not needed. You just have to use good judgment to find out what it is exactly you want to look at. Things from the Intermediate Unit have been really good. I have been part of the LEAPS group at the state level and a local principal leadership academy. Those groups have taught me an incredible amount about the law, resources, and strategies. The key part I think is then what you do with the staff to keep them educated but not overwhelmed because that can happen really quickly. (Principal, A)

c.      Impact of NCLB - The principal and teachers of School A commented with mixed responses to the overall impact of the NCLB legislation on schools. Although all respondents felt much good has come from the legislation, the desired outcomes may not be realized.

> NCLB has done things within schools that could never have happened in the past. The structure was not in place, and still really isn't, but now the legislation tells us to move children ahead or else. It is the "or else" part that never was there before. The focus is really on the end results. You can say all the great things that school are doing for children, neat programs and fun activities, but if the children are not learning, it just doesn't matter. It seems that everything we are doing with children gets boiled down to one thing only – student achievement. It is not that I disagree with that premise. I am just concerned that some great things for kids, that may not directly produce a test result for a kid, is going to get cut from school programming. That is the real rub for middle school educators. We need to keep promoting the things that advance children in the emotional, developmental, and social aspects. Not just the intellectual. (Principal, A)

> The impact of NCLB has increased an awareness that you are reaching and moving along every child in the classroom. No longer are we just teaching to a group but must focus on individuals. Motivating teachers in discussion groups of how to move kids forward has been great. We are using our test scores to our advantage, finding what our weak areas are to pinpoint the areas we need to look at. Changes in the master schedule by creating more time for us to work with our children allows us to reach the students that need more help. (Teacher #3A)

The intention was good.  Make sure all children are educated.  How can anyone argue with that?  But do all children have to go to college.  Is education inflation going to occur?  Is NCLB being left out of the job factor?  What happens when children do not have the ability to go to college?  There is funding for the trades.  What is left to be available?  Is the most recent impact of NCLB to not identify the real needs of children so as to not create a subgroup?  Schools may not be meeting the needs of children so that we do not have to deal with the subgroup.  Minor disabilities are now normal so we do not have to identify them.  The next 5 years will see the impact.  (Teacher #1A)

d.      Issues, Obstacles, Successes - NCLB has created both obstacles and successes for School A.  The success involved the fact that many people were now talking about schools and accountability levels have been elevated.   The concerns existed around the fact that the legislations assumes all children will be able to reach the same level of achievement.

We are getting to be on the same page.  Since NCLB and the PSSA testing has been more prominent, time in meetings has been much more focused toward common goals.  We have been able to get things out of the curriculum that are not focused on the standards.  Accountability has definitely increased.  Teachers know that administration is better informed as to what should be occurring in the classrooms.  Teachers are less able to go off on tangents.  Standards and NCLB go hand in hand here.  Standards have provided the direction.  NCLB has provided the motivation.  (Principal, A)

I love the spirit of NCLB but I also believe that to reach 100% is not possible.  That is not a negative concept.  There are children that are just not ready to invest, and if the families do not invest, it would not matter if I do cartwheels, I can't change that…but I will give it my all to try to make a relationship happen.  (Teacher #2A)

Everyone is talking about education.  The community is thinking about their schools.  Teachers want people to come in to the schools and either praise or complain.  Just come.  I hate that the tests are published in the paper but it gives the public the information to fuel the debate.  (Teacher #1A)

We are more accountable now to make sure that we are moving children along.  That will probably increase.  It is hard for me though to see kids with extremely low IQ's and severe disabilities to be expected to perform at the same standard.  There is an element of manipulation trying to get around the numbers, trying not to meet the number of 40 or lowering the bar to make the goals more reachable.  (Teacher #3A)

4.       Strategies and Activities in Response to Competing Forces in the Middle School

The principal and teacher respondents of School A were asked to respond as to how the concepts of middle level philosophy, academics standards, and NCLB were creating interplay within a developed middle school. The principal identified areas of change within the organizational structure and professional development.

> The middle school concept is extremely important to us at (School A). There are so many structures and programs in place to support children in their journey to adulthood. The push for increased student achievement has caused us to look at how services are being delivered but we have been cautious not to compromise the intent of the programs. There are some courses in which a level of tracking has returned. Academic support math is one of those areas. We have really manipulated the master schedule to obtain more time for teams with their own children. Homebase advisory time has been reduced to only 20 minutes per day to provide for more instructional time. The common planning period during the school day has been impacted by the way duties and planning were scheduled. Teachers still have their morning time for common planning. The structure of the middle school has been altered a bit since the original plan. It seems that we have bent a few things due to the demand for increased student achievement, but the core areas of middle school which include teaming are sacred and will not break. (Principal A)

> I have great concern over the emphasis that certain professional topics have received recently at the expense of others. It has been a long time since we have really talked about middle school programs as a staff. For the teachers that have been here more than a few years that does not concern me so much. My real worry is with the teachers that have 5 years or less experience. That is the majority of our staff. We are no longer dedicating time to what made our school as good as it is. Where are they going to get that level of understanding? At the team leaders meeting last week, I specifically addressed this issue. I put the onus on the team leaders to keep the fires alive in regard to certain topics. We are also going to form some committees to address programs such as student led conferences. When we have time as a district, all we talk about is student achievement and proficiency levels. That is really scary for middle school enthusiasts. (Principal A)

The teachers also were concerned about professional development, especially in the area of new staff, and how educators may begin to view the art of middle school teaching.

Opportunities for professional development are affecting the young teachers more. Those that have been here longer still look at the whole child, still integrate and teach writing, reading in the math period. New teachers come in with the idea of maybe just covering curriculum according to the standard. They are worried about regurgitation and memorization. Teach and test, teach and test. More lectures, not encouraging hands-on tasks, not encouraging tactile learning and not a lot of cooperative types of learning. They are worried about taking the time to allow those types of things to happen in the classroom. (Teacher #3A)

Topics for professional development are all academically related. They used to be about homebase or excursions. Now they are about how to improve our reading and math scores. We have moved away from the warm-fuzzy to a better balance. But what happens to the new staff? It is still important that we talk about middle level students; what they are like and how to teach them. (Teacher #2A)

It's about the little things that are beginning to be missing. Team identity, leadership projects, setting up the room. Its not that we do not want to take the time, but our focus is on something different. When you leave that element out of it, kids may not want to perform for you. (Teacher #3A)

Teacher respondents expressed concern over how some teachers may interpret the need

for increased student achievement through changes in instruction and curriculum.

I am concerned that we are encouraging teaching to be more of a job that that of life's work. We are encouraging teachers to lack the personalization. It is an issue of motivation of children. Why do kids work their tails off for one teacher and just want to get by for the other teacher. We may not motivate kids as much if we are just going to cover curriculum and it's more of a lecture. Lecture, worksheet, practice. (Teacher #3A)

Other comments were received as to the positive impact of standards and NCLB within

the curriculum.

I like that we are using the information we have on kids (PSSA results) to get them extra help. Pulling them into study halls with their own core teachers. More math time. Different types of math classes. We have identified some basic core units to work with them. (Teacher #2A)

We have prioritized units so there is not as much review. There is more diagnostic testing beforehand with assessments more often and in smaller chunks. Stranding topics throughout, more of that so the kids are able to maintain. It is not that we are teaching that one unit on decimals and never see it again for the rest of the year. So I am stressing that (stranding). (Teacher #3A)

Although the teacher respondents were generally favorable in regard to standards used to guide instruction, considerable concern was evident with the practice of using a standardized assessment tool (PSSA assessment) as a single measure of success for student achievement.

> We are not teaching to the test. We should be teaching to the standards that are reflected in the assessment. The PSSA is a necessary evil, however, using those standards and assessment for NCLB and beating you over the head with it is not right. There is a dilution of what is happening because of the intense focus. Are test scores going up indicating increases in student achievement or are the tests easier to make the state look better. (Teacher #1A)

> I do not like the PSSA tests. I do not like saying that one test shows all that a child knows. I do not like that some teachers teach to the test. I think we should prepare them to take the test but that should not be the only focus. We need to teach them how to think that will help them in life. Teach test taking skills for taking that type of test. I think it is a shame that if a child does not have a good day or is not a good standardized test taker they need to be evaluated that way. (Teacher #2A)

The principal of School A also commented on the significance the PSSA assessment and results have in guiding curriculum and instruction decisions.

> Subgroups are all that we ever talk about anymore. Our overall proficiency scores are acceptable, but our subgroups are where we are getting hung up. There is an incredible focus on ensuring that everyone in the schools knows exactly what subgroup numbers we are dealing with. At the middle school, children that are not proficient, especially the subgroups, are losing out on certain elective opportunities in order to supplement their reading or math. A sheltered instruction class is being created to assist the ELL students. We received our test scores on July 15, and ever since it has truly dominated nearly every discussion at the district level on the topic of instruction and curriculum. (Principal A)

Given the attention and focus on student learning and NCLB, teacher respondents were asked to comment on which of the competing forces identified has had the greatest impact on their teaching practices.

> The most important factor is responsibility. I see the forces within the school as complimentary, not competing. My kids, my responsibility, right? So give me the power of teaming to make schedule adjustments to meet the children's needs, get them the remediation they need. Give me their PSSA scores, study hall lists –

add that element of responsibility of the test for the child.  The middle school has had the greatest impact on my classroom and life.  If the high school would team and keep those kids, what would that be like?  When 5 teachers are given 125 students for the school year and told "educate them," what would that be like? (Teacher #1A)

Without the structure of the middle school, it would be much harder to get the child to invest.  The middle school has been a powerful factor in creating the relationships because until you get that child to invest, to form connections and want to come and receive help, it is hard to make a difference.  (Teacher #2A)

Teacher #2A, a secondary certified teacher with high school teaching experience indicated how her attitude toward teaching and middle school has been influenced:

You have to be crazy to teach at the middle school.  I never thought I would be a middle school teacher and yet I came here and fell in love with it.  I have had many opportunities to leave.  I started Open House the other night with this comment to the parents, 'This year I will teach your children a little math and a lot about life.' (Teacher #2A)

In the area of the affect of the highly qualified teacher requirement, the responses from teachers fell in line with the type of certification that they possessed, while the principal related serious concern as to some aspects of the requirement related to staffing issues.

Everybody has their niche and who is to say that a teacher that knows the curriculum inside out and other areas that would be beneficial to the middle school would not make a better math teacher for the middle school years than someone that is totally secondary.  Expectations may be too high and pacing may be too fast. Kids end up shutting down.  (Middle school children) need a teacher that is encouraging and motivating.  Having just the higher level knowledge in one area does not always make you a better teacher.  (Teacher #3A)

I love highly qualified.  No one should be teaching $7^{th}$ or $8^{th}$ grade without being a secondary teacher.  The teachers should be an expert in their field, and if they are, they should be held accountable to a high standard.  The test should be harder than it is to be highly qualified.  We are now teaching high school concepts at the middle school.  You need teachers that have studied the field, understand it, and can convey that knowledge to children. (Teacher #2A)

Our people were highly qualified but without the label.  You need secondary teachers at this level. A great emphasis was placed on elementary certified people that if you are going to teach math, you better know what you are doing.  It should

108

not be just something that you like.  It has added stress and accountability to those teachers to be sure they know their stuff.  (Teacher #1A)

I like the idea behind the requirement of teachers being highly qualified for their subject area.  Shouldn't they be?  For the money that teachers are being paid today, the public demands the best teacher for their child.  Within the middle school, highly qualified can have great impact.  We have three teachers currently that had tested into their positions within $7^{th}$ or $8^{th}$ grade with only an elementary certificate.  That is not the part that bothers me.  It is a good idea to ensure teachers have the background for the subject area.  What concerns me is what may be to come.  Are we headed for non-education certified professionals needing to only pass a test in order to become teachers? What will that do to our profession and things like middle schools?  There is also concern over what may be within special education.  Special education teachers may need to pass tests in the areas in which they provide instruction to children within their special education classroom.  Will that open up doors to great special education teachers to get out of special education for regular education.  The pressure within the subgroups is high.  Are we opening the door for our needed special educators to leave that behind?  The things that are to come are what worry me about highly qualified. (Principal A)

# CHAPTER FOUR

# IV. DESCRIPTION OF FINDINGS FROM SCHOOL B

## A.    DEMOGRAPHIC INFORMATION

School B was also a suburban middle school in the South Hills area of Pittsburgh.  Student enrollment for the 2004-2005 school year was 745 students within grades 6, 7, and 8.  The school district supported a 6.0 square mile community that was predominantly residential with several business districts within the area.  The population of 34,000 residents was highly educated, with most adults having a college education.  The average income per household was $80,000 for 2003.  The community had a strong commitment to education and was actively involved in an educational partnership with the school district.  Community demographics consisted of mostly white, with less than 1% each of black and Asian.

School B was built in the 1930's, described as an ultra modern junior high school. Features included a large theater style auditorium, building wide intercom system, spacious classrooms, and classroom audio systems.  School B closed in the 1980's due to deteriorated conditions and decreased enrollment in the district.  The 7th and 8th grades were moved to the high school to form a junior-senior high school.  The school was reopened as a middle school in 1998 after an extensive renovation project.  The 6th grade was moved out of the elementary buildings to unite with the 7th and 8th grades to form a true middle school structure.  A sister

school was also reopened with similar circumstances on the other side of the community. In 1993, a principal was hired to create the middle school concept within the school, even though the school was housed in the high school and named a junior high school. The 1998-1999 school year was the first time that School B was named a middle school and able to fully operate as a 6-8 middle school. In 2002 the principal that led the middle school resurgence left the district. The vice principal at the time was promoted to the principal position.

The teaching staff consisted of 65 professional members. An analysis of the years of teaching experience of the staff discovered that a significant number of teachers were hired since 1993 when the elements of a modern middle school were introduced to School B. Of the entire staff, over 55% of the teachers have been hired since 1993 and over 35% of those teachers have less than 5 years of experience. Overall staff experience of School B is included in Table 6.

**Table 6:  Years of Experience - School B Teaching Staff**

| Years of Experience | Number of Staff Members | Percent of Staff |
|---------------------|-------------------------|------------------|
| 30-36 Years | 5 | 7.7% |
| 25-29 Years | 5 | 7.7% |
| 20-24 Years | 4 | 6.2% |
| 15-19 Years | 5 | 7.7% |
| 10-14 Years | 10 | 15.3% |
| 5-9 Years | 13 | 20% |
| 0-4 Years | 23 | 35.4% |
| Total | 65 | 100% |

**B.      REVIEW OF PSSA ASSESSMENT INFORMATION**

A review of School B's student achievement data for 8th grade generated from the Pennsylvania System of School Assessment (PSSA) mathematics assessment from 2002-2004

revealed student achievement significantly above the minimum proficiency levels. The overall level of mathematics proficiency for 8th grade was 83.5% in 2002; 90% in 2003; and 87% in 2004. Additional analysis of the data revealed that School B had enjoyed gains of 10% within the area of advanced students. Some of that increase was obtained through a reduction in the percentage of students achieving at the below basic and proficient levels; however the number of students scoring within the range of basic had remained relatively stagnant. The overall performance of School B from 2002-2004 is summarized in Figure 10:

**Figure 10: Overall Performance School B - PSSA Mathematics 8th Grade**
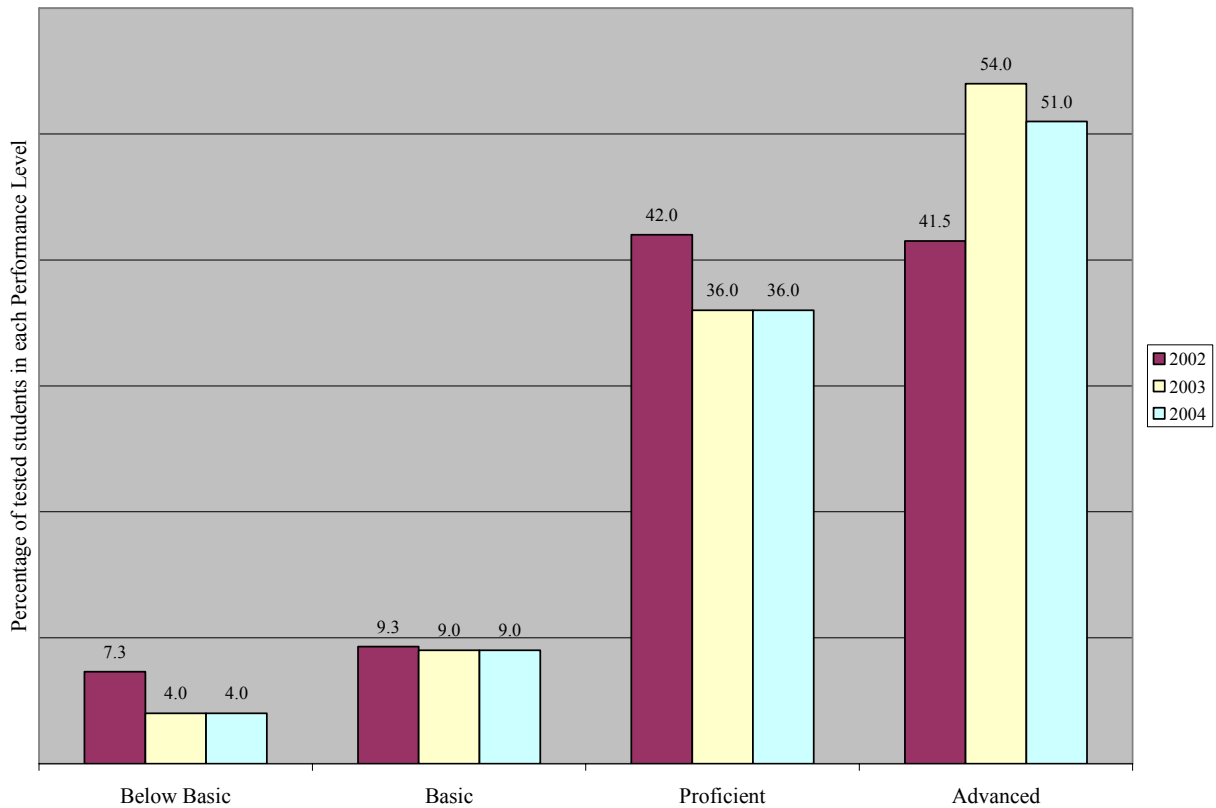
PSSA data from 2001 was not available from School B which limited the researcher's ability to analyze test results prior to the passage and introduction of the No Child Left Behind Act in January 2002.

An analysis of the assessment data for School B revealed that only one subgroup contained numbers of students approaching the level set by NCLB to be included as a subgroup for reporting purposes. For School B, "students with IEP" was the only larger group. Subgroups of economically disadvantaged, black and ELL were all less than 10 students. Assessment data was received for those students but was not included here considering the size of the subgroup. Assessment results for School B's subgroups are listed in Table 7:

**Table 7: School B - Subgroup Mathematics Performance Levels**

| Subgroup | 2001 | | 2002 | | 2003 | | 2004 | |
|---|---|---|---|---|---|---|---|---|
| | # students | proficient | # students | proficient | # students | proficient | # students | proficient |
| Students with IEP | n/a | n/a | 13 | 23.1% | 23 | 47.8% | 29 | 41.0% |

Since 2002 the overall number of special education students at School B more than doubled in number from 13 in 2002 to 29 in 2004. The percentage of students with IEP's that were scoring at or above the proficient level increased significantly from 23.1% to 41%. Although the percentage of students scoring at a proficient level (41%) was above the 35% level required by the accountability system in place for Pennsylvania, it was far below the 87% proficiency level enjoyed at the overall school level.

### C.    REVIEW OF EICHHORN AWARD PORTFOLIO MATERIALS

*Researcher's Note:*    The portfolio binders used in the submission for the Donald Eichhorn Award by School B were not available for review by the researcher. Information regarding the submission process and highlights of the school included in the binders was obtained through an

interview of a veteran language arts teacher that had worked on all of the submissions and observations within the school building.

School B was awarded the Donald Eichhorn Award in 1999, however had applied for the award the previous two years but did not win. The first application was in 1997 when the school was part of the junior/senior high school within the school district. The guidelines for submission from PMSA were very limited and vague. The committee that had worked on the submission decided to organize their portfolio by using the ten essential elements of middle schools from *This We Believe* (NMSA, 1982). It was believed that this submission assisted in the development of the current criteria for all Eichhorn submissions. Although the committee was able to provide ample support from within their school for each of the essential elements, School B was not awarded the Eichhorn award in 1997 or 1998. According to the teacher interviewed, much of the committee and administration of the school believed that School B being labeled a junior high school limited their ability to receive the award.

For the 1998-1999 school year, the junior high school was divided into two separate middle schools, each in their own building. School B was finally named a middle school, even though many of the programs consistent with middle level philosophy had been long in place. The new challenge for the submission committee was to create a portfolio that created an individual identity for School B and highlighted its work, separate from the other half of the former school staff that now comprised the sister school within the school district. The interview with a teacher from the application committee as well as researcher observation revealed the following programming features of School B:

1. Educators Knowledgeable About and Committed to Young Adolescents

    a. Teachers that loved to be in the middle school as much as they loved the middle school child. Teachers were committed to the children

    b. Staff that demonstrated extensive middle level knowledge as well as content specific expertise

2. A Balanced Curriculum Based on the Needs of Young Adolescents

    a. Interdisciplinary units at each grade level that focused on the needs, interests, and capabilities of young adolescents

    b. Opportunities for students to showcase their talents through laboratories, hands-on activities, and projects

    c. Evidence of instructional standards in place to guide instruction, curriculum, and assessment

3. A Range of Organizational Arrangements are Incorporated into the Schedule

    a. Full interdisciplinary teaming at each grade level

    b. Daily "Team Time" used to support students in which team students were linked with core team teachers for academic support

    c. A master schedule that incorporated extended blocks of time for teams to use for activities, programs, etc.

    d. Teaching planning included a period of individual planning as well as team planning to facilitate cross curricular connections

4. Varied Instructional Strategies

    a. Opportunities for hands-on exploration were evident in several classes and in multiple disciplines

b. Interdisciplinary units included cooperative learning activities as well as off-site experiences for further exploration and enrichment

c. Technology was utilized to a high degree as an effective teaching strategy

5. A Full Exploratory Program

   a. An academic exploratory program consisted of a foreign language course at each grade level

   b. Vocational exploratory opportunities were available through the unified arts program in all grade levels

   c. Several clubs and activities, interscholastic sports for boys and girls, and intramurals encompassed the recreational aspect of the exploratory program

6. Comprehensive Advising and Counseling

   a. Although a specific advisory program was not in place, the daily team time allowed for opportunity for teachers to get to know their students in a setting in which the teacher to student ratio was approximately 1:12

   b. A full time school counselor was trained on issues and problems specific to middle school age children

7. Continuous Progress for Students

   a. Communication of student evaluation through the use of progress reports, report cards and parent-teacher conferences

   b. The use of multiple teaching strategies to address differences in learning styles

   c. Acceleration and remedial programs (gifted, special education) to support student academic needs

8. Evaluation Procedures Compatible with the Nature of Young Adolescents

   a. Evidence of portfolio usage to document student progress throughout the school year

   b. Teacher created rubrics were used to evaluate student work

   c. System of evaluation in place with specific methods of feedback presented to parents

9. Cooperative Planning

   a. Daily team planning period to facilitate cooperative activities.

   b. Interdisciplinary units implemented at each grade level

   c. Extensive practices of information and strategy sharing between professionals within and across grade levels

10. Positive School Climate

    a. A sense of pride and belonging to specific teams within the school. Hallways were marked with items of team identity, including banners, artwork, and mottos indicating were each team's classes were

    b. Procedures to ensure safety of students and staff were clearly evident

Information gained through interviews with the lead teacher of the application process and the current principal clearly conveyed a great amount of pride and accomplishment within School B. The school was described as a collaborative building, one in which there were strong connections between teachers and children. The teacher commented about the connection with the children:

> There is a connection with the kids. Kids do not get lost here. People do tune into the children. Teaming makes communication easier. Parents have made comments that in a school of this size they were amazed at how much people noticed and cared. Even in a really large environment, kids are taken care of.

The staff brings this, and is encouraged to bring it. Programs are artificial. It is about sitting and talking with kids and asking them how they are. There is an incredible cooperative spirit. A willingness to be and look stupid. We have a great time. Everything else follows from that.

## D.    PRINCIPAL AND TEACHER INTERVIEW DATA

During the principal and teacher interview sessions at School B, participants were asked to provide commentary regarding the three focus areas of the study: middle level philosophy, academic standards education, and the No Child Left Behind Act of 2001, and the impact of each area on the structure and programs present within the school. One mathematics teacher was chosen from each grade level in School B (grades 6, 7, 8). As an additional requirement, the teachers were required to have at least 4 years experience so that comparisons could be made between educational practices evident within public schools both prior to the passage of NCLB and since its adoption.

The principal of School B had worked in the school a total of seven and a half years. He taught mathematics for 3½ years before moving to administration. He then served as vice-principal for two years (2001-2003) before being hired as the principal for the last two years (2003-present). The application for which School B was awarded the Donald Eichhorn award was prepared in the fall of 1999 while he was a teacher in the school. Other work experiences have included working as a permanent substitute in mathematics during a school year at the high school within the school district. Professional certifications included secondary mathematics education and principal certification.

Teacher #1B was a veteran of 25 years, with 18 years of experience within the elementary setting and 7 years of middle school teaching 7th grade mathematics. All of her years

had been with School B's district.  She moved to School B in 1997 when the school was still at the junior/senior high school.  Her certification included elementary education as well as secondary mathematics.

Teacher #2B had 11 years of experience as an 8th grade mathematics teacher, beginning at the junior/senior high school then moving to School B upon its opening in 1998.  He came to School B in 1993 at the time the district had hired the previous principal to implement the middle school concept within the school.  His certification was also secondary mathematics.

Teacher #3B had 24 years of experience combined within the elementary setting and middle school.  She had taught all grades from 2nd-7th and was currently teaching a full schedule of mathematics within 6th grade.  She came to School B when it moved from the junior/senior high school to its current location.  Certification was elementary education and secondary mathematics.

1.      Influence of Middle School Philosophy

a.      Middle Level Concept - The middle school philosophy had considerable impact within School B, even before it was officially named a middle school.  The district had recommitted itself to the middle school with the hiring of a principal in 1993 to begin the transition of 7th and 8th grades from a junior high school to a middle school.  That transition became complete in 1998 when the school moved to its own building and brought in the 6th grade from the elementary schools.  When asked about the impact of the middle level philosophy within School B, respondent comments included:

> The middle school is about structuring and developing a school almost exclusively toward the needs of middle level kids.  Their needs developmentally, their needs physically and emotionally.  You have kids that by nature need to be active and need to be moving.  So you have a curriculum and instruction that

address that need. Frequent activities and changing activities, those kinds of things. You have kids that need to be social and interact with others to find out who they are. Students are encouraged to work in groups to look at things from different angles. Kids are starting to understand the way they think and can now begin to understand how others think. In middle school, you start to see a curriculum that causes kids to think (Principal, B).

Middle level education is having a specific structure for the children between the ages of 11 and 14. Having worked in the elementary school, sixth grade is very appropriate to this level. They outgrow the elementary school structure and now have the opportunity to become more independent. Middle level includes a wonderful opportunity for children to move up to a bigger environment, have more responsibility but not to be so overwhelmed with too much. Our school provides that for the children (Teacher, #3B).

b. Programs - School B had incorporated many of the components of an effective middle school program as defined by the National Middle School Association (NMSA, 1982). Details of those programs were presented in the review of the Donald Eichhorn materials. Respondents were asked to comment on programs or structures that have had the most impact on the school:

Teaming was the big change. That impacted a lot of things. The curriculum didn't change that much. From my perspective, you get to know the kids. You work with the same people that work with the same kids. If they are struggling you can find out other areas that also may need support. Teaming makes it so that the team can determine what a child is doing across classes, so we can stop it now. It is amazing how you see what a child is doing in your class and can look to see if they are doing it in other classes. Information comes together as a complete picture for the child (Teacher, #2B).

Teacher #1B commented about the power of the team in working with parents and the ability to meet with parents as a collective whole:

When we meet with parents we meet as a whole team. The parent can see the whole picture. It allows us to see all of the pluses and minuses, strengths and weaknesses. On a regular basis we go through the entire (team) list and see what kids might need support (Teacher, #1B).

The principal also provided comments in regard to the effectiveness of teaming as a communication tool for teachers:

Teaming encourages the professional staff to develop things across the curriculum. These kids need to see the connection of topics to the real world and make sense of things to what they know outside of school. Teaming gives teachers time to plan together to develop these connections (Principal, B).

c.      Professional Development - In the area of receiving professional development or training

in regard to middle level concepts, respondents from School B commented on the importance of

collaboration and peer mentoring situations among the staff:

Team meetings were used for team building activities. As a team teacher at the time, the current principal and vice principal would come to our team meetings to lead discussion groups around Turning Points and other articles. That is were we got much of our knowledge (Principal, B)

Initially when the school formed, there were many in house type of development and trainings for teaming and structure. The principal led the groups. Some people went out to meetings and trainings and then came back to present the information (Teacher #3B).

The current principal of School B also commented on the value of professional

organizations for the training of staff members for implementation of the middle school:

We hosted the middle school conference (PMSA Western Region) in 1998-1999. That really gave us a chance to see what other buildings were doing. It gave the young teachers a chance to see what the middle school philosophy looked like. There were exemplary middle schools philosophies in place. We did not have to reinvent the wheel (Principal, B).

d.      Impact of Middle Level Philosophy - When asked to describe the impact of the middle

level philosophy within the area of curriculum, instruction, and assessment, the principal of

School B responded:

Assessment has been shaped considerably. There is more authentic assessment. The kids are doing, not just writing. Teachers get the kids involved in projects and creating things. Things that require rubrics for assessment, not just putting a percentage on top of the paper any more (Principal, B).

Teacher respondents indicated less impact on the core curriculum due to the middle

school philosophy; however, they did focus on the organizational change within the school due

to the introduction of middle level philosophy:

> The middle school pulls more of the elementary idea into the secondary level. Team
> activities, projects, spirit days, and door decorating contests. Things like that (Teacher
> #1B)

e.      Issues, Obstacles, Successes - The introduction of the middle school concept into School

B was a relatively smooth transition according to the respondents. One of the main reasons was

the method in which the staffing took place. One of the respondents commented:

> If teachers were already in the district they were given the opportunity to come to
> the middle school when it was formed. We had the opportunity to talk to
> principals and find out what their philosophy was and what they thought. We
> knew how they intended to structure the programs. There were people who
> wanted to be here and those that did not. We were given the opportunity to go to
> other schools within the district. There was no obstacle of staffing. If you wanted
> out, you got out. If you wanted to be here the opportunity existed (Teacher #3B).

One of the teachers commented about the perceived impact that the middle school would

have on the curriculum within School B:

> I think there is a thought out there (public) that because this is a middle school
> that we fluff down the material. We do lose a couple of days here and there that
> are designed for projects but the curriculum is about the same. Teachers bought
> into it pretty well. Some were a little worried that teaming would be all fun and
> games (Teacher #2B).

An additional concern was presented by a teacher and the principal regarding maintaining

the focus of the middle school and educating teachers on the middle school philosophy:

> There have been some teams that didn't work but most worked really well,
> especially for the new person. You get to learn pretty quickly how the school
> works when you have people around you constantly telling you what they do
> (Teacher #2B).

> One of the biggest challenges of the middle school is helping the staff to
> recognize the importance of taking the time to do the little things that make this a

middle school. With all of the pressure that come with increasing our writing, reading and math scores; and the rigorous curriculum, obviously we need to be academics first, but there is that piece to middle schools where you have to address the emotional and social needs of the kids. If you don't, these kids by nature, if they are not emotionally and socially ready to learn, they will not be as productive as they could be. They need to feel safe, they need to feel comfortable. They need to feel connected to the school. Sometimes we put the cart before the horse by saying I am a teacher first and not spend the time necessary to make kids feel welcome (Principal B).

2.      Influence of Educational Standards

a.      Concept of Standards - The current emphasis on standards has not had a significant impact within the mathematics curriculum at School B according to the respondents. District wide curriculum supervisors for each content area had promoted the use of standards within the school and district as long as any of the teachers could remember. The principal commented about the state of standard implementation within the school:

> With the curriculum supervisors, we have always been pretty up on the standards and had the curriculum aligned with the current standards. But as far as getting them to the classroom level and the kid's level, we are very early in that process right now. Right now teachers are familiar enough to have them posted on the top of assignments and so forth. We are just exposing kids to them. In terms of being called a standards based school, we are not there yet. We are just starting to educate the teachers. That has been much of what our in service has been. The notion of backward design and evidence. We are not as far along as we could be (Principal B).

Two of the respondents of School B commented with their feelings about the role of standards for both the teachers and students:

> I do not know that the standards mean a lot except that these are the topics that need to be taught. I do not think that if children know the standard numbers it will make them learn the content any better. I certainly have not sat down and said now we are standards based and going to change all of our teaching. I really have not changed anything. We have spent time as a district looking at the standards and how they will be reflected on the test (PSSA). But as far as the teaching of it, nothing has changed. We are still trying to get the concept of mathematics to the students (Teacher #2B).

There have always been standards or requirements of what we wanted children to learn in math. It is more of an organization. Now we have identified by the state what things we want children to accomplish by a certain time. Now we are working to make the children aware of the standards and how their work ties to the standards. In sixth grade I want the children to know that there are standards but am not so concerned about whether they really know the number (Teacher #3B).

b.      Professional Development - The nature of professional development within School B in regard to standards in mathematics was to introduce the standards and provide teachers the time to work as a department to align their curriculum to the standards. The respondents' comments regarding the type of professional development they received are integrated through the responses concerning impact of standards as well as issues, obstacles, and successes.

During the department meetings for each subject area, standards have been part of our discussion since we have begun. They have allowed us to standardize our instruction between classes and between the two buildings (Teacher #3B)

One of the teacher respondents commented on the importance of the people on the interdisciplinary team as well as the mathematics department for professional development:

I have seen a lot of friendships develop out of teaming since you spend so much time in the team. We still have our department too. We share ideas, like "hey try this, it works." We have not lost the department connections. The whole team takes responsibility to make sure the new person is okay (Teacher #2B).

When I came on board, there were a couple of days before school that I met with others in the math department to get what I needed. We were assigned a mentor; we set a schedule and met as needed. We discussed middle school topics but also talked about the curriculum alignment (Teacher #1B).

c.      Impact of Standards - The respondents of School B were asked to comment on the impact or influence the introduction of standards has had within the mathematics curriculum. Responses included the topic of curriculum alignment:

The really valuable thing is looking at what each grade level needs to accomplish related to the other grades (Teacher #1B).

You may find the math department is more in tune with the idea of standards than some of the other areas. I mean math is so logical. The standards hit this topic, this topic and this topic. Math is more logical for the standards. To us, I do not think it is standards. These are the concepts, they are logical so why do you have to call them something else. For some other areas it may streamline what they are doing (Teacher #2B).

The sixth grade teacher commented on the organizational change that took place for the

2004-2005 school year due to the increased attention on academics and standards:

The team structure in sixth grade changed to have only one person per team teaching each of the content areas. The two teams are aligned more closely. The two math teachers are much more consistent. Last year everyone taught math. Previously, our focus was the other subject. Now we have given that up and are focusing on math. We have more opportunity to develop new things that we never had the time to do in the past. We were always torn between the two subjects being taught (Teacher #3B).


d.      Issues, Obstacles, Successes - Respondents were asked to identify any obstacles, issues or

successes that have occurred with the introduction and implementation of standards within the

mathematics curriculum. Many of their comments about standards in the previous sections also

included the respondents concern and feelings in regard to the focus on standards. The school

district had committed significant attention toward having teachers educate the students on

knowing standards and specific numbers of standards. The disdain of one of the teachers was

included in the following comments:

Everyday saying that this is the standard we are working on, it isn't meaningful or useful for the child. It is more information for them to learn. For them to memorize where that skill relates to the standard, it is just one more thing for them to remember (Teacher #1B).

Children are responsible to learn the standards. In sixth grade I want the children to know that there are standards. I am not so concerned about the number of the standard, if they really know that (Teacher #3B).

The most positive aspect of the standards within the mathematics department was included in a teachers comment about curriculum alignment:

> The best application I can think of is when we got together as a department and looked at each standard to see when the skills were introduced, practiced, and mastered. Each grade level knew what the expectation was (Teacher #1B).

3.      Influence of No Child Left Behind

a.      Basic Understanding - Comments from respondents from School B regarding the fundamental concepts of the No Child Left Behind legislation were clearly charged with much feeling and emotion. They identified their concerns and inherent conflict within the requirements:

> I think it is a crazy idea. It is like telling a doctor you are not allowed to let anyone die. I think there are some students that may never achieve where some other students may. We started team teaching this year with the special education teacher. I am going to learn a lot working with the special education teacher. But how I am going to keep up the same pace and cover all the same material I did before and not harm the other kids. I feel like I am back teaching third grade where you stay on a topic until everyone in the class knew it and you don't move on. I am concerned about how to keep the same pace and cover the same material. I do not think we are covering what we did 5 years ago. To keep up that pace and leave no one behind seems unrealistic (Teacher #1B).

> To be completely honest, NCLB drives you nuts due to the amount of testing, the amount of mandates without the support. This is what you need to do, now go and do it. That is the part that drives me crazy (Principal B).

One of the teacher respondents focused on the idea of providing children with resources to allow them to achieve to the highest of their own ability, although her comments were still centered on an opportunity based system and not a result based system.

> We will do our best to give each child the opportunity to learn and go as far as they can. Some children will always have a great deal of difficulty learning. I think the thought behind this is that we take each child as far as they could go. For us to give a supreme effort to help the children do their very best so that they could accomplish perhaps more than you thought they could (Teacher #3B).

b.	Professional Development - Professional development opportunities within the area of

NCLB for School B have mostly focused on building level activities and conversations led by

the building principal.  Most of the information presented was obtained from the Pennsylvania

Department of Education website:

> At first we addressed the information level at faculty meetings.  The goal was to
> give people the chance to moan and groan but then move past that.  It is the law
> so let's get going.  What we do now is more goal-setting for the staff.  We get
> together and decide what it is we need to do.  (NCLB) has forced us to have a
> more data driven focus (Principal B).

> We had some meetings about it in the beginning.  He (School B Principal)
> showed us each year what we had to do.  To be honest, I don't even remember
> what the percentages were; it was pretty much the final goal that every kid has to
> pass that got everybody's attention (Teacher #2B).

One teacher respondent expressed concern over the fact that while her knowledge

regarding NCLB was incomplete, the district was also in the learning process and getting

information to the staff in a piecemeal fashion:

> To be honest, I think it is learning process for the district.  I am not sure they are
> sure completely understanding.  We have had a few meetings with slide shows
> and PowerPoint presentations. Talking about their understanding of what this
> program was about.  Some of it was somewhat ambiguous.  People were not
> exactly sure of what we were supposed to know.  It is not a bad thing.  We are all
> learning about it as we hear more and more (Teacher #3B).

c.	Impact of NCLB - The principal and teachers of School B commented about the impact

of NCLB in a generally positive manner.  The principal discussed how quickly the district had

instituted some changes due to the legislation:

> In terms what is has done for our district, I have never seen (the district) move
> that far, that fast before.  It has lit a fire under the district.  It gave us a reason to
> change.  It has changed what we have done.  We have always had high
> expectations for children.  What it has done is make us look at every single kid.
> Look at getting kids from proficient to advanced, basic to proficient.  (NCLB) has

forced us to put our money in certain places.  Put more (money) into remediation to be sure that all are moving (Principal B).

Although School B overall PSSA scores were extremely high, considerable focus and impact was felt in the area of special education.  Respondents identified areas of change within special education:

Subgroups are still a focus.  Special education is a real concern.  It has made us look at how we do special education (Principal B).

New this year, the special education teacher is co teaching for one per during the day.  Special education being pushed into the math classes (Teacher #3B).

Tracking was never really gone.  We always had honors and academic math. Now we are trying to do away with special education math classes by implementing co teaching within the regular classroom.  This is currently being done at each grade level.  Try to provide the opportunity for kids to be in a regular education math class with the regular teacher, regular expectations, but what is has done is that we are losing middle school philosophy.  Now (the math structure) includes special education lower level classes, regular level and then the top.  Kids know they are different levels.  Some 8th graders are taking 9th grade math.  So at 8th grade there are four math levels (Principal B).

Considerable impact was also felt in the area of scheduling and time.  Responses in regard to the impact of the intense focus on student achievement on the time and structure of the building were as follows:

Impact of NCLB has created time restraints.   At the middle school last year we could see children within different opportunity.  This year we changed the 6th grade structure.  We are no longer teaching more than one subject.  Now we see kids only once per day (Teacher #3B).

As we add remediation into the 8 period day, something has to come out.  It comes down to unified arts and foreign language.  Something has to give.  Kids get into the remediation program in 6th grade for two years.  After two years the program is to have kids caught up.  But there is no foreign language for beginners at that level, so it leaves kids nowhere to go.  You have a real dilemma (Principal B).

d.      Issues, Obstacles, Successes - One of the areas of concern identified was within the new

structure for special education mathematics instruction.  The teacher's comments indicated her

concern around maintaining high standards and proper pacing.

> The co teaching will be something we will see as the year goes on.  My challenge
> for that class is to see that they same at the same academic level as my other
> classes.  The special education teachers feel a need to change the pace.  We (the
> regular education teachers) feel a concern to maintain the pace (Teacher #3B).

> A teacher from School B commented about the power that NCLB has had within the area

of teacher reflection and decision making processes within the school and district.

> I think some good has come out of it. It has caused people to stop and focus. We
> have the corrective reading program now.  You are looking at who is it that really
> needs the help.  It made us stop and look at what we are doing, and are we doing
> the best that we can.  But to get that 100%, then to take money away from schools
> because they didn't hit a certain benchmark, the nightmares that will come I don't
> even want to think about it.  I will be glad to be retired (Teacher #1B).

> Respondents indicated that NCLB had also created opportunities for teachers and school

to second guess their own practices, or attempt to place blame for failure as indicated by the

following comments:

> I looked at the test results to see what kids did not pass.  I am not surprised by
> those kids they were ones that were not doing their assignments or they issues
> outside of school that they really were here but not here.  I don't know what you
> would do.  I guess somehow sit down with those specific kids and work through
> it.  But that goes against everything that they are saying about middle school.  It is
> unrealistic to think that is going to be 100%.  We are going to have kids that fail,
> and we are really lucky because statistically we are not dealing with the PSSA
> results that some places are (Teacher #2B).

4.      Strategies and Activities in Response to Competing Forces in the Middle School

The principal and teacher respondents of School B were asked to comment as to how the

concepts of middle level philosophy, academic standards, and NCLB were creating interplay

within their middle school.  Responses included the effect of the PSSA assessment and the

analysis of student scores on the curriculum and types of assessments within mathematics:

> Getting the PSSA scores…that is new.  Last year we got the breakdown, we saw
> exactly which kids did not pass and what their scores were.  It's helpful.  There is
> also a negative to it also.  You say, you look at yourself and try to say what I
> could have done.  Sometimes you know you did the best you could.  To be
> penalized that some of the kids could not make it is just unrealistic (Teacher #2B).

> PSSA assessments and the use of scores started last year.  We get a listing of the
> team and where they scored on the PSSA.  Any student that scored basic or below
> basic the school has a resource person to take all those students to provide
> additional support. My role is to look at those students that fell right above that
> that would not get her special help, and try to help them to continue to progress.
> Use team time (Teacher #3B)

> There has been a big increase in writing.  Pushing more and more to open ended
> questions.  That's the tough area.  Push the hardest on the problem solving.  That
> was the lowest area for the district (Teacher #1B).

In the area of the highly qualified teacher requirement, the response from the principal

indicated that the school district staffing decision at the 7$^{th}$ and 8$^{th}$ grade levels, however, it was

felt that the 6$^{th}$ grade organizational changes were fueled in part by the highly qualified

requirement.

> (School B) does not hire elementary certified people at 7$^{th}$ and 8$^{th}$ grade.
> Everybody there has always had to have their secondary certification in the
> particular curriculum area that they teach.  In 6$^{th}$ grade we have gone from 3
> member teams where they all taught math and English then taught 3 periods of
> reading, science, or social studies, to two 5 member teams that are content
> specialists.  That has moved us away from the middle school philosophy.   The
> district has encouraged those folks to go and get their middle school certification,
> but it is not required at this time (Principal B).

Respondents were asked to comment on the ability of the organizational structure of the

middle school to contribute to the focus on teacher accountability and student achievement

demanded by NCLB and academic standards.  Comments included:

> I wonder how a high school that has to mobilize can do it without the structure
> that we have here.  At one of the first staff meetings, we looked at the data and

talked about the 100% proficient and those kinds of things. I truly feel that if there is a place where it can be done we can do it at the middle level. We have the structure for it. We have the teaming. We have the time built into the schedule for teachers to come together. We have the content specialist that work with teachers on instruction. I think the structure that we have supports were we want to go. It is just a matter of doing the work (Principal B).

I do not know if the structure (of middle school) is the driving force of the school. It is the philosophy of the school that makes the difference. Some schools are 5/6 or 7/8 (grade levels). It is the philosophy of the school and how that carries through so children do not feel isolated and that their academic needs are taken care of. It is a combination. You cannot just tell children that they need to learn this and this is what I am going to teach you. Must build connections and provide some of the social needs (Teacher #3B).

I think the middle school does make a difference. Just the idea that you know the kids better. That you discuss them everyday. We meet as a team, and if you're trying to leave no one behind, we know who the 6 or 10 kids are we have to concentrate on. Did you call so and so's mom. Should we call the parent in? I definitely think it is a plus (Teacher #1B).

One of the teachers commented on the power of the team in combination with other support personnel to meet the students' needs.

Without the team, the guidance counselor would probably find out about problems outside of school first and would probably e-mail the team, you would just get an e-mail about it. Here the guidance counselor might send an e-mail to ask to come to the team to talk about 10 minutes about this student. You know exactly what is going on. Maybe we can't do anything about it, at least we are informed. Our guidance counselors are practically part of the team. We spend so much time with them, we feel that they are rockets too (Teacher #2B).

**CHAPTER FIVE**

**V.      DESCRIPTION OF FINDINGS FROM SCHOOL C**


**A.      DEMOGRAPHIC INFORMATION**

School C was a suburban middle school located in the North Hills area of Pittsburgh, near the northern border of Allegheny County.  Student enrollment for the 2004-2005 school year was 975 students enrolled in grades 6, 7, and 8.  Beginning in the 1990's, the school district had experienced significant increases in student enrollment largely due to many new housing developments in the area as the region had begun a transition from mainly rural farmlands to suburban community. Student enrollment within the school district for 2004-2005 was 3,715 students (grades K-12) and had increased an average of 8% per year, with an increase of 168 students for the 2004-2005 school year.

The school district was comprised of two separate townships, both consisting of mainly middle to upper middle class. Total population of both townships was 16,800 residents according to the Census 2000 Data.  The racial makeup of the community consisted of an average of 97% white, with two minorities groups of black (0.8%) and Asian (1.1%) accounting for the largest of the subgroups. The median age of the community was 37.3 years, with the largest percentage of the population ranging from 35-54 years of age.  The number of children from economically disadvantaged homes averaged only 3% from the years of 2001-2004.

School A was built in the 1970's as a traditional junior high school, consisting of a 7th, 8th and 9th grade configuration. In 1994, the district undertook a major renovation project at the middle school due to increased enrollment across the school district and deteriorating building conditions. As part of the transition process, the sixth grade was brought into the middle school while the 9th grade was moved to the high school, resulting in the creation of the full middle school concept. The existing elementary schools within the school district were subsequently restructured with the transition of the 6th grade to the middle school and the high school was reconfigured to accommodate the incoming 9th grade class.

Since the reconfiguration of School C into a grade 6, 7, 8 building, there have been two different building principals. The first principal was present when the school was a junior high school with grades 7, 8, 9. She led the transition to the current configuration, as well as managed the renovation project. The current principal had been the vice principal within the school and was promoted to the principal position upon the retirement of the previous principal in 1998.

The teaching staff of School C had undergone a significant amount of change within the past few years. The teaching staff consisted of 76 full time professional employees. Of the entire staff, 64% of the teachers have been hired since the transition to the grade 6-8 middle school in 1994. Nearly one half of the staff had been teaching less than 4 years. Only 10% of the staff had obtained more than 30 years of experience in the teaching profession. The overall experience of the staff of School C is included in Table 8.

**Table 8: Years of Experience - School C Teaching Staff**

| Years of Experience | Number of Staff Members | Percent of Staff |
|---|---|---|
| 30-36 Years | 7 | 10% |
| 25-29 Years | 6 | 8% |
| 20-24 Years | 5 | 6% |
| 15-19 Years | 5 | 6% |
| 10-14 Years | 5 | 6% |
| 5-9 Years | 17 | 22% |
| 0-4 Years | 32 | 42% |
| Total | 76 | 100% |

## B.    REVIEW OF PSSA ASSESSMENT INFORMATION

A review of School C's data generated from the Pennsylvania System of School Assessment (PSSA) mathematics assessment for the 8th grade from 2001-2004 revealed levels of student achievement significantly higher than the required proficiency level of 35% established by the state. The proficiency rate for the years 2001-2003 hovered near the 75% level without experiencing any substantial increase. Overall proficiency in mathematics increased 10% from 2003 to 2004 from 75% to 85%. In addition, results from 2004 conveyed an 18% increase in students scoring at the advanced level compared to the 2003 results. Although a sizable gain was realized in the area of advanced, similar amounts of decrease were not evident in the below basic and basic levels of achievement. Prior to the 2004 results, the percentage of students scoring at the below basic and basic levels was relatively static, indicating that the school was not able to move many of those students to a proficient level. The significant increases in the advanced level appear to have had an inverse effect on the proficient level of achievement. The overall performance of School C from 2001-2004 is summarized in Figure 11.

The results of the PSSA mathematics assessment for School C for the years immediately following the release of the No Child Left Behind Legislation in January 2002 show little net reduction in the areas of basic and below basic. It was not until the 2004 assessment were there any sizable reductions in those groups.

**Figure 11: Overall Performance School C - PSSA Mathematics 8th Grade**
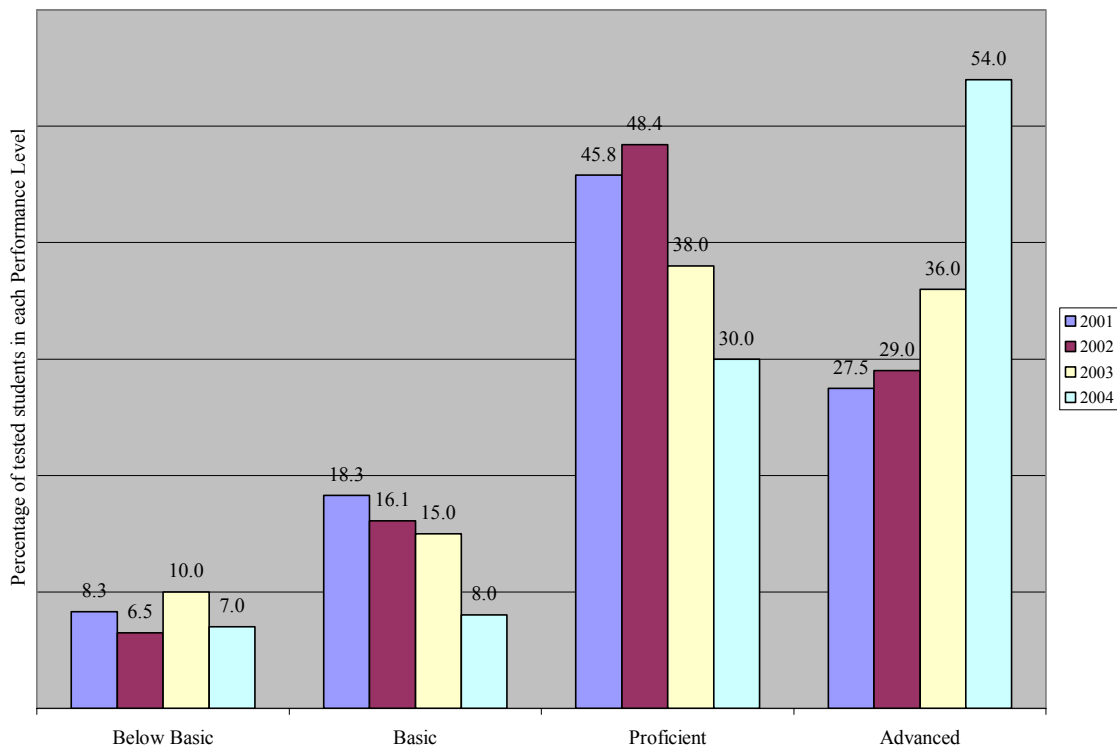


While the mathematics performance for all of the 8th grade demonstrated high levels of proficiency well above the mandated 35% for the time period of 2001-2004, not all students within School C had experience the same levels of success. The only sizable subgroup within the school consisted of special education students. The result of subgroup performance is included in Table 9.

**Table 9:  School C - Subgroup Mathematics Performance Levels**

| Subgroup | 2001 | | 2002 | | 2003 | | 2004 | |
|---|---|---|---|---|---|---|---|---|
| | # students | proficient | # students | proficient | # students | proficient | # students | proficient |
| **Students with IEP** | 25 | 24.0% | 13 | 23.0% | 21 | 24.2% | 25 | 16.0% |

An analysis of the assessment data from School C's subgroups revealed that while the overall school's performance was maintained and increased over the time period, the achievement of students with IEP's had actually regressed.  In 2001, 24% of the special education students scored at the proficient level, while in 2004, only 16% of the students were able to equal that task resulting in a decrease of 8% over the 4 year time period.  Although the number of students within the group did not meet the minimum requirements to be considered a subgroup (N=40) for AYP purposes, the achieved levels of achievement would have resulted in sanctions for the school district if the groups would have been larger.

## C.      REVEW OF EICHHORN AWARD PORTFOLIO MATERIALS

School C was awarded the Donald Eichhorn Award for Outstanding Middle School Program in March 2004.  The application process began in the Fall of 2003, approximately 9 years after the implementation of the current middle school practices and programs within the school.  The application materials were assembled into two portfolios organized to follow the ten essential elements of a true middle school as outlined by the National Middle School Association (NMSA, 1982).  A review of the portfolio materials revealed the following programming features of School C:

1. Educators Knowledgeable About and Committed to Young Adolescents

    a. Clearly articulated mission statement and vision that focused on the diverse needs of the middle school student

    b. Over 70% of the middle staff possessed their master's degree or equivalency, many with previous experience within a middle school setting.

    c. A comprehensive induction program provided for the developmental needs of a significant number of new staff members.

    d. A strong sense of family and togetherness among the students, staff and administration.

    e. School C hosted the 2005 regional middle school conference, promoting the organization's commitment to the education of the middle level child.

2. A Balanced Curriculum Based on the Needs of Young Adolescents

    a. A curriculum based on general guidelines and standards to meet the diverse needs of middle level learners and maintain a high level of expectations for faculty and students.

    b. Courses in foreign language include an exploratory course in 6th grade, target course in 7th grade, and deeper exploration into a specific language within the 8th grade.

    c. A strong core curriculum mixed with exploratory opportunities for students within the area of music, unified arts, and physical education.

    d. The use of comprehensive assessments, including the use of alternative assessments such as portfolios and rubrics.

e.  Special education opportunities in the area of life skills, learning support, emotional support, and gifted education.

f.  Work study/career education experiences within the school building for life skills students.

3.  A Range of Organizational Arrangements are Incorporated into the Schedule

a.  Interdisciplinary teaming was utilized in all grade levels so that teachers share the same children and utilize a common planning time.  Examples included a unit on Kennywood and the Iditarod.

b.  Flexible master schedule was created to include multiple blocks of time for teams to manipulate to facilitate student learning.

c.  Teacher collaboration was evidenced across the teams, grade levels and departments.

d.  The curriculum was predominantly organized to support heterogeneous grouping of children to present enrichment activities to all children, regardless of ability levels.  Mathematics was the only "tracked" class, with the course being scheduled off team based on student mathematics aptitude.

4.  Varied Instructional Strategies

a.  Flexible grouping strategies were evident in several interdisciplinary projects

b.  Cooperative learning opportunities and hands-on activities were integrated into all academic areas.

c.  Technology was utilized as an effective instructional strategy.

d.  Assessments used incorporated aspects of differentiated instruction (rubrics, projects, writing across the curriculum).

5.    A Full Exploratory Program

a.    An academic exploratory program consisted of a foreign language course at each grade level.

b.    Vocational exploratory opportunities were available through the unified arts program in all grade levels

c.    Several clubs and activities, interscholastic sports for boys and girls, and intramurals encompassed the recreational aspect of the exploratory program

d.    After school clubs, student organizations, and activities supported the academic, vocational, and recreational aspects of the exploratory program.

e.    The exploratory program emphasized aspects from an academic nature to community service requirements.

6.    Comprehensive Advising and Counseling

a.    A daily homebase advisory program focused on the personal, social, educational and career development needs of middle level children.

b.    A guidance department consisting of two counselors as part of a district K-12 guidance program.  The middle school guidance counselors are trained to address the unique needs of middle school students

c.    A student assistance team (SAT) that meets weekly to identify at-risk children and plan intervention strategies

d.    Several programs that recognize and reinforce high academic achieving children

e.    Emphasis on a sequential program that moves from instruction to prevention to intervention to consultation.

7.  Continuous Progress for Students

    a.  Communication of student evaluation through the use of progress reports, report cards and student-led conferences

    b.  Student created record sheets for recording self-evaluation and reflection of progress and growth.

    c.  The use of multiple teaching strategies to address differences in learning styles

    d.  Enrichment opportunities within mathematics at the $8^{th}$ grade level (Honors Geometry)

    e.  Acceleration and remedial programs to support student academic needs

8.  Evaluation Procedures Compatible with the Nature of Young Adolescents

    a.  Assessment tools included a wide variety of measurements which accurately reflected student learning and ensured team consistency

    b.  Integration of standardized assessments (Stanford, PSSA) based on academic standards and used for constructing meaning for teaching and instruction.

    c.  Extensive use of rubrics that are curriculum based and connected to instruction.

    d.  District sponsored workshops to provide in service training on various standardized assessments

9.  Cooperative Planning

    a.  Open and efficient communication among team members.

    b.  Interdisciplinary Unit planning and implementation at each grade level

    c.  Daily common planning time utilized for team meetings and parent conferences

    d.  Curriculum development committees and renewal committees to focus on writing and revising curriculum on a continual basis.

e.  Strong parent involvement/communication through the parent teacher conferences, parent portfolio, and on line grade reporting.

f.  Use of student agendas and school wide calendars to promote consistency and communication.

10. Positive School Climate

a.  Programs used to recognize students for positive contributions to the school and community (i.e. Recognition Day for 8th grade).

b.  Clearly communicated and enforced student management plan and school district policies

c.  Open House program to share school activities with parents.

d.  Neatly decorated hallways, classrooms and common spaces that convey a sense of caring and warmth within the school.

e.  Strong extra-curricular program that provides for diverse needs of students.

f.  An emphasis by the school administration to be visible within the school and classroom for the benefit of the teachers and children.

g.  An established school emergency/crisis plan that was communicated to all staff.

The principal of School C emphasized the importance of the process of creating the application materials as a chance to reflect upon the work completed by a school on behalf of middle level children. She was an energetic person that relied heavily on the administrative team and staff to create the best program for children. She led by example, often modeling the desired behavior or outcome for teachers and students. The principal commented about the great pride that she and teachers had taken in preparing the nomination portfolios.

## D.    PRINCIPAL AND TEACHER INTERVIEW DATA

During the principal and teacher interview sessions at School C, participants were asked to provide commentary regarding the three focus areas of the study: middle level philosophy, academic standards education, and the No Child Left Behind Act of 2001, and the impact of each area on the structure and programs present within the school.  One mathematics teacher was chosen from each grade level in School C (grades 6, 7, 8).  As an additional requirement, the teachers were required to have at least 4 years experience so that comparisons could be made between educational practices evident within public schools both prior to the passage of NCLB and since its adoption.

The current principal of School C had been with the school district a total of eleven years.  She had been the principal of School C for seven years, 1998 to present.  Prior to becoming the principal, she had served as the vice principal of School C during the transition to the middle school in 1994.  Before coming to School C, she served as a teacher and administrator within the Pittsburgh Public School District.  The Donald Eichhorn application materials were prepared under her guidance in the fall of 2003.  Her certifications included a bachelor's of science degree in elementary education, master's of education in reading specialist, and a doctorial degree in administration and policy studies.  She held a principal certification for grade levels K-12 and had her superintendent's letter of eligibility.

Teacher #1C had been with School C for four years.  Prior to coming to School C, he worked four additional years also in another middle school.  He was currently teaching three separate levels of seventh grade mathematics.  He was part of an interdisciplinary team within

the seventh grade. His teaching certifications included secondary mathematics and elementary education. He also possessed a master's degree in instructional technology.

Teacher #2C was a sixth grade math teacher also certified in elementary education and secondary mathematics. Teaching experience included seven years total with four years at School C. He was also part of an interdisciplinary team within the sixth grade.

Teacher #3C was an eighth grade mathematics teacher. She possessed a bachelor's of science in mathematics with a master's of arts in teaching. She had been with the school district for her entire career, spending some time moving from the middle school to high school during the early years. The last 26 years had been spent with School C. She had been part of the renovation process and transition from the junior high to the middle school.

1. Influence of Middle School Philosophy

a. Middle Level Concept - Respondents from School C presented the ability of the middle level philosophy concept to ease the transition from the elementary grades to high school:

> The purpose of middle level education is to absolutely give them (the students) a foundation to be successful in high school. To try to develop the well rounded child, socially, emotionally, and certainly academically. One of the major components is to make them more independent than they were in elementary school. To provide an atmosphere that gives them success at this level. To give them as many experiences as possible so that they can choose to see what they like and what they dislike. But to definitely prepare them for high school. To send them out with the confidence and success so that they can make some wise choices in high school and be successful socially and academically (Principal C).

> You see a drastic change going from $6^{th}$ grade to $8^{th}$ grade this is the first secondary experience for these kids. I think you can really cut kids off at the pass when you get them early like this (Teacher #1C).

> Being a $6^{th}$ grade teacher, I also have to focus on the issue of transition, but from the elementary setting where they had teams of two teachers to now having four teachers plus having the unified arts. So it is really about 8 teachers they have during the day. So with that transition I have to deal with the crying or emotional

143

part that the building is too big or that their locker is jammed and they have never had a locker. Different teachers and a schedule. Coordinating the tests so that we are not putting all this on the student but that there is a transition. Working with the team to address the social part when kids come to us from the different schools in the district and parochial schools. The challenge is the educational part of maintaining the curriculum and keeping everything going, to understand what they are still going through, and accountability so as they move from my class up to (8th grade) (Teacher #2C).

The seventh and eighth grade teachers discussed the ability of the middle school to meet

the diverse needs of the middle school child in a way that the segmented structure of the junior

high school was unable to do:

What makes the school so special is that a middle school has the ability to coddle kids a little, a warmth. There is an overall mentality of coddle the kids a little. When you get to the high school, you move away from that. It doesn't get chilly but a little cooler than that. With kids moving from class to class to class, you lose some of the accountability. Kids can fall through the cracks that way (Teacher #1C).

When I was this age I had the junior high concept which was basically just another school and another level and you didn't have that comrade and family atmosphere that you have now (Teacher #1C).

I think that caring about not just that academic part but all of those other things that they need. Those physical needs. The social needs particularly at this level and the changes that they are going through. The emotions that they are not sure what they mean. I think that is a key part of what we do. We need to keep all of those pieces in mind and yet balance that with a strong academic background. Particularly in the 8th grade, since I have the algebra in the 8th grade, you are really talking about a high school course. My main focus is that academic part. Not just for arithmetic, but I have an obligation to build a strong foundation. I also have to worry about the child crying at home at night because they do not understand or if their friend is mad at them. I have to be able to consider that and yet not to accept excuses. I have to help them move toward being mature enough to handle these things. We really begin to expect more and more as they move along. There is really a focus on the transition as they move to the high school (Teacher #3C).

b.      Programs - When asked to present the middle level programs that have had the most

impact on the school, the principal and seventh grade teacher presented the power of the

interdisciplinary team to support the child through all aspects of the school day.

> Teaming was the first thing that came to mind.  The absolute advantage of the
> middle school is to provide that team support where everyone works together as a
> team to provide what children need, emotionally, socially and especially
> academically.  There is no better safety net for a young person than the teaming
> concept.  I have read things where high schools are looking for the teaming
> concept especially for incoming ninth grade students depending on the situation
> because of the strength of the team to benefit the child (Principal C).

> The teaming structure is huge.  At the high school, with a different 150 kids that
> you have, you may see a behavior and say, oh Johnny will be fine, someone in
> period 2 will take care of it.  It splits the ownership of certain things between the
> kids and the teacher.   If I see something going on with Johnny period 1, I can call
> my team together and there are 5 other teachers there who have him and the
> people that surround themselves with him, his buddies, and his friends.  We can
> talk about things on a team level.  At the junior high school or high school,
> conducting that kind of inquiry about a kid could take me all afternoon.  I just
> don't have that.  It doesn't facilitate anyone in helping a kid out like that (Teacher
> #1C).

Another important feature of the middle school was to provide multiple exploratory

opportunities for children.  School C had accomplished that goal by providing social and athletic

activities for children through interscholastic sports, clubs and activities as noted by the principal

and seventh grade teacher:

> Clubs and activities we are very proud of.  Socially at this age level, you want to
> teach them appropriate behavior, friends and peers are important, so we like to
> provide for them many opportunities besides athletics in the way of clubs and
> activities (Principal C).

> Tons of after school clubs and organizations.  Not just the standard ones. But
> other ones that really have a niche of students. We have rocketry club.  We have
> these kids in rocketry club that are 85 pounds soaking wet, wouldn't be involved
> in anything except the rocketry club.  It is neat to watch it happen.  They can then
> be here on Fridays for spirit days and wear their (school district) shirts and be
> proud of something (Teacher #1C).

c.      Professional Development - School C had 42% of the teachers with less than 4 years of experience, indicating a high degree of need for in-service opportunities.   According to the respondents, the most meaningful training had been the daily interaction between teachers within the school and participation in local organizations that promote middle schools.

> Team planning time occurs three days per week.  I have them keep a binder with an agenda.  What is it you are talking about, how is this going to affect student achievement?  How is this going to affect and improve how students perform.  Are there teachers on staff that have particular strategies that they can share with other teachers. We encourage that.   We encourage a lot of middle level involvement with area and regional conferences.  We are hosting one here this year.  My true belief that the best learning situation for myself and my staff is networking.  Having a strong network of colleagues both inside the building to talk about teaming and what works, as well as visiting other schools, having people come in specifically toward the middle school so to teach what you should expect from an 11-13 year old (Principal C).

> I think the best thing is networking.  Bringing those people to your school.  Sending people out the mini conference when you can that are specifically designed for middle level.  I mean regular conferences are great but I think when you have the middle school focused one; there is nothing more valuable than that (Principal C).

> Some training here and there but our team leaders lead by example.  There have been trainings.  This district has done a really good job at picking the right people to be in charge of teams.  Nothing formal.  Really just informal, leading by example.  That is what this district does really well (Teacher #1C).

Both the sixth grade and eighth grade teachers cited their work at the university level in principal certification as the main place they have learned about the middle school.   One of the teacher respondents and the principal replied about the ability to hire quality teachers that already possess middle level knowledge gleaned from other experiences or from the preparatory programs.

> Teachers have been hired with that middle school focus in mind.  Teachers have wanted to be here and we have traditionally been the best school in the district because of that.  There was a time when many of us had to go back and forth between the high school and the middle school.  I always knew where I wanted to

be. I liked the kids here and I think that is a big reason why we have such a nice school. The teachers here really like this age group (Teacher #2C).

There are certain things you look for like attitude, personality for the middle school. We are hiring people that are consistent with our attitude. That is who we are looking for. That is who we are going after. That is who we are hiring. The well is pretty full. There are a lot of people that are out there (Principal C).

d.      Impact of Middle Level Philosophy - The middle school philosophy had a dramatic influence and impact on the program and structure of School C as noted above and as evidenced in the beliefs of the principal as to the role of the middle school in the K-12 system of education.

I think the middle school concept is the one true concept of educating the entire child. I firmly believe that. I have always believed that (Principal C).

Middle school is just the critical piece of the puzzle. I am saying that just because I am here. I know k-3 and that first experience is important, and the high school too, but this is where you either make or break a kid. This is where their attitudes form. Where their likes and dislikes form. This is where you nudge them in a direction they are definitely going to go. Just like the middle kid (Principal C).

One of the impacts of the middle level programming within School C has been the decision to move mathematics off-team as to promote heterogeneity across the teams. Mathematics in $7^{th}$ and $8^{th}$ grade continued to be tracked courses.

Math is off team so we do not have to worry when other people are testing. We certainly don't want them taking four tests on the same day so we try to be understanding, but next year when they move to the ninth grade, they may end up with four tests on the same day (Teacher #3C).

Math is tracked so it is off team as to not create like the algebra team. If all of those kids are on one team that kind of lop sides your school (Teacher #1C).

e.      Issues, Obstacles, Successes - One of the issues presented to School C had been the financial costs of operating a middle school. NCLB and the increased need for student achievement had increased the demand for scare financial resources. This pressure had been felt by the school district and principal.

The pressures are on but it is getting expensive to operate a middle school. You need more staff to do that. If you have a content or junior high, you do not need as many staff as you do to put together a team. It is becoming a challenge schedule wise and staff wise. People do not want to commit to that anymore. It is much cheaper to operate a junior high than a middle school. I think that people that are not middle school people do not understand the middle school and what it takes to make that successful and how wonderful that is for kids. We do not turn out kids here that do well by magic. There is a lot of blood, sweat and tears that go into that. A lot of planning and a lot of insight (Principal C).

The transition to the middle school created some issues for the staff of School C. It took

some time until teachers found their correct placement, and in some cases, the proper fit was not

at School C.

There are a lot of people that are out there. I have met good people, they are just not good people for the middle school. I have had that conversation with staff. The old have kind of moved on. They are heart wrenching conversations. Telling them maybe they are better fit for 11th grade. You are not cutting it here. You are miserable, you are making us miserable (Principal C).

The seventh grade teacher addressed the need of the middle school to go beyond the

directives of mandates in order to teach the child a love of learning.

I would not say that there are problems because we are a middle school. I think being a middle school actually eases some of the problems. I think that a middle school with what it does, you may not use your time as efficiently as a high might do. Because the middle school idea does more than that mandate there is going to be some problems because I am not going to get as far. The high school teachers might want us to get to chapter 13, which is impossible with the way I teach now and the diversity in the classroom. I may get to 11 or 12. That in itself is not really a roadblock, it slows you down a little bit. On the other hand, I do not think it is wrong with that. There is plenty of time to learn and it is a 12 year process. Even if we get to chapter? What is the difference if now the kid hates school (Teacher #1C).

The sixth grade teacher presented a contrary point of view that the middle school student

often struggles to maintain the academic focus due to the large number of other activities present.

I think a problem that you can have when you think about all of the extra activities that you want for students is to help them never lose sight of the academics. The sponsors of activities are always very careful to remind students that their first responsibility is to their class. I think the part in which you have

difficulty is when you start to lose sight of the academic part because of the activities (Teacher #2C).

2.      Influence of Educational Standards

a.      Concept of Standards - Respondents from School C commented on their understanding of

educational standards and their use within the classroom.

> I like standards and I like outcomes because it is a commonality.  It gives a commonality of what we are expecting at certain grade levels.  There is a place for standards.  You do need to have a commonality of what kids need to know and when they need to know it (Principal C).

> Standards are meant for both the teacher and the student.  It is my responsibility to get them to that standard and their responsibility to achieve that standard with my help and their parents help, and their peers help depending on the lesson that I am doing.  It is definitely for both of us (Teacher #1C).

The eighth grade teacher presented her concerns in regard to the real use of standards.

She stated that her teaching had not been impacted significantly due to the standards.

> We are integrating them into our lesson plans to show that we are using them. This is our first year to apply the standards and the benchmarks, but they do keep changing.  It seems as if they just keep revising what they already had.  I really haven't changed anything because you are always changing what you are teaching and how the students are learning based on the kids needs that year.  So it is just maybe presenting it a different way or flexible grouping to make sure the child understands the work (Teacher #3C).

> To be honest I have been here so long it really has not changed things.  We know what a students needs at that level.  We have always had achievement tests.  Their progress is not something that has happened in one year.  It is really the background from 1$^{st}$ grade to 8$^{th}$ grade.  I tell my kids, it is not what we have done this year, it is what you have done in 8 grades (Teacher #3C).

b.      Professional Development - Opportunities for professional development in the area of

standards had been much like what had occurred for middle school topics.  School C utilized a

blend of programs with time for teachers to simply work together and share strategies and ideas

for implementation of standards.

> All in-service days are devoted in some way to standards. This year in particular our district focus is on meeting the individual needs of kids. We have an academic administrative team and before every administrative meeting we have a book discussion at Panera's. This year's book is about differentiated instruction. Each team member takes a chapter and we sit around with coffee and talk about it. The point of that is that as an administrative team we talk about it and it trickles down to the staff. When you have staff meetings, you talk about the strategies that you have read about. We are gearing our in-services toward that and trying to provide opportunities for staff to go to workshops or seminars. I am a big proponent of what I get I filter right to them (Principal C).

> I think your best resources are right here, teachers talking to other teachers about what they are doing what they have read and what they are doing. We have flex time here. Teachers need 12 hours of flex time beyond their full days of professional development. It is not negotiable. We offer some of that and other they have to find themselves (Principal C).

> Most professional development topics they vary. Respond to student and curriculum needs. Special education. Standards. NCTM. School and local standards. They really vary depending on what the school and administration deem to be important. We even had one on HIPPA. Anything that feels pertinent (Teacher #1C).

The seventh grade teacher related his experience with professional development

opportunities in standards and mathematics at School C to his time with another district.

> There has not been much math training here. Had much training in the city but I taught with an alternative textbook it was called connected math. You need a lot of training with a book like that it was so different. But with this school district and the standard text we use here, math is math. It has been the same way for 10,000 years. Our time is used for applying the standards. I think they (building administration) are trying to make them something other than just a piece of paper with a bunch of funny words on them that teachers are supposed to know what they are talking about. They do a good job of that. They really do (Teacher #1C).

c.     Impact of Standards - The principal of School C commented on the impact of standards

on her role as observer and evaluator within the school.

How are we handling it, we really look at lesson plans now and my staff knows that. It is no longer just these little blocks. We want a little more details where they tell me the standard. What is in the curriculum? How are you matching the standard with the instruction? How are you aligning that? When I come to see that science lesson, what are you teaching today, how is that curriculum aligned with the standards. I want to see that in the lesson plans and certainly when I go into the classrooms I want to be able see that when I come in, because if I am not able to see it, then the kids are not able to see it. When I go into the classroom I want to see that in the lesson when I observe it, in a lesson plan, I want to see that in the objective that they have written on the board so that it is clear for kids. Letting kids know that this is what we are working on – an objective / standard and that it is aligned with the curriculum. This is what you need to know in seventh grade life science today. I think articulating that to kids is important. Kids want to know why we are learning this. Articulating that reinforces it with the teacher and lets the kids and parents know. I think you need to see it written lesson plans and evidence in the instruction (Principal C).

One of the teacher respondents commented on the extent of which students should be exposed to the standards within the classroom. They presented the notion of converting the standard to language the child would understand in order to guide instruction.

It is funny, I think they were not meant to just guide you, or tell you what you should be teaching, or what text to be using and what colleges are expecting. I think there was this idea that kids understand the standards and it should enhance their learning. Kids could say ok, this is what I am supposed to be learning today. Different schools encourage you to use the standards in your lesson plan. Inform the kids of the standards. I am not sure that is always the best idea to have. You reword it. I think if you tell kids that today the specific anchor might be, the student will be able to use statistics to prove whatever, that is going to be like a foreign language to a kid. If instead you say today we are going to use data to establish whatever, and then go from there. You should be able to use the standard or the anchor as a guide to steer your instruction instead of this thing that is used for name only. Should not focus on the actual standard and what it is. But verbalize the concept behind the standard and use that to guide the direction (Teacher #1C).

The same teacher respondent commented on the positive aspect of standards to align instruction across districts and locations and their effect on the textbooks themselves.

I can say that the classes are different, the kids are different, and the teachers are different, but basically I can say that what I taught in the city is what I am teaching now. There are some variations due to the community. But things are in general flowing in the same way. I think that is attributed to the standards. I can

use those standards to get my kids in the right direction. The kids need to be taught, they need to know what standards are too. It is what they need to be achieving. But it is more of an aid for me (Teacher #1C).

People are picking books and companies are making books that are aligned in the standards. The text books do a really good job at addressing the standards. As a rule, I am really happy with the way the books are now. They have enough information and focus the lesson in the book on NCTM or whatever it happens to be. You always have to add other stuff, today I am doing exponents and properties of exponents and the power of zero isn't listed where I think it should be so I will plug it in there (Teacher #1C).

One of the respondents believed that teachers, as professionals, knew what needed to be

taught within a course and minimized the importance of standards within the curriculum.

I do not know that the standards have helped to align the curriculum, but we were taught as a group to be sure that how we are covering materials is the same. Things as simple as the equations going horizontally or vertically. When you are teaching it both ways, in particularly the lower students have difficulty with it. So we try to keep those things similar so when new people come in we are consistent. Certainly we are all different people and are not doing the same problems everyday but the approach to pieces like that we feel all have to be consistent. I do not think that has anything to do with the standards. That is just what we feel is best for students (Teacher #2C).

d.      Issues, Obstacles, Successes - Two of the respondents commented on the positive aspects

of standards in their ability to streamline instruction and help ensure continuity across larger

school systems.

Standards give me a tool as an administrator to cut to the chase. I think I operate best when I know what is expected of me. That is what the staff does and it is what kids do. It is clear and clean, whether you agree with it or not. If you look at the standards, it is not anything that is new. It is what we are expecting kids to know at every level and is putting it in a common language (Principal C).

Are giving common finals and things like that. But continuity is easy to obtain across a small school like this. I think standards have done more for bigger school districts that have 2 or 3 middle schools, where you have schools in which teachers cannot come down the hall and say Hey what are you doing today (Teacher #1C).

The seventh grade teacher expressed concern over the practice of using standards to evaluate teacher effectiveness absent of other factors that influence learning.

> This doesn't happen around here, but standards can be used as a sort of informal assessment of a teacher. That is a bad use of a very good thing. You cannot simply say that Joe Schmo's kids are failing so kick him out. There are just so many factors to it. There is someone stamping down a widget to make a television, you cannot do that with a kid. Kids are different (Teacher #1C).

3.      Influence of No Child Left Behind

a.      Basic Understanding - Each of the respondent's comments about NCLB from School C felt that the basic premise behind the legislation was good. The principal of School C commented on how NCLB related to what good educators were already doing in the classroom. Her concern addressed the lack of resources associated with the NCLB legislation even though schools were expected to do more for children.

> I do not have a problem with No Child Left Behind. We are doing it anyway, now they have just made it a law. Any good educator is doing it and not leaving children behind. And now they have put parameters on it and they have not given us any resources. And they have not told us how to do this. What if kids are not proficient, what are you going to do? You just better get them up there. That is the problem that I have. Making it a forceful thing, not that you do not do it, but just not providing the resources to do it (Principal C).

> NCLB is taking a very good idea and twisting it into something ugly and counterproductive (Teacher #2C).

The seventh grade teacher expressed his concern over the lack of realistic goals within the NCLB legislation.

> I think in theory, and I have seen NCLB in its later stages, and in a different form in Florida, but the paper work is appalling. The realistic goals are unrealistic. In theory NCLB is a wonderful thing. Look at the naming of it. Of course you want no child to be left behind. You want every child to succeed. To provide the best learning environment for every kid. Some of things that they are talking about are not bad ideas. Looking at a school for adequate yearly progress. That is not a bad idea, it really isn't. Some of the factors that go into that are just a theory. They

are not a practicality. If you could put a school on a waiting list because of attendance is not 90%, well there is some validity to that. You need kids in school to learn and you need kids in school to make a better society. But on the other hand you cannot have this black and white line drawn down the middle and if you cross over that 90 some % or whatever it is then red flags start coming up (Teacher #1C).

Student school choice was also viewed as a basically good idea. This teacher respondent questioned the impact of school choice on the achievement of a school that may receive a large number of underperforming students.

Another example is children's ability to shift schools if the school they are at is not making adequate yearly progress is a wonderful thing. I think that if your in a school that underperforms all of the time, the opportunity to leave and go to a better performing school in and of itself is a good idea, however, you a now taking money away from that underperforming school and your putting a potentially underperforming student in that school. What happens when you have this school that is making it work with 500 kids and it now has 600 kids? (Teacher #1C).

b.      Professional Development - The teachers reported the level of professional development devoted to NCLB as minimal. They have been informed of the details of the legislation as it pertains to the school district but it did not appear to be a critical issue to them.

There are in-service days here and there. Just kind of giving a heads up of what is coming down the road. They keep us aware of what we need to do. They do not leave you in the dark (Teacher #1C).

NCLB has not been a major focus at the district level. It is not like we have had everyone in the auditorium. It has been a building level thing where Dr. H has addressed the concerns and the guidance department has done some in-service and workshops on it to bring it up to date and the data driven materials that we do have. We probably focus on it every other year so we can get the new teachers, but it is constantly rotated (Teacher #2C).

Most of my learning goes back to graduate work when (NCLB) was implemented. We have in-service time in large groups and have had it presented, but we really have not been in small groups within the school and talked about it (Teacher #3C).

c.      Impact of NCLB - The NCLB legislation, while impacting professional development in a

minimal way, had begun to make several impacts within the school and programs.  Analysis of

standardized test data had begun to impact instruction.

> Academically – we are analyzing test data and looking at it to drive instruction. What is it that our kids know and what is it that they need to know?  Not just because it is a high stakes testing situation, just because it is what we need to know.   We need to know what it is that kids need to know in order to be successful and what that is at each grade level as they move on into the high school (Principal C).

> Analyzed the compartments with in the math curriculum in which kids are doing badly and addressed them through several possibilities like Homeroom.Com. And things like that (Teacher #1C).

> We are also working out with our test scores and that has really just started to apply to students that qualify and get them connected with the programs.  For the extreme low level, we have a pull out math program group in the sixth grade so we do have students that have to work on skills at the third grade level and they could not handle being in the sixth grade classroom.  We are able to have them work on a slightly different sixth grade text book to have them work on those skills to have them brought slowly up to grade level.  That has helped.  After having that pullout year in sixth grade, hopefully for seventh grade they can go back into the classroom.  They are regular education students that instead of going to the regular math class, they attend this support math class for the year (Teacher #2C).

Additional programs had been instituted to address non-proficient children.   A

computerized tutorial program had recently been added.

> Tutorial services that we have for children have increased.  How are we helping them in the focus areas?  So that can perform proficiently on test levels (Principal C).

> Not enough time to talk about it and not enough resources.  How can you make this a law and cut money and programs?  They want us to provide this tutorial service (Homeroom.com) that doesn't come cheap or easy.  We are trying to look at their current level and try to nudge them forward.  We are taking the 35% and below and working with those students (Principal C).

A reading program was returning to the middle school for non-proficient students.  The

foreign language elective had been eliminated for those children.

155

As a former reading teacher, I am really worried about reading. There are some middle schools that do not offer reading classes. I am bringing it back. Our kids are doing foreign language instead of reading. Just like anything else, you need to practice reading and kids are not doing it. If kids are proficient they are able to take foreign language, if they are not proficient they have to take the reading class. The students performance on the test is starting to affect the type of classes they are able to take (Principal C).

The principal commented on the impact of the need for increased student achievement on

the administration of the school.

We are very visible as an office team. We are in classrooms for formal observations, abbreviated observations and learning walks. We walk into classroom and not only look at instruction and talk to teachers about it and also ask kids about it. "What does good work look like?" How do know that you are doing a good job. Where is it that you need help? We do a lot of talking to kids and going into the classroom (Principal C).

The NCLB also had an indirect effect on hiring practices due to the requirements of

having a highly qualified teacher in every classroom. The principal commented on the effects on

staff within School C.

All of my teachers at the 7th and 8th grade level have their secondary certification or are dual certified. Some of my 6th grade teachers are also dual certified. I had everyone pretty well placed but had a handful that took the test for the middle school. Hiring over the past few years, not only did we know that was coming down the road that was our philosophy anyhow. 7th and 8th grade definitely needs a secondary certification. K-8 is way gone. When I first came here, I loved elementary teachers, they were more flexible. But we started going down that road years ago and since most of our teachers are new hires everyone is where they need to be. Anyone who wasn't went and got middle school certification. Even before the highly qualified aspect, in an area like this the school was highly scrutinized and has a very active parental community, who you hire and their background experience, having a k-8 certificate teaching algebra and now geometry would not work and rightfully so (Principal C).

One of the teacher respondents commented on the school's overall resistance to change

as related to NCLB and its impact on instruction.

Aside from paperwork, NCLB has not affected my instruction. Things like have to list standards and things like that. Maybe a meeting here and there. It hasn't really affected my teaching in the classroom. I mean not profoundly. I do not

think anything over the past 100 years, whether it was the open classroom idea, or whatever, has really impacted the actual art of teaching all that much. You could plug someone from 1920 into my classroom and if you teach them how to use a handheld, they would be fine (Teacher #1C).

d.    Issues, Obstacles, Successes - The principal of School C commented about the intense pressures the NCLB legislation has placed on schools and their staffs. Her comments also focused on the punitive nature of the act.

NCLB - certainly it is a wonderful concept. It is way political. We all know that. It is what good educators were doing anyway. I think it has really tied our hands more. It has put the pressure on and caused a lot of extra stress for what you were doing already. Now it is a mandate. It has not provided you with the resources and put a hammer to you. I see it as not how can I help you but you better. And if you don't here is what is going to happen. Who is going to argue with the concept? (Principal C).

This teacher felt that one of the issues with NCLB was its intense focus on strictly academics and the monitoring of that progress without looking at the other aspects of educating children.

On the other hand, NCLB is strictly academics, who cares if people are actually getting along. Or if kids are playing sports and feeling good about themselves. That is not the federal mandate (Teacher #1C).

4.    Strategies and Activities in Response to Competing Forces in the Middle School

Examining the results of the PSSA assessments had become much more important within School C since the introduction of No Child Left Behind. The principal and two teacher respondents commented on the impact the PSSA test has had and how the results were used.

One of low points on the test was statistics so we are trying to get our staff some strategies to implement in the classroom so we can improve in that area (Principal C).

The results do not get to us until the end of September. They are held at the elementary at the beginning of school. They are going into their files now. We have team planning every other day and have gone into those files for data to

make decisions. We have looked for everything from how they have achieved on PSSA to their grades in the classroom, alternative assessments, enrichment, and others (Teacher #2C).

PSSA test scores. We use the test scores to refine what we are doing in class and make sure we are hitting the points we need to hit. Probability always comes back bad. It always seems to get missed in the math curriculum. We know we need to focus on that a little better. Writing, we try to have writing exercises all the time across the curriculum. They use the results. It is more of a reactionary approach than of a precaution. If it comes back and you have bad tests scores in this then you have to address that (Teacher #1C).

One of the strategies recently put into place to address the pressures of subgroup performance had been co-teaching mathematics with the special education and regular education teacher in the same room. This teacher offered his perspective on the early success of the structure.

Every year here I have taught special education or support math. I team teach with the special education teacher in the classroom. The pressure is on to increase test scores for retention and comprehension. The amount of support of how we do it has worked very well. She has jumped in and given two perspectives going on in the classroom that I guarantee will reach those kids. The special education teacher I am working with is phenomenal. The person I work with really makes a difference. She is great to work with (Teacher #2C).

One of the most evident aspects of the NCLB act has been its impact on accountability in schools. A teacher responded in regard to the effects of the need for accountability on the principal and thus the teachers in the school.

I think everything is really coming down from administration. I think Dr. H runs the building very efficiently. She is constantly visible. Whatever we need, she is the first one to go to bat for us. As long as we can prove that we need it. As well as we can prove it will benefit the students. The trickle down theory has to start with the effective building leader and that is one thing that I can say is really in place here (Teacher #2C).

# CHAPTER SIX

## VI.    SUMMARY, CONCLUSIONS AND IMPLICATIONS FOR POLICY AND PRACTICE
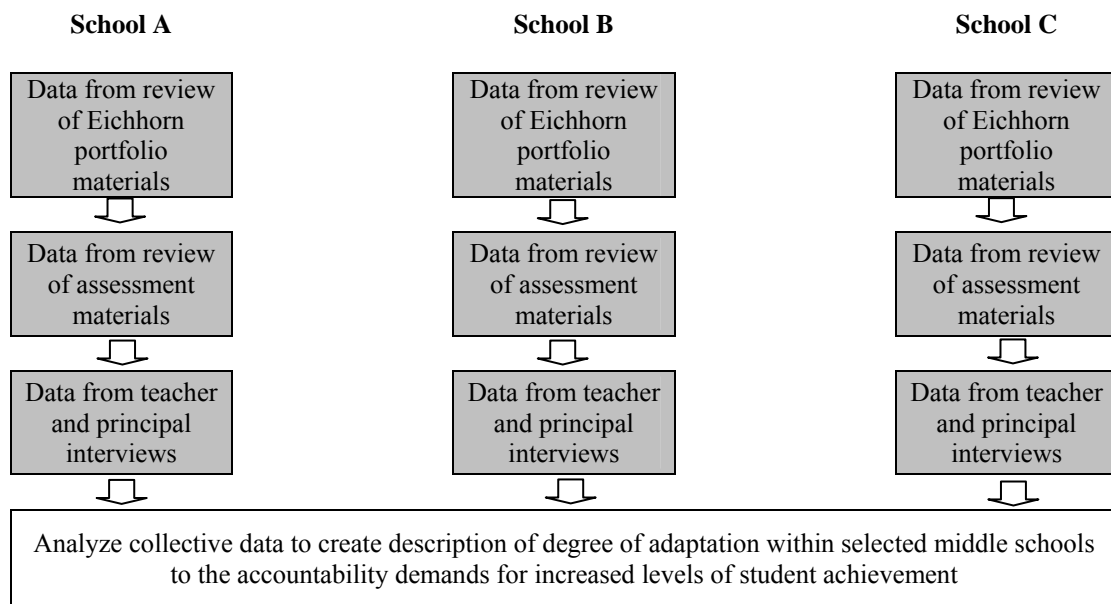
### A.    SUMMARY

The goal of this study was to explore current factors that have influenced middle level education and the extent of their impact within the middle school.  Factors explored were middle level philosophy, standards based curriculum, and the No Child Left Behind Act of 2001.

Middle schools were selected for this study was based on their ability to implement programs consistent with the original ten essential elements of a true middle school as identified by the National Middle School Association (NMSA).  For the purpose of this study, it was important to determine the extent of which the middle level philosophy was in place in each of the school settings.  Use of the essential elements provided the researcher a common reference point from which to match the actual implementation of programs in schools to the elements within the model program.

The three specific middle schools used in the study had been recognized as exemplary programs for their implementation of programming consistent with the essential elements of a middle school.  All of the schools were large, suburban schools located in Allegheny County, in Southwestern Pennsylvania.  Student population ranged from approximately 750-1000 students in grades 6-8.

Data collection was conducted in all schools during the months of September and October, 2004. A full day site visit occurred that consisted of interviews with the school principal and mathematics teachers, review of Eichhorn materials, and analysis of standardized assessment data. Collection and analysis of data from each school site occurred independent of the other sites. A review of the procedures that were followed is outlined in Figure 12.

**Figure 12: Review of Procedures for Collection of Information**

| School A | School B | School C |
|:---:|:---:|:---:|
| Data from review of Eichhorn portfolio materials | Data from review of Eichhorn portfolio materials | Data from review of Eichhorn portfolio materials |
| Data from review of assessment materials | Data from review of assessment materials | Data from review of assessment materials |
| Data from teacher and principal interviews | Data from teacher and principal interviews | Data from teacher and principal interviews |

Analyze collective data to create description of degree of adaptation within selected middle schools to the accountability demands for increased levels of student achievement

## B. CONCLUSIONS

1. Purpose of the Study

The purpose of this study was to describe the dilemma facing selected middle schools as they attempted to meet the current accountability demands for increased student achievement within mathematics while maintaining their focus toward a middle school program that was responsive to the developmental needs of adolescents.

160

Each of the middle schools had a strong middle level program in place. Many of the essential elements of middle schools were documented through the portfolio review and observed during the site visitation. The teachers and principals of each school embraced the middle school structure as beneficial in supporting the needs of children at a unique time of their lives. The strongest element present within each school was the interdisciplinary teaming structure. Teachers at each of the schools commented on the power of the team to address the multitude of issues children at the middle school present. Principals valued the ability of the team to break a large school into manageable units that provide safety nets for children. Although the structure of the team in some instances had evolved over time, the interdisciplinary team remained the core component of the middle school and was the most important reason for the school's success.

The demand for increased student achievement as required through the No Child Left Behind legislation was viewed with mixed emotions at each of the school sites. Some of the positive aspects of the act were reported as: focused intervention programs for children to achieve their fullest potential, increased accountability for teachers and administration and raised awareness of school performance by the school and local community. In addition, it was believed that NCLB had forced schools to implement new programming or revisit current structures that they otherwise would not have done.

Although it was felt that the intention of NCLB was good, most respondents loved the spirit of the act, each of the schools doubted the goals as being unrealistic in nature without the sufficient funding to accomplish them. The respondents' comments were consistent with the findings included in the literature review that the accountability demands were "too much, too fast, and too punitive." (Center on Education Policy, 2004). With limited resources (money,

time, and staff) available, all of the schools were forced to reallocate resources toward the programs that would make the most impact specifically on student achievement.

The accountability agenda connected to NCLB had created intense pressure for increased student achievement levels that forced schools to make programming decisions inconsistent with core middle level beliefs. The selected schools had embraced the middle school philosophy for nearly a decade prior to the passage of NCLB with little cause for change. In each school, an increased focus on mathematics and reading courses occurred at the expense of exploratory and elective courses. The administration of all three schools used individual student 5th grade PSSA scores to assist with programming decisions for children that had not demonstrated proficiency in mathematics and/or reading. Students were restricted from taking certain classes due to prior performance on the PSSA assessment. In some cases, the restrictions lasted throughout the middle school years. For example, in Schools B and C, non-proficient 6th grade students were denied the opportunity to take a foreign language exploratory course. The course served as a prerequisite for further foreign language study within the schools, thus excluding them from all additional foreign language study until high school. School A faced a similar situation as non-proficient students were excluded from a health course in seventh grade and a foreign language course in eighth grade. In all cases, additional reading or mathematics classes were substituted. These decisions by the schools moved the middle schools away from their philosophy of educating the entire child and focused solely on student achievement.

While the purpose of the study focused on the dilemma of choosing between the middle level philosophy of educating the entire child versus the singular demands of increased student achievement in NCLB, each of the schools presented an emerging viewpoint that if any secondary school structure (middle school, junior high school, high school) would be able to

meet the lofty goals of NCLB it would be the middle school because of the design within the school. Although the principals and teachers generally did not agree with the demands of NCLB, they felt that the environment and support structures within the middle school gave them the best opportunity to address those demands. The power of interdisciplinary teaming and responsibility over the child that accompanied that structure provided teachers with the resources and the ability to make meaningful decisions in regard to each child's education. As the demands for student achievement continued to increase, principals and teachers relied more heavily upon the team to address those needs. It is this structure of the middle school that was believed to better support the children and teachers in meeting the accountability the demands associated with NCLB.

Although each school had enjoyed the success of high PSSA scores for the overall eighth grade, each school included subgroups of students that caused various levels of concern across the three schools. The significance of the subgroup population influenced the severity of the school's reaction. All of the schools had a special education population that counted, or approached the requirements of counting as a subgroup (n=40) for AYP purposes. Programs at each school were adapted in order to increase the achievement of that group. Direct instruction models were instituted in Schools A and B. Inclusionary structures began to emerge in all of the schools. Elements of tracking, while in some instances never left the middle school mathematics program, were increased in order to better reach the instructional level of these children.

School A, which had the most subgroups of any of the schools, had the unique reaction of questioning the eligibility of certain students for some subgroups. While criteria such as race could not be affected, teachers in School A worried that special education students with only the most significant needs would be identified while students with less severe needs were left

undiagnosed. If fewer children were identified then the school would not be in jeopardy of reaching the criteria in which subgroups begin to count toward AYP.

The extent of subgroups within the school may have affected the significance the PSSA results had on programming and instructional decisions. All schools received their 8th grade PSSA results from the previous year and used them to identify areas of concern or weaknesses within the mathematics curriculum. School A, which had the lowest overall PSSA scores of the three schools and the highest number of subgroups, relied heavily on the PSSA results. Teachers and the principal from School A reported being anxious about receiving the scores back from the state and distributed scores to teachers as part of the initial in-service programs for all staff in late August. Teachers from School A reported being knowledgeable about both overall PSSA results for the school and individual results for students both from the 5th grade scores (incoming students) and the 8th grade. Test results were used for reflection purposes (8th grade) to identify strengths and weaknesses of the middle school program and to adjust the curriculum to meet the needs of the incoming students (5th grade). The principal of School A indicated that PSSA results have been analyzed by the school to this degree for at least four years. Test results from 5th grade had also been used to assist with program planning decisions within the school.

While Schools B and C were also aware of their PSSA scores, the principals and teachers did not demonstrate the same amount of interest in the utilization of the scores as respondents from School A. The only subgroup of any notable size present in the schools was special education. Principals at both of the schools indicated that raising test scores was a goal of the district; however it did not appear that the results of the tests were heavily analyzed. The principal of School B could not locate some of the results from prior years of the tests. The principal of School C delegated the responsibility of testing and analysis of the results to a vice

principal.  School C's principal was not able to convey any specific knowledge of the test when asked.  Teachers in both schools responded that they analyzed the scores to identify weak areas to target instruction for the upcoming year.  The administration in both schools did utilize the 5th grade assessment scores to some degree for programming decisions within the schools; however teachers at both schools did not indicate any specific knowledge of the 5th grade assessment results.  Analysis of the 8th grade scores seemed to only be at the overall school level and not with individual children.

2.      Research Objective 1 - Describe the influence of middle school philosophy, standards, and No Child Left Behind on curriculum, instruction, and assessment within the middle school.

The selected schools adopted the middle school philosophy that originally set a definite structure and organization to each of the schools that the principals and teachers believed to provide a better opportunity to increase student achievement.  The real impact on the schools was within the attitude of teachers and how they viewed children.  Although the curriculum and instruction was relatively unchanged, some changes in assessment included more authentic assessments being used as well as coordination across the team as to the timing of assessments.  Overall, the middle school philosophy had great impact on how schools were organized, increasing support for students and teachers, but had little influence on what was being taught.

While the structure of the school had been set by the middle school philosophy, standards had a great impact on the content being taught.  All schools responded that standards had impacted the content and pacing of the instruction, organization of the curriculum, and types of assessment being administered.  Standards gave teachers tools to determine emphasis of topics allowing them to narrow their focus and move deeper into certain areas.  Standards had also

promoted alignment of curriculum across classrooms within the same school and between buildings.

Two of the schools reported the use of standards by administrators to increase accountability on the part of the teachers. Standards identified a common goal for all children that teachers should be working toward. Lesson plans needed to match the standards to the instruction. Standards were used as a tool by the administrators for observational and evaluation measures.

A point of contrast among the schools was the degree to which students were aware of standards and their expected use within the classroom. Administrators in School A and C advocated the use of standards in the form of an objective posted in the classroom to inform students of the expectations for the class period. Teachers in School B were expected to post the actual standard and students were to know the standards to a degree of detail that included the letters and numbers of the standards. Although none of the teachers disagreed with articulating daily expectations to the children, the form of how it was to be done caused great concern.

Within the middle school, the middle level philosophy had great impact on the program in place while the standards movement defined the content to be taught. The addition of the No Child Left Behind Act added a much more heightened sense of accountability in the selected schools. Teachers and principals reported an unprecedented attention toward increasing student achievement. The result was that NCLB narrowed the curriculum of the middle school and eroded the core philosophy present within these schools.

Principals in all three schools felt that NCLB forced the school district to initiate change at a level and pace not seen before in the schools. Remedial programs, tutorial services, and

restructuring of how courses were designed surfaced within each of the schools. NCLB was an effective change agent within schools where roadblocks previously existed.

Although NCLB had initiated a significant amount of program change, not all of the change was being viewed as positive. Each of the schools had experienced a degree of curriculum narrowing as non proficient students were restricted from certain classes within the middle school. Affected classes included, but were not limited to, unified arts, foreign language, health, study hall, and physical education. In Schools B and C, foreign language restrictions in 6th grade had a lasting effect in the higher grades.

An additional commonality across the schools was the importance given to the PSSA assessment. The PSSA test had had moved from just something that schools had to do, to an event in which students were prepared for and that the results were meaningful for programming purposes.

School A and B had made some programming changes within the sixth grade teaming structure due to the demands of NCLB that affected mathematics instruction. Previously in School A, all sixth grade teachers taught language arts as part of their schedule. For 2004-2005, the number of language arts teachers was reduced as to allow them to become more content specialists. In School B, sixth grade teachers went from teaching multiple subjects to being teachers of a specific content area, thus creating content specialists in all subject areas with the emphasis being on reading and mathematics.

3.     Research Objective 2 - Describe the impact of the accountability demands for increased student achievement on teacher professional development within the middle school.

The schools had a very young faculty, each with at least 55% of their total staff having less than 9 years of teaching experience. These identified teachers would not have been in the school during the transition phase from the junior high to the middle school. They were not beneficiaries of the intense middle school focus and training that was present during that time.

The majority of professional development time within these schools was controlled by the school district and dedicated to student achievement topics. The content of the curriculum had become more of a focus with implementation of standards and the requirements of NCLB filling the agenda of in-service days.

The principals of the schools once again looked to the interdisciplinary team as the primary vehicle for professional development for middle level topics. Each school had team leaders in place and common planning time for teams. Considerable attention was given to the selection of the team leaders. Team leaders were expected to lead by example. Networks were in place within each school for teachers to learn middle level practices from other teachers.

The popularity of the middle school structure has also had a positive effect on hiring practices within the middle school and thus reducing the overall need to train people in middle school practices. Principals were able to be selective when hiring new teachers that were consistent with the philosophy of their school. Teacher preparatory programs were doing a better job in addressing middle level topics in the training. Principals felt that they were better able to find teachers with a core level of middle school understanding than was possible only a few years ago.

Two of the schools, A and C, were able to access opportunities outside of the school for middle level professional development. Both schools utilized the state and regional middle level organization's conferences to send both teachers and administrators. School A had several

teachers and administrators present at the conferences while School C was planning to host the regional conference within the year. The principals of all three schools spoke of the central office personnel in place within their district. While Schools A and C had administrators in place that understood and supported the maintenance of the middle school, School B was not as fortunate as his central office questioned the need to spend the time or money on such topics.

4.      Research Objective 3 - Analyze the effect of the "highly qualified teacher" requirement within NCLB on the middle school teaching staff.

All three schools reported a 100% level of compliance with the highly qualified teacher requirement as it applied to regular education teachers. All content area teachers in seventh and eighth grade in School B were secondary certified. Both School A and C had a few teachers working in grades seven or eight on an elementary degree, however had passed the middle school Praxis exam for the particular content area they were teaching.

A contributing factor of reaching compliance was how the schools went about the transition to the middle school from the junior high school. Each of the schools permitted and encouraged a high level of staff transfers during the early years of the middle school to ensure personnel were able to find the right fit for them personally and professionally. All of the schools had encouraged or required secondary certified teachers to remain at the seventh and eighth grade levels. The design of the sixth grade schedule required teachers to have an elementary certification. School B changed that design for 2004-2005, creating content specialist positions. Those teachers have been encouraged to obtain additional training.

Regulations pertaining to the extent that the highly qualified teacher requirement would impact special education had not been finalized at the time of the study, however, some impact

was being felt within School A and B. The principal of School A expressed great concern in the possible changes required for special education teachers. Retaining teachers in those positions would be more difficult in the future. School B began implementation of an instructional model in which the special education teacher and regular education teacher co-taught math classes together eliminating the need for the special education teacher to be considered highly qualified in mathematics.

School A's principal questioned the outcome of the highly qualified teacher requirement to actually increase the quality of teachers in school classrooms. He had experienced several of his teachers passing a middle school Praxis test in an area they did not have much formal training but now were considered highly qualified in that content area. At least one of his elementary certified teachers had passed the mathematics and science Praxis exams for the middle school level. That teacher was now considered as highly qualified to teach a seventh or eighth grade math or science class as someone that received formal university training in the area.

## C. REFLECTION/DISCUSSION

The design of the research project provided for an in-depth exploration of how schools with exemplary middle level programs in place were handling the accountability demands of No Child Left Behind. The use of the criteria for the Donald Eichhorn Award allowed for focus on schools that have been recognized as having the key components of the middle school in place.

The schools identified had reached overall levels of student performance of at least 45% higher than the requirements for AYP for 2004. The attempt to describe the dilemma of regular education teachers in meeting the demands of NCLB was made difficult due to the schools' level

of past success.  Most regular education teachers did not convey a high level of concern about AYP or NCLB.  They did not possess in depth knowledge of the PSSA results.  Subgroup performance did cause some heightened concern within the schools.  Each of the schools had a subgroup of special education that created concern on the part of the principal.  School A also had subgroups on concern in the areas of black and economically disadvantaged.  Interviews with the school principals were able to take into account concerns about subgroup performance as well as other issues present at the building level.   A consideration for change in the study would be to concentrate more upon the role of the school principal in improving subgroup performance.   An additional area would have been to interview teachers of the identified subgroups instead of the regular education teachers.

The accessibility and use of standardized test data by the individual schools was also a concern within the study.  Each of the principals indicated that their schools utilized the PSSA data for decision making purposes; however School A was the only school in which an in depth knowledge of the test data was evident over time.  The principal of School B was unable to locate data from 2001.  The principal of School C had assigned responsibility for test data to a vice principal and was unable to verbalize school results.  The teachers in School B and C were also unable to discuss specific aspects of their schools results other than overall proficiency rates.  Few teachers were able to convey knowledge of individual student results at the $5^{th}$ or $8^{th}$ grade level.

An additional concern regarding the use of the PSSA data within the schools surfaced during the establishment of the timeline for school visitations by the researcher.  The original goal was to complete school visits in late August or early September, however principals in Schools B and C either did not receive their PSSA data from the central office, or had not taken

the time to analyze it.  Even though principals reported that PSSA data was used to make instructional decisions, principals and teachers began the 2004-2005 school year without even viewing test results available to them.

Although the timeline of the study was somewhat extended due to delays in PSSA accessibility, the study actually was made more effective by waiting for the 2004 data to be available.  With a third year of data present since the passage of NCLB, the study was able to report more conclusively about how PSSA results were beginning to be used for some programming decisions at the school level.  It was also able to be concluded that even after four years of reporting the data in the same format (advanced, proficient, basic, below basic) some schools were still not utilizing the information to its potential.  Some teachers within the higher performing schools still refused to acknowledge NCLB and doubted its staying power.

## D.    IMPLICATIONS FOR POLICY AND PRACTICE

The No Child Left Behind Act of 2001 calls for schools to increase levels of student achievement to 100% proficiency by the year 2014.  Schools not making the designated amount of progress each year will be required to take steps to improve student achievement or face sanctions from the federal government.

The legislation reflects an increase in accountability for principals and teachers in the area of student achievement.  This focus has forced middle schools, originally designed to meet the diverse needs of transescent children, to narrow the curriculum as the elements of middle level philosophy begin to erode.  The literature review and findings of this study provides insight

into how leaders within middle schools can meet the demands of this new legislation without abandoning the school's middle level philosophy.

1.      Policy Implications for middle level educators resulting from study findings:

a.      Heterogeneous grouping, heralded by advocates of the middle school is beginning to be replaced by student tracking.  Programs within the middle school have stressed a balanced curriculum with a focus on core content, exploratory, and arts education.  The intense focus on student performance within the areas of mathematics and reading as evidenced during the interviews at each of the schools in the study resulted in restricted access to foreign language, unified arts and physical education courses for non-proficient students with additional remedial classes being substituted. The result is an overuse of tutorial classes for children in place of courses that promote high expectations.

School districts should be cautious in substituting remedial classes for students.  Schools have dedicated immense resources toward remedial efforts of the non-proficient children that may not impact the curriculum for the proficient or advanced child.  In reality, those children may be the students being left behind by a curriculum absent of rigor and high expectations. When AYP levels of proficiency increase, school districts may find themselves with higher percentages of children unable to meet the requirements.

b.      Instructional standards have been part of the mathematics landscape for many years, however, the increased focus on student achievement and the implementation of a single high stakes assessment tied directly to the standards is increasing their importance within schools. Teachers both within the same building and across districts have very different understandings for the use and implementation of standards for instructional purposes.  For example, schools

within the study varied in regard to their standards implementation from students being required to memorize standards by number to standards being visibly absent from the lesson.

School districts should examine the issue of standards and their implementation toward the goal of becoming a standards-based school district. Variations in their use within lesson planning, classroom displays and assessment tools create confusion among staff members and reduce the level accountability able to be applied by the building administration.

c.      As indicated earlier, schools are using PSSA results to place students in tutorial courses in an effort to remediate skills not previously learned by the student. For example, School A had 21% of the overall 8th grade scoring at the non-proficient level. The same school retained less than 1% of the same children within the 8th grade. Students are passing locally designed assessment but are not able to demonstrate proficiency on the PSSA assessment. A discrepancy existed between what schools considered acceptable student progress versus the proficiency rates as set by the state for the PSSA.

School districts should re-examine their criteria for passing grades in light of the NCLB requirements for acceptable student performance. It is very possible that students are scoring poorly on the PSSA assessment while still meeting school district criteria for passing with a "D" average. With the current system in place, schools are relying heavily upon remediation practices to "catch up" the children on skills that were missed. As the criteria for AYP increases for NCLB the discrepancy will continue to grow increasing the demand for remediation.

2.       Practice Implications for middle level educators resulting from study findings:

a.       As presented in the literature review and findings of this study, structures for the education of the middle grades have varied greatly over time.  Local school districts were able to design a program that met the needs of their community and children.  Programs ranged from the traditional junior high school to the middle school.  The sledgehammer approach of NCLB is forcing school districts to adapt their programs in a manner that is inconsistent with middle level philosophy.  The accountability demands associated with NCLB are creating the genesis of the next major reform movement for middle grades as districts strive to create a balanced approach for educating middle level children.

As schools begin to look for that aspect of balance, it is critical that school leaders identify the most critical elements present within the middle school. This study demonstrated the importance of implementing a process for school review within a middle school.  Each of the schools in the study had voluntarily participated in the Donald Eichhorn Award nomination process. The reflective process allowed the schools to identify their program strengths and needs. Teachers learned a great deal about what was occurring around them in a large school building. For schools within this study, the element of teaming was determined to be most critical to the success of the school and "not negotiable" as changes to the school take place in light of NCLB. The type of review described is much different in design and intent than the typical bureaucratic review audit often taking place in schools.  The reflective review focuses on the process of the review and collaboration required to accomplish it while the audit focuses on knee jerk reactions with short time lines for completion.

b.    Respondents from each of the schools commented on the importance of PSSA results in data driven decisions within the school.  Teachers in each of the schools reported that they examined test results for areas of strength and weaknesses within the curriculum.  Individual student scores were reported to be used to make certain placement decisions.  Although respondents in each of the schools commented on the importance of the assessment data, School B and C accessed their data only after the beginning of the school year.  Timelines for data collection revealed that the school with the lower levels of performance and more subgroups (School A) actually accessed their PSSA information much earlier in the school year than the other schools and had a much deeper understanding of the results for a longer period of time.  Principals of the higher scoring schools (School B and C) seemed less concerned about their actual scores on the PSSA.  They also were less able to verbalize understanding of specific information contained within the reports other than overall scores for the schools.  During contact with the schools in early to mid September, some of the schools had not even seen their 2004 results.

An implication for practice would be for schools to access their PSSA scores as soon as they are available from the Pennsylvania Department of Education.  Information contained in the reports provided could assist in the development of courses before the school year would begin.  Use of the data in a more timely manner could allow for a stronger school program, better able to meet student needs, to be in place earlier in the school year.

c.    Each of the teachers in the study reported that the introduction of instructional standards has caused them to examine their curriculum scope and sequence to ensure that assessed topics are taught before the assessment window.  In addition, the importance of the PSSA has caused schools to add remedial and tutorial programs scheduled to assist students with the assessment.

All of the schools in the study dedicated a large amount of time toward the preparation of students for the assessment.

An implication for practice would be for schools to reexamine their scope and sequence to determine what type of topics and content are presented after the assessment window concludes. If teachers are presenting all of the "important" topics before the test so that children are best prepared, what is being taught for the 8 or 9 weeks after the test? The PSSA test seems to have become the concluding event for grade levels that are assessed for AYP purposes resulting in students shutting down for the remainder of the year.

## E. FUTURE RESEARCH

Based upon findings and interviews presented in this study, the researcher offers the following questions that may be explored in future research:

1. Can this study be replicated using other middle school sites that have not fully embraced the middle level philosophy to determine if their level of adaptation to the accountability demands of No Child Left Behind is consistent?

2. If the middle school contains a structure that assists in meeting the accountability demands of NCLB, would the incorporation of a similar structure within other secondary school settings also support increased student achievement?

3. Would similar responses to the accountability demands be found through the examination of other content areas within the middle school?

4. Can this type of study be replicated in a middle school that did not have similar levels of student achievement?

5.     What are the short and long term implications on the middle level philosophy as the accountability demands of NCLB increase?


## F.     IMPACT OF NO CHILD LEFT BEHIND ON THE MIDDLE SCHOOL

The middle school movement led by Eichhorn and others had changed the education structure for children in the middle grades.  Schools were designed with programs to meet the social, developmental, physical, and intellectual needs of the transescent child.  The organization of the middle school supported children through one of the most difficult periods of development of their young lives.  By the 1980's, middle schools had replaced the junior high school across the country as the dominant structure for grades 6, 7, and 8.

The introduction and implementation of the No Child Left Behind Act of 2001 had a negative effect on middle schools and has forced school administrators to enact programs that are inconsistent with the middle school.  NCLB required middle schools to impose a different structure that did not benefit the children within the school.  Research conducted for this study has found schools willing to adapt their middle school program for the sole benefit of increased test scores at the expense of programs that have benefited children.

Prior to NCLB, middle school programs featured heterogeneous grouping of children within interdisciplinary teams.  Exploratory opportunities within unified arts, foreign language, and music were provided to all children.  Classroom instruction stressed extension and accommodations to meet the needs of diverse children within the classroom setting.  Special education instruction stressed inclusionary practices were appropriate based on student needs.  Homebase advisory programs assisted children in the development of social and peer relation

skills critical for this age group.  In addition, schools were proud of the multitude of experiences they were able to provide such as extracurricular clubs, sports, and leadership type programs.

The accountability agenda tied to NCLB has forced schools to make programming decisions that were inconsistent with the middle school philosophy.  Tracking structures began to return to the middle school.  Non-proficient students (as identified on 5$^{th}$ grade PSSA assessments) were forced to take remedial reading and/or mathematics courses in place of exploratory courses.  Some of the scheduling decisions impacted students for their entire middle school career, placing them in a track that previously did not exist.  The focus on student achievement had caused a significant narrowing of the curriculum being offered to children.

A significant feature of the NCLB legislation was the attention given to subgroups within schools.  The intent of the focus was to ensure high expectations for all children through a rigorous curriculum and meaningful instruction.  In reality, the pressure on schools has created a secondary culture within the school fueled by a high level of student tracking.  Non-proficient students within an identified subgroup experienced a very different school than that of proficient, non-identified children.  Educators in one school site that had several identified subgroups feared a reduction of services to at-risk children for fear of identifying more children as part of particular subgroups.  NCLB created an environment of accountability that was insulting to all currently held notions of diversity within the middle school.

The Pennsylvania Department of Education has used the phrase "artful use of infrastructure" in many of the planning documents for the school and district improvement process as required by NCLB.  The implementation of the middle school was truly an artful use of infrastructure as school districts reorganized the programs and personnel within junior high schools to create an authentic learning community centered on the needs of the middle school

child.  The wave of change associated with NCLB has been only a manipulation of that structure. Schools have altered structures that have been proven beneficial to the entire child for the singular purpose of increasing a score on a standardized assessment.  School administrators so focused on not having their school identified on any list, were willing to destroy elements of their school.  What damage has taken place in middle schools due to NCLB in the name of increased student achievement?

Until middle schools discover what it is that they stand for in the education of the transescent child, they will stand for anything.  The schools in this study had participated in the Donald Eichhorn Outstanding Middle School Award program which consisted of a school review and site visit process.  School personnel were able to reflect upon programs and elements they found critical to their success as a school.  It was through this process that school leaders could identify the "non-negotiable" parts of their school that could not be touched.  In its current form, NCLB has the power to destroy the middle school structure.  It is imperative for middle school educators to be able to identify elements of the middle school that must endure.  Failure to do so will result in the end of the middle school and a structure that is good for children.

# APPENDIX A

## INTRODUCTORY SCRIPT TO PARTICIPATE IN A RESEARCH STUDY

**TITLE:**     Response of Selected Middle Schools to the Accountability Demands of
No Child Left Behind within Mathematics Curriculum and Instruction

**PRINCIPAL INVESTIGATOR:**     Randal A. Lutz
Doctoral Student – University of Pittsburgh
     School of Education
3541 Churchview Avenue
Pittsburgh, PA 15236
412-882-4363 (Home)
412-885-7530 (Work)
rlutz@bwschools.net

*Why is this research being done?*

   You are being asked to participate in this study so that new information may be found to assist educational research and therefore practice.  The accountability demands of current educational legislation have forced schools to re-examine current practices and organization. The adaptation of school programs to these demands needs further research to describe the dilemma facing middle schools are they struggle between two inherently opposing forces.

*Who is being asked to take part in this research study?*

   Three middle schools in Western Pennsylvania that have received the Donald Eichhorn Award for outstanding middle level program have been asked to participate in this research study.  Teachers of mathematics and the principal of the school are being asked to participate in an interview.

*What are possible benefits and risks from taking part in this study?*

   All of the research completed will be made available to those who participated in the study.  This research study does not involve any foreseeable risks or discomforts to the subjects.

*Is my participation in this research study voluntary?*

Your participation in this research study is completely voluntary. You do not have to take part in this study and, should you change your mind, you can withdraw from the study at any time.

**In keeping with the guidelines as submitted to the Institutional Review Board of the University of Pittsburgh, please be advised of the following:**

- o All research will be conducted in a manner approved by the Institutional Review Board of the University of Pittsburgh.

- o All research will be conducted in such a manner that ensures confidentiality and anonymity of all participants.

- o All information will be treated in a secure manner through the use of initials or the term "teacher #" or "principal" in the transposition of the interviews.

- o No identifiers will be made with reference to the interviewees' individual school or school district.

- o Audio recording of the interview will occur only with the respondent's permission. If not, written notes will solely record the exchange.

- o The subjects will not be assessed any costs during the study and will not receive a payment for participation in the study.

**INTERVIEW PROTOCOL**
**Principal and Teacher Interviews**

**I.      Introduction**

**The researcher will:**

A.  Explain his reason for interest in this study.

B.  Explain the structure and purpose of the research study.

C.  Stress the measures of confidentiality.

D.  Ask the interviewee to sign the Consent Form.

E.  Ask for permission to audio-record the interview.

F.  Ask for any questions from the interviewee.

**II.     Influence of Middle Level Philosophy**

**The researcher will ask the interviewee to:**

A.  Define the concept of middle level education as they understand it.

B.  Describe examples of programs within the school that best illustrate the middle school

philosophy in action.

C.  Describe any professional development opportunities where they received formal training on programs consistent with the middle school philosophy and how the training added to their knowledge of the concept.

D.  Describe the impact or influence the middle school philosophy may have had within the middle school in the areas of curriculum, instruction, and assessment. Provide specific examples where applicable.

E.  Explain any issues, obstacles, or successes encountered during the implementation and maintenance of the middle school.

## III.    Influence of Educational Standards

**The researcher will ask the interviewee to:**

A.  Define the concept of standards based education as they understand it.

B.  Describe any professional development opportunities where they received formal training on programs aligned with standards implementation and how the training added to their knowledge of the concept.

C.  Describe the impact or influence that standards-based education has had within the middle school in the areas of curriculum, instruction, and assessment. Provide specific examples where applicable.

D.  Explain any issues, obstacles, or successes encountered during the implementation of standards based education within the school.

## IV.    Influence of No Child Left Behind

**The researcher will ask the interviewee to:**

A. Explain the basic tenets of the No Child Left Behind legislation as they apply at the school level.

B. Describe any professional development opportunities where they received formal training on programs aligned with the implementation of No Child Left Behind and how the training added to their knowledge of the legislation.

C. Describe the impact or influence that the No Child Left Behind legislation has had within the middle school in the areas of curriculum, instruction, and assessment. Provide specific examples where applicable.

D. Explain any issues, obstacles, or successes encountered during the implementation of measures required within No Child Left Behind within the school.

**V.     Strategies and Activities in Response to Competing Forces in the Middle School**
**The researcher will ask the interviewee to:**

A. Describe any changes in the organizational arrangements of the middle school due to increased demands for student achievement. Why were these arrangements selected? How do these arrangements meet the needs of the students within the school?

B. Explain the major influences present in how the mathematics curriculum is developed and implemented. Are integrating themes found in the curriculum?

C. Explain any instructional strategies/activities that have been implemented to specifically address the demands for increased student achievement related to No Child Left Behind. Give specific examples. What impact did those activities have on the middle level philosophy of the school?

D. Comment on the emphasis placed on student assessment within the mathematics curriculum. What types of assessment are present? What extent does assessment results impact instructional decisions?

E. Explain how PSSA test results are used for instructional decision-making purposes. Who is part of this process? What impact does the subgroup information have in the process? Give specific examples.

F. Describe the impact of the need for increased student achievement on the professional development topics presented to the middle school staff. How have the topics changed over time? Give specific examples.

G. Comment on the effect of the "highly qualified teacher" requirement of NCLB on teacher recruitment, hiring practices, organizational arrangements, and professional development. Give specific examples or issues.

H. Describe the overall impact that the demand for increased student achievement from the No Child Left Behind legislation has had on the mathematics curriculum within the middle school designed around the middle level philosophy. Give specific examples or issues.

**VI. Closing**

**The researcher will ask the interviewee to:**

A. Add any comments or examples of issues that would aid in the description of the dilemma facing middle schools in the attempt to meet the demands of increased student achievement levels.

B. Contact the researcher if they would like to add any information over the next two weeks that was not covered in this session.

# BIBLIOGRAPHY

Adelson, J. (1983, Summer). The growth of thought in adolescence. *Educational Horizons*, 156-162.

Alexander, W. M. (1998). The junior high school: A changing view. In R. J. David (Ed.), *Moving forward from the past* (pp. 3-13). Columbus, OH: National Middle School Association.

Alexander, W. M., Williams, E. L., Compton, M., Hines, V. A., & Prescott, D. (1968). *The emergent middle school*. New York, NY: Holt, Rinehart and Winston.

Atwater, E. (1988). *Adolescence*. Englewood Cliffs, NJ: Prentice Hall.

Beane, J. A. (1990). *A middle school curriculum: From rhetoric to reality*. Columbus, OH: National Middle School Association.

Bergman, S. (1992). Exploratory programs in the middle level school: A responsive idea. In J. L. Irvin (Ed.), *Transforming middle level education: Perspectives and possibilities* (pp. 179-192). Needham, MA: Allyn and Bacon.

Bossing, N. L., & Cramer, R. V. (1965). *The junior high school*. Boston: Houghton Mifflin.

Briggs, T. H. (1920). *The junior high school*. Boston: Houghton Mifflin.

Calhoun, F. S. (1983). *Organization of the middle grades: A summary of research*. Arlington, VA: Educational Research Services.

Carnegie Council on Adolescent Development. (1989). *Turning points: Preparing American youth for the 21st century: The report of the task force on education of young adolescents*. Washington, D. C.: Carnegie Corporation of New York.

Center on Education Policy. (2004). *From the capital to the classroom*. Washington, D. C.: Center on Education Policy.

Cohen, D. K. (1989). Teaching practice: Plus que ca change. In P. W. Jackson (Ed.), *Contributing to educational change: Perspectives on research and practice* (pp. 27-84). Berkeley, CA: McClutchan.

Cohen, D. K., & Ball, D. L. (1999). *Instruction, capacity, and improvement* (No. RR-043, CPRE Research Report). Philadelphia: University of Pennsylvania, Consortium for Policy Research in Education.

Conant, J. B. (1960). *Recommendations for education in the junior high school years*. Princeton, NJ: Educational Testing Service.

Connors, N. A. (1992). Teacher advisory: The fourth R. In J. L. Irvin (Ed.), *Transforming middle level education: Perspectives and possibilities* (pp. 162-178). Needham, MA: Allyn and Bacon.

David, R. J. (Ed.). (1995). *Eichhorn:  The early years in middle level education*. Pittsburgh, PA: Pennsylvania Middle School Association.

Davis, C. O. (1924). *Junior high school education, Yonkers-on-Hudson*. New York: World Book Company.

Davis, P., & Hersh, R. (1981). *The mathematical experience*. Boston: Houghton Mifflin.

Eichhorn, D. H. (1966). *The middle school*. New York: The Center for Applied Research in Education, Inc.

Eichhorn, D. H. (1972). The emerging adolescent school of the future-now. In R. David (Ed.), *Moving forward from the past* (pp. 54-71). Columbus: National Middle School Association.

Eichhorn, D. H. (1980). The school. In M. Johnson (Ed.), *Toward adolescence: The middle school years, part I* (pp. 56-73). Chicago: National Society for the Study of Education.

Eichhorn, D. H. (1998). New knowledge of 10 through 13 year olds. In R. David (Ed.), *Moving forward from the past*. Columbus, OH: National Middle School Association.

Elkind, D. (1978). *The child's reality: Three developmental themes*. Hillsdale, NJ: Erlbaum.

Elmore, R. F. (2000). *Building a new structure for school leadership*. Washington, D. C.: The Albert Shanker Institute.

Elmore, R. F., & Fuhrman, S. H. (2001). Holding schools accountable: Is it working? *Phi Delta Kappan, 83(1),* 67-72.

Flavell, J. (1963). *The developmental psychology of Jean Piaget*. New York: D. Van Nostrand Company, Inc.

George, P. (2002). *No Child Left Behind: Implications for middle level leaders*. Westerville, OH: National Middle School Association.

Grambs, J. D., Noyce, C. G., Patterson, F., & Robertson, J. (1961). *The junior high school we need*. Alexandria, VA: The Association of Supervision and Curriculum Development.

Jackson, A. W., & Davis, G. A. (2000). *Turning points 2000: Educating adolescents in the 21st century: A report of the Carnegie Corporation of New York*. New York: Teachers College Press.

Johnston, J. H. (1992). Youth as cultural and economic capital: Learning how to be. In J. L. Irvin (Ed.), *Transforming middle level education: Perspectives and possibilities* (pp. 46-62). Needham Heights, MA: Allyn and Bacon.

Kent, C. C. A school practitioner guide:  An English translation of the No Child Left Behind Act of 2001: The challenges and opportunities to produce literate students by 2013-2014 (5 ed.). University of Pittsburgh: Tri-State Area School Study Council.

Koos, L. V. (1927). *The junior high school*. Boston: Ginn.

Lounsbury, J. H. (1991). *As I see it*. Columbus, OH: National Middle School Association.

Lounsbury, J. H. (1992). Perspectives on the middle school movement. In J. L. Irvin (Ed.), *Transforming middle level education: Perspectives and possibilities* (pp. 3-15). Needham Heights, MA: Allyn and Bacon.

Lounsbury, J. H. (1998). How the junior high school came to be. In R. J. David (Ed.), *Moving forward from the past* (pp. 110-114). Columbus, OH: National Middle School Association.

Lounsbury, J. H., & Clark, D. C. (1990). *Inside grade eight: From apathy to excitement*. Reston, VA: National Association of Secondary Principals.

McEwin, C. K. (1992). Middle level teacher preparation and certification. In J. L. Irvin (Ed.), *Transforming middle level education: Perspectives and possibilities* (pp. 369-380). Needham Heights, MA: Allyn and Bacon.

Meyer, J., & Rowan, B. (Eds.). (1992). *The structure of educational organizations, organizational environments: Rituals and rationality*. Newbury Park, CA: Sage.

Milanovich, D. K. (1993). *Evaluation procedures and assessment instruments for a middle level program.* University of Pittsburgh, Pittsburgh.

Milgram, J. (1992). A portrait of diversity: The middle level student. In J. L. Irvin (Ed.), *Transforming middle level education: Perspectives and possibilities* (pp. 16-27). Needham Heights, MA: Allyn and Bacon.

NASSP Council on Middle Level Education. (1986). *An agenda for excellence at the middle level*. Reston, VA: National Association of Secondary School Principals.

National Center for Educational Statistics. (1999). *Trends in international mathematics and science study: TIMSS Report*. Washington, D. C.: Institute of Education Sciences.

National Commission on Excellence in Education. (1983). *A nation at risk: The imperative for educational reform*. Washington, D. C.: U.S. Government Printing Office.

NCTM. (1989). *Curriculum and evaluation standards for school mathematics*. Reston, VA: National Council of Teachers of Mathematics.

NCTM. (1991). *Professional standards for teaching mathematics*. Reston, VA: National Council of Teachers of Mathematics.

NCTM. (2000). *Principles and standards for school mathematics*. Reston, VA: National Council of Teachers of Mathematics.

NMSA. (1982). *This we believe*. Columbus, OH: National Middle School Association.

NMSA. (2003a). *Research and resources in support of This We Believe*. Westerville, OH: National Middle School Association
.
NMSA. (2003b). *This we believe: Successful schools for young adolescents*. Westerville, OH: National Middle School Association.

Pennsylvania Department of Education. (2003a). Overview of No Child Left Behind: Pennsylvania Department of Education. Available on the Web at www.pde.state.

Pennsylvania Department of Education. (2003b). PA Accountability System-NCLB: PowerPoint Presentation: Pennsylvania Department of Education. Available on the Web at www.pde.state.

Popper, S. H. (1967). *The American middle school: An organizational analysis*. Waltham, MA: Blaisdell Publishing.

Public Agenda. (2003). *Rolling up their sleeves: Superintendents and principals talk about what's needed to fix public schools*. Washington, D. C.: Public Agenda.

Reeves, D. (2000). Standards are not enough: Essential transformations for school success. *National Association of Secondary School Principals Bulletin, 84*(620), 5-19.

Rice, A. H. (1964). What's wrong with junior high? Nearly everything. *Nation's Schools, 74*(5), 32.

Rowan, B. (1990). *Commitment and control: Alternative strategies for the organizational design of schools*.

Shonfeld, W. A. (1950). Inadequate masculine physique as a factor in personality development in adolescent boys. *Psychosomatic Medicine, 12*(53).

Spear, R. C. (1992a). Appropriate grouping practices for middle level students. In J. L. Irvin (Ed.), *Transforming middle level education: Perspectives and possibilities* (pp. 244-274). Needham, MA: Allyn and Bacon.

Spear, R. C. (1992b). The process of change: Developing effective middle school programs. In J. L. Irvin (Ed.), *Transforming middle level education: Perspectives and possibilities* (pp. 102-138). Needham, MA: Allyn and Bacon.

Steinberg, J. (1985). *Adolescence*. New York: Knopf.

Stowell, J., & McDaniel, J. (1997). The changing face of assessment. In J. L. Irvin (Ed.), *What current research says to the middle level practitioner* (pp. 137-150). Columbus, OH: National Middle School Association.

Tanner, J. M. (1978). *Fetus into man: Physical growth from conception to maturity*. Cambridge, MA: Harvard University Press.

Tanner, J. M., & Marshall, W. A. (1974). Puberty. In J. A. Davis & J. Dobbong (Eds.), *Scientific foundations of pediatrics*. Philadelphia: Saunders.

Toepfer, C. F. (1992). Middle level school curriculum: Defining the elusive. In J. L. Irvin (Ed.), *Transforming middle level education: Perspectives and possibilities* (pp. 205-243). Needham, MA: Allyn and Bacon.

United States Department of Education. (2002). The No Child Left Behind Act of 2001: Executive summary. Washington, D. C.: United States Department of Education. Available on the Web at www.ed.gov.

United States Department of Education. (2003a). The facts about...getting results. Washington, D.C.: United States Department of Education. Available on the Web at www.NoChildLeftBehind.gov.

United States Department of Education. (2003b). The facts about...good teachers. Washington, D.C.: United States Department of Education. Available on the Web at www.NoChildLeftBehind.gov.

United States Department of Education. (2003c). The facts about...investing in what works. Washington, D.C.: United States Department of Education.  Available on the Web at [www.NoChildLeftBehind.gov](www.NoChildLeftBehind.gov).

United States Department of Education. (2003d). The facts about...local control and flexibility. Washington, D.C.: United States Department of Education.  Available on the Web at [www.NoChildLeftBehind.gov](www.NoChildLeftBehind.gov).

United States Department of Education. (2003e). The facts about...state standards. Washington, D.C.: United States Department of Education.  Available on the Web at [www.NoChildLeftBehind.gov](www.NoChildLeftBehind.gov).

Vars, G. F. (1998). Preparing junior high teachers. In R. J. David (Ed.), *Moving forward from the past* (pp. 187-196). Columbus, OH: National Middle School Association.

Weick, K. E. (1976). Educational organizations as loosely-coupled systems. *Administrative Science Quarterly, 21*(1), 1-19.

Wheelock, A. (1992). *Crossing the tracks: How "untracking" can save America's schools*. New York: The New Press.